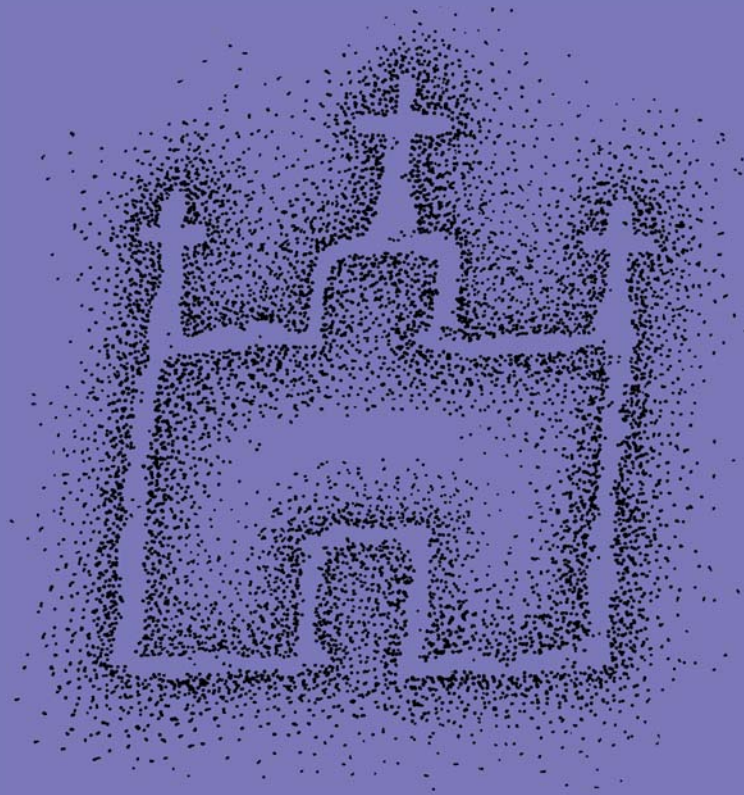


# **COLORADO HISTORY: A CONTEXT FOR HISTORICAL ARCHAEOLOGY**



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On the cover:

Petroglyph of a Hispanic church at site 5LA7126 (“Flock and Keeper Panels”) located on the Comanche National Grassland along the Purgatoire River in Las Animas County, Colorado. The church glyph measures about 30 cm by 50 cm. It and the small rectangle to its right make up Panel 2 at this site. Panel 2 and the adjacent prehistoric Panel 1 are shown below. Information provided by Michelle Stevens, U.S. Forest Service, Comanche National Grassland. Cover illustration drafted by Anne McKibbin. Photograph was taken and provided by Minette C. Church.



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Dedicated in memory of  
**Bill and Nancy Buckles**

who provided the foundation upon which this book rests





## FOREWORD


While Colorado's Native American legacy extends back at least 11,000 years, history documented by contemporaneous writing is a mere 500 years old in this part of North America. Nonetheless, relatively recent effects on the landscape have been profound, including the construction of roofed buildings and a myriad of special purpose structures. Portable artifacts also have much to tell us about the life ways and social interactions of our precursors here.

Falling in the interface between the disciplines of history and anthropological archaeology, historical archaeology has great potential for adding a deeply human dimension to our understanding of the recent past. As important as providing scholarly insights not fully evident in the written record, a thoughtful examination and presentation of material culture brings immediacy and reality to history. Public excitement grows when people are confronted with the very items and places used by those who came before. Historical archaeology is an immense aid to interpretation.

As a professional endeavor, historical archaeology is a relatively young specialization in this state. It is greatly to their credit that Colorado's leading practitioners have joined together to prepare this volume. It is our pleasure to introduce this work to readers as a context, a framework for conducting future work in this emergent and maturing field that joins site investigation with documentary research.



Susan Collins  
State Archaeologist  
Deputy State Historic Preservation Officer



Georgianna Contiguglia  
President, Colorado Historical Society  
State Historic Preservation Officers



## TABLE OF CONTENTS

FOREWORD .....	iii
LIST OF FIGURES .....	xiv
LIST OF TABLES .....	xv
ACKNOWLEDGMENTS .....	xvii
AUTHORS' ACKNOWLEDGMENTS .....	xix
CONTRIBUTORS .....	xxi
<b>CHAPTER 1. HISTORICAL ARCHAEOLOGY .....</b>	<b>1</b>
INTRODUCTION .....	1
HISTORICAL ARCHAEOLOGY AND ARCHAEOLOGY IN GENERAL .....	2
HISTORY OF HISTORICAL ARCHAEOLOGY .....	4
DEFINITIONS .....	6
DATA.....	9
METHODOLOGY.....	11
Documents.....	12
Artifacts.....	14
Oral Narratives .....	15
RESEARCH TRENDS IN THE WESTERN UNITED STATES AND COLORADO .....	16
Testing Models Proposed by Social Historians and Social Scientists.....	16
Worster, Wittfogel, and Water in Colorado .....	16
Boom-and-Bust Economies .....	17
Conquest.....	18
Frontier Urbanism .....	18
Western Dependence on the Federal Government .....	19
Landscape Approaches.....	20
Other Approaches in Colorado.....	20
HISTORICAL SITE RECORDING AND THE OAHP DATABASE.....	21
Standardization of Terms .....	22
Archaeology and Architecture.....	24
Dates.....	24
Eligibility.....	24
Suggestions.....	24
SITE SIGNIFICANCE AND ELIGIBILITY .....	25
Insignificance and Ineligibility.....	26
CONCLUSION .....	27
<b>CHAPTER 2. PROTOHISTORIC AND HISTORIC NATIVE AMERICANS .....</b>	<b>29</b>
DESCRIPTION AND BACKGROUND .....	29
Definition of Theme and Chapter Goals .....	29
What is Protohistory? .....	30
The General Taxonomic Phases of American Indian Culture History .....	33
The General Taxonomic Model.....	33
Phase I: Late Pre-contact Phase Statewide .....	34
THE UTE .....	36
Taxonomic Considerations for Historic Ute Archaeology .....	36
The Ethnological/Ethnohistorical Research Background.....	36
Taxonomies for Ute Culture Change and Archaeology .....	38
Phase I-Late Prehistoric Period Ute/Canalla Phase (to ca. A.D. 1540 only).....	45
Baseline Ute Sociopolitical Systems .....	45
Ute Canalla Phase Archaeological Culture .....	49

Ute Subsistence and Economics .....	54
Trade and Outside Connections .....	55
Demography.....	55
Ideology .....	56
Phase II-Ute Early Spanish Contact "Rivera" Phase and Protohistory (ca. 1540 to 1820).....	57
General Phase Description .....	57
Ethnohistorical Context .....	59
Protohistoric and Other Early Contact Phase Alterations to the Canalla Phase Archaeological Culture.....	64
Phase III-The Utes Middle Contact Mexican "Robideau" Phase (ca. A.D. 1820-1860) .....	67
General Phase Description .....	67
Ethnohistorical Context .....	67
Middle Contact Phase Alterations to the Canalla Phase Archaeological Culture.....	69
Phase IV-Ute Late Contact Chief Ouray, Chief Douglas (and Provisional Chief Ignacio) Phases (ca. 1860-1881).....	72
General Phase Description .....	72
Ethnohistorical Context .....	73
Late Contact Phase Alterations to the Contact-Traditional Ute Archaeological Culture.....	80
Representation of Site Types in State Database .....	85
Sites within the Theme Recorded in the State .....	85
Potential for Sites Within Theme to Exist and Be Recognized .....	86
Interrelatedness of Theme with Other Topics or Themes.....	88
THE APACHE AND THE DISMAL RIVER ASPECT .....	88
General Phase Description.....	88
Ethnohistorical Context .....	89
The Protohistoric Dismal River Archaeological Aspect of the Early Contact Phase Plains Apache .....	90
Protohistoric Changes to the Late Pre-contact Phase Dismal River Aspect Archaeological Culture .....	91
Representation of Site Types in State Database .....	91
Numbers of Sites within the Theme Recorded in the State.....	91
Adequacy of Recordation and Evaluation.....	92
Potential for Sites Within Theme to Exist and Be Recognizable .....	92
Interrelatedness of Theme with Other Topic or Themes .....	92
PLAINS EQUESTRIAN TRIBES .....	92
General Phase Description.....	92
Summary Ethnohistorical Backgrounds .....	95
Comanche .....	95
Cheyenne and Arapaho .....	97
Representation of Site Types in State Database .....	100
Sites Within Theme Recorded in State .....	100
Adequacy of Recording and Evaluation .....	100
Potential for Sites Within Theme to Exist and Be Recognizable .....	100
Interrelatedness of Theme with Other Topics and Themes .....	101
THE NAVAJO, SHOSHONE, AND RELIC FREMONT .....	101
The Navajo.....	101
The Eastern Shoshone.....	103
The Relic Fremont .....	104
EVALUATIONS OF SIGNIFICANCE .....	104
RESEARCH NEEDS .....	105
<b>CHAPTER 3. SETTLEMENTS.....</b>	<b>107</b>
<b>DESCRIPTION AND BACKGROUND .....</b>	<b>107</b>
A Synopsis of Settlement History in Colorado.....	107

Overlapping Hinterlands .....	108
Gold and Silver Mining Settlement.....	109
Denver .....	110
Expansion and Intensification of Mountain Mining Settlement.....	111
Coal Mining Settlement.....	112
Agricultural Settlement .....	112
Ranching Settlements .....	113
Communitarian/Utopian Farming Settlement .....	114
Irrigated Farming Settlement.....	114
Dryland Farming Settlement .....	115
Recreation and Tourism Settlement .....	116
MANIFESTATION OF SETTLEMENTS IN COLORADO’S ARCHAEOLOGICAL RECORD.....	116
Archaeological Characteristics That Make Sites in the Theme Identifiable .....	118
Habitation .....	118
Commercial and Institutional Sites .....	119
Settlements .....	120
The City and Region.....	123
Representation of Site Types in the Database .....	123
Sites within the Theme Recorded in the State.....	123
Adequacy of Recordation and Evaluations .....	142
Potential for Sites within the Theme to Exist and Be Recognizable.....	143
Interrelatedness of Theme with Other Topics or Themes .....	143
Contact.....	143
Rural Agriculture.....	144
Victorianism .....	144
Industry.....	144
Linear.....	144
Recreation.....	144
Ethnicity .....	145
Federal Government .....	145
EVALUATIONS OF SIGNIFICANCE.....	145
Relationship to the National Register of Historic Places Criteria .....	145
Areas of Significance .....	145
Periods of Significance.....	146
Integrity .....	147
RESEARCH NEEDS .....	149
Quality of Recovered Archaeological Data Relevant to the Theme in Colorado.....	149
Potential for Good Quality Archaeological Data to Exist for the Theme at Sites in Colorado.....	149
Institutional Sites .....	149
Commercial Sites .....	149
Urban Archaeology .....	150
Known or Potential Sites within the Theme in Colorado That Should Be Sought, Reexamined, or Reevaluated.....	150
SUMMARY .....	151
<b>CHAPTER 4. VICTORIAN MINING SETTLEMENTS .....</b>	<b>153</b>
<b>INTRODUCTION TO THE THEMATIC CONTEXT AND RESOURCE BASE.....</b>	<b>153</b>
<b>CHAPTER GOALS .....</b>	<b>154</b>
<b>DEFINITION OF AMERICAN VICTORIAN CULTURE AND OTHER KEY CONCEPTS .....</b>	<b>154</b>
<b>AN ARCHAEOLOGICAL MODEL OF COLORADO’S VICTORIAN MINING     SETTLEMENTS.....</b>	<b>160</b>
Introduction .....	160
The Archaeological Model.....	160

IDENTIFYING AND EVALUATING THE ARCHAEOLOGICAL SIGNIFICANCE OF VICTORIAN MINING SETTLEMENTS .....	164
IDENTIFYING VICTORIAN MINING SETTLEMENTS IN THE ARCHAEOLOGICAL RECORD .....	165
EVALUATING THE ARCHAEOLOGICAL SIGNIFICANCE OF VICTORIAN MINING SETTLEMENTS .....	167
BUILDING A HISTORICAL ARCHAEOLOGY DATABASE FOR COLORADO.....	168

<b>CHAPTER 5. ETHNICITY .....</b>	<b>177</b>
INTRODUCTION .....	177
Theoretical Framework.....	178
THE CONCEPT OF ETHNICITY .....	180
ETHNICITY! VARIOUS DISTINCTIONS .....	180
ETHNICITY IN ARCHAEOLOGY – RECENT PERSPECTIVES.....	182
Culture Contact and Ethnogenesis .....	184
Acculturation and Creolization.....	185
A Synopsis of the Concept of Ethnicity.....	186
ETHNICITY AND MATERIAL CULTURE .....	186
Ethnicity in Historical Archaeology –The First Attempts .....	187
Discussion.....	188
ETHNICITY IN THE HISTORICAL ARCHAEOLOGY OF COLORADO.....	189
Sites in Colorado with Ethnic Associations.....	189
African-American Ethnicity .....	190
African-Americans in Colorado.....	190
The Historical Archaeology of African-Americans in Colorado.....	191
Dearfield .....	192
5GA1168.....	193
Five Points .....	193
Goss-Grove Neighborhood .....	194
5OT121 .....	195
The Broadway Viaduct Replacement Project .....	195
Other African-American Cultural Resources.....	197
Asian-Americans in Colorado .....	197
Chinese.....	197
The Chinese Immigration to the United States .....	197
The Historic Chinese Population in Denver.....	198
Purported Chinese Sites .....	199
Japanese and Japanese-Americans.....	200
Japanese and Japanese-Americans in Colorado.....	201
Italians and Italian-Americans.....	204
Italians and Italian-Americans in Colorado .....	204
Ovens and Coins: Ethnicity in Features and Artifacts .....	205
Italian and Italian-American Sites.....	205
Other Ovens—Other Ethnicities? .....	207
5GF1562: Carbonera.....	207
Germans and German-American Immigrants in the U.S.....	208
Germans and German-Americans in Colorado.....	208
5ME6826: The Stitz Place .....	209
Historic Ethnic Groups Having No Archaeological Contexts .....	210
The Irish .....	211
The English .....	211
The Swedish.....	211
The Scots.....	212
Summary .....	212

New Mexican Hispanic Sites: The Archaeological Manifestations .....	212
The Hispanic Impact in Las Provincias Internas .....	212
The Historical Context .....	213
Ethnicity on the Historic Sites from Southeastern Colorado.....	217
The Historical Archaeology Model .....	217
The Historical Archaeology of the Hispanic Cultural Landscape .....	218
Introduction .....	218
Subperiod I, 1848-1859 .....	220
Subperiod II, 1860-1890.....	220
Subperiod III, 1891-1915 .....	220
Subperiod IV, 1916-1930 .....	220
Ethnicity on the Historic Sites from Southeastern Colorado: An Example from the PCMS .....	221
Introduction .....	221
Past Research in Southeastern Colorado .....	221
Culture Change and Transition in New Mexico.....	224
New Mexican Material Culture, Circa 1820-1880 .....	226
New Mexican Material Culture in the Purgatoire Valley.....	230
Discussion of the Research Domains and Research Questions .....	233
Conclusion.....	250
SUMMARY: IMPLICATIONS FOR ETHNICITY ON HISTORIC SITES .....	250
An Analytical Framework.....	251
The Functional Structure of the Artifact Analysis .....	252
SUMMARY .....	254
<b>CHAPTER 6. RURAL AGRICULTURE.....</b>	<b>257</b>
INTRODUCTION .....	257
ARCHAEOLOGY OF RURAL AGRARIAN SITES IN COLORADO: MANIFESTATION IN THE ARCHAEOLOGICAL RECORD.....	261
Settlement under Spain and Mexico.....	261
Settlement under U.S. Law .....	264
Examples of Regional Settlement Studies in Colorado.....	267
High Altitude.....	267
Southern Colorado Plains .....	268
Central Colorado Plains.....	270
Southwest .....	271
Examples of Excavated Rural Agricultural Sites in Colorado .....	272
Southern Colorado Plains .....	272
Western Slope.....	276
High Altitude.....	278
Summary of Colorado Research Presented Here .....	278
RESEARCH GAPS AND OVERLAP WITH OTHER THEMES .....	279
REGIONAL AND TEMPORAL GAPS .....	280
Temporal Gaps .....	280
Regional Gaps .....	283
SITE SIGNIFICANCE.....	286
Site Recording Prior to Assessment .....	286
General Points to Consider for Site Evaluation.....	288
Site Attributes to Consider for Evaluation .....	289
SUMMARY .....	290
<b>CHAPTER 7. INDUSTRY .....</b>	<b>291</b>
INTRODUCTION .....	291
EXTRACTIVE INDUSTRIES .....	292
Fur and Hide Trade .....	293

Description and Background.....	293
Manifestation of the Theme in Colorado’s Archaeological Record .....	294
Evaluations of Significance .....	299
Research Needs.....	300
Mining and Mineral Processing.....	301
Description and Background.....	301
Manifestation of the Theme in Colorado’s Archaeological Record .....	302
Evaluations of Significance .....	322
Research Needs.....	327
Timber Industry .....	330
Description and Background.....	330
Manifestation of the Theme in Colorado’s Archaeological Record .....	336
Evaluations of Significance .....	342
Research Needs.....	344
Food Processing.....	346
Description and Background.....	346
Manifestation of the Theme in Colorado’s Archaeological Record .....	348
Evaluations of Significance .....	357
Research Needs.....	359
Oil, Gas, and Oil Shale .....	361
Description and Background.....	361
Manifestation of the Theme in Colorado’s Archaeological Record .....	362
Evaluations of Significance .....	367
Research Needs.....	369
<b>PRODUCTIVE INDUSTRIES.....</b>	<b>369</b>
Description and Background .....	369
Manifestation of the Theme in Colorado’s Archaeological Record .....	372
Archaeological Characteristics That Make Sites in the Theme Identifiable.....	373
Representation of Site Types in State Database.....	382
Evaluations of Significance .....	383
Relationship to the National Register of Historic Places Criteria.....	383
Research Needs.....	385
Quality of Recovered Archaeological Data Relevant to the Theme in Colorado .....	385
Potential for Good Quality Archaeological Data to Exist for the Theme at Sites in Colorado.....	385
Known or Potential Sites within the Theme in Colorado That Should Be Sought, Reexamined, or Reevaluated.....	386
<b>CHAPTER 8. LINEAR RESOURCES.....</b>	<b>387</b>
<b>INTRODUCTION.....</b>	<b>387</b>
<b>TRAILS .....</b>	<b>391</b>
Description of Theme .....	391
Archaeological Manifestations .....	394
Site Significance .....	396
Research Issues.....	398
<b>ROADS.....</b>	<b>399</b>
Description of Theme .....	399
Archaeological Manifestations .....	401
Site Significance .....	403
Research Issues.....	404
<b>RAILROADS .....</b>	<b>406</b>
Description of Theme .....	406
Archaeological Manifestations .....	409
Site Significance .....	411



Research Issues .....	412
WATER CANALS AND PIPELINES .....	414
Description of Theme .....	414
Archaeological Manifestations .....	415
Site Significance .....	416
Research Issues .....	418
OIL AND GAS PIPELINES .....	419
Description of Theme .....	419
Archaeological Manifestations .....	420
Site Significance .....	421
Research Issues .....	421
UTILITY LINES .....	421
Description of Theme .....	421
Telegraph .....	422
Telephone .....	422
Power Transmission Lines .....	422
Archaeological Manifestations .....	423
Site Significance .....	423
Research Issues .....	424
CHAPTER SUMMARY .....	424
<b>CHAPTER 9. RECREATION .....</b>	<b>427</b>
DESCRIPTION AND BACKGROUND .....	427
MANIFESTATION OF THE THEME IN COLORADO'S ARCHAEOLOGICAL RECORD .....	428
Archaeological Characteristics That Make Sites in the Theme Identifiable .....	428
Outdoor Recreation .....	430
Government-Managed Recreational Facilities .....	434
Health Resorts .....	435
Entertainment: Civic and Seedy .....	436
Organizational: Social and Industrial Recreation .....	436
Developed Sport .....	437
Auto and Railroad Tourism .....	438
Representation of Site Types in State Database .....	440
Sites within the Theme Recorded in the State .....	440
Adequacy of Recordation and Evaluation .....	440
Potential for Sites within the Theme to Exist and Be Recognizable .....	441
Interrelatedness of Theme with Other Topics or Themes .....	441
EVALUATIONS OF SIGNIFICANCE .....	443
Relationship to the National Register of Historic Places Criteria .....	443
Areas of Significance .....	443
Periods of Significance .....	445
Integrity .....	445
RESEARCH NEEDS .....	445
Quality of Recovered Archaeological Data Relevant to the Theme in Colorado .....	445
Potential for Good Quality Archaeological Data to Exist for the Theme at Sites in Colorado .....	446
Known or Potential Sites within the Theme in Colorado That Should Be Sought, Reexamined, or Reevaluated .....	446
<b>CHAPTER 10. GOVERNMENT .....</b>	<b>447</b>
DESCRIPTION AND BACKGROUND .....	447
Exploration .....	447
Land Survey and Distribution .....	448
Indian Agencies .....	448
U.S. and State Military .....	449

Land Management .....	451
Public Works and Public Service.....	453
Transportation.....	455
<b>MANIFESTATION OF THE THEME IN COLORADO’S ARCHAEOLOGICAL RECORD .....</b>	<b>455</b>
Archaeological Characteristics That Make Sites in the Theme Identifiable.....	455
Exploration.....	456
Land Survey and Distribution.....	456
Indian Agencies .....	456
U.S. and State Military.....	456
Land Management .....	459
Public Works Construction and Public Service .....	461
Transportation.....	462
Representation of Site Types in State Database .....	463
Sites within the Theme Recorded in the State .....	463
Adequacy of Recordation and Evaluation.....	463
Potential for Sites within the Theme to Exist and be Recognizable .....	463
Interrelatedness of Theme with other Topics or Themes.....	464
<b>EVALUATIONS OF SIGNIFICANCE .....</b>	<b>465</b>
Relationship to the National Register of Historic Places Criteria.....	465
Areas of Significance .....	465
Periods of Significance .....	468
Integrity.....	468
<b>RESEARCH NEEDS .....</b>	<b>468</b>
Quality of Recovered Archaeological Data Relevant to the Theme in Colorado .....	468
Potential for Good Quality Archaeological Data to Exist for the Theme at Sites in Colorado .....	469
Known or Potential Sites within the Theme in Colorado That Should Be Sought, Reexamined, or Reevaluated .....	470
<b>CHAPTER 11. SUMMARY .....</b>	<b>481</b>
<b>INTRODUCTION.....</b>	<b>481</b>
The Big Questions .....	481
This Final Chapter.....	482
<b>SUMMARY CHAPTER 2: COLORADO’S PROTOHISTORIC AND HISTORIC NATIVE     AMERICANS.....</b>	<b>482</b>
Important Protohistoric and Historic Native American Research Avenues.....	483
<b>SUMMARY CHAPTER 3: SETTLEMENTS .....</b>	<b>484</b>
Important Settlements Research Avenues.....	484
<b>SUMMARY CHAPTER 4: VICTORIAN MINING SETTLEMENTS.....</b>	<b>485</b>
Important Victorian Mining Settlements Research Avenues.....	486
<b>SUMMARY CHAPTER 5: ETHNICITY .....</b>	<b>486</b>
Important Ethnicity Research Avenues.....	487
<b>SUMMARY CHAPTER 6: RURAL AGRICULTURE.....</b>	<b>487</b>
Important Agriculture Research Avenues.....	488
<b>SUMMARY CHAPTER 7: INDUSTRY .....</b>	<b>488</b>
Fur and Hide Trade .....	488
Important Fur Trade Research Avenues .....	489
Mining and Ore Processing.....	489
Important Mining Research Avenues .....	490
Timbering .....	490
Important Timbering Research Avenues .....	490
Food Processing.....	491
Important Food Processing Research Avenues.....	491
Oil, Gas, and Oil Shale .....	492
Important Oil and Gas Research Avenues .....	492

SUMMARY CHAPTER 8: LINEAR RESOURCES .....	492
Trails and Roads.....	493
Important Trails and Roads Research Avenues.....	493
Railroads .....	494
Important Railroad Research Avenues .....	494
Water Canals and Pipelines.....	495
Important Water Canal and Pipeline Research Avenues.....	495
Oil and Gas Pipelines .....	495
Important Oil and Gas Pipeline Research Avenues.....	495
Utility Lines.....	496
Important Utility Line Research Avenues .....	496
SUMMARY CHAPTER 9: RECREATION.....	496
Government-Managed Recreational Facilities .....	497
Health Resorts .....	497
Entertainment .....	497
Organizational Recreation: Social and Industrial.....	497
Developed Sport.....	497
Auto and Railroad Tourism.....	498
Important Recreation Research Avenues .....	498
SUMMARY CHAPTER 10: GOVERNMENT.....	498
Exploration.....	499
Important Exploration Research Avenues.....	499
Land Survey and Distribution .....	499
Indian Agencies.....	499
Important Indian Agency Research Avenues .....	499
U.S. and State Military .....	499
Important Military Research Avenues.....	500
Land Management.....	500
Public Works and Public Service .....	500
Important Public Works Research Avenues .....	501
Transportation .....	501
TYING IT ALL UP.....	501
REFERENCES CITED.....	503
ANNOTATED BIBLIOGRAPHY .....	577

## LIST OF FIGURES

<b>Figure 1.</b> Site form entries under <i>culture</i> .....	23
<b>Figure 2.</b> The general cultural landscape ca. A.D. 1540-1600. ....	35
<b>Figure 3.</b> The Baker model of Ute culture history for the Eastern Ute bands of western Colorado.....	41
<b>Figure 4.</b> The general disposition of Native American peoples in the late eighteenth century and end of regional protohistory.....	47
<b>Figure 5.</b> Currently known wickiup architecture on the Western Slope of Colorado.....	63
<b>Figure 6.</b> A taxonomic model for the archaeological study of the American Victorian cultural tradition ....	156
<b>Figure 7.</b> The incipient mining camp of La Plata City, La Plata County, Colorado, in about the 1880s. ....	162
<b>Figure 8.</b> Main Street of Gunnison, Colorado, ca. 1884.....	163
<b>Figure 9.</b> Quantitative signatures of the portable material culture at the Vanoli site and the 2 <sup>nd</sup> Los Pinos Indian Agency.....	172
<b>Figure 10.</b> Oriental ceramics recovered from Camp Amache (photo from Carrillo, Killam et al. 2004).....	203
<b>Figure 11.</b> Feature 3 at the Cherry Creek Construction Camp (5LP1915) (photo from Horn, Pfertsh et al. 2003).....	206
<b>Figure 12.</b> Feature 5 at Carbonera (5GF1562) (photo from Pfertsh 2003d).....	208
<b>Figure 13.</b> Structure 1 at the Stitz Place (5ME6826) (photo from Horn 2001d). ....	210
<b>Figure 14.</b> Hispanic site distributions in Colorado counties.....	214
<b>Figure 15.</b> "Boggs Ranche" in 1867 on the Purgatoire River.....	215
<b>Figure 16.</b> San Patricio Ranch (Boggsville) in 1888. ....	216
<b>Figure 17.</b> Southern Colorado historical chronology – American Period. ....	219
<b>Figure 18.</b> Colorado agricultural archaeological sites by county. ....	281
<b>Figure 19.</b> Officially eligible agricultural sites by county.....	282
<b>Figure 20.</b> Tested or excavated agricultural sites from OAHF site files database.....	285
<b>Figure 21.</b> Production of gold, silver, copper, lead, and zinc in Colorado, 1868-1923, by years, in terms of recovered metals .....	311
<b>Figure 22.</b> Gold production in select counties of Colorado for every fifth year from 1890 to 1910.....	313
<b>Figure 23.</b> Silver production in select counties of Colorado for every fifth year from 1890 to 1910. ....	314
<b>Figure 24.</b> Oil and gas wells in Colorado. ....	367
<b>Figure 25.</b> Map showing major manufacturers in Colorado.....	371

## LIST OF TABLES

<b>Table 1.</b> Documents available for exploring post-contact archaeological sites in Colorado (not an exhaustive list).....	13
<b>Table 2.</b> Historic artifacts in 15 Ute components that can provide either <i>terminus post quem</i> or approximate dates for the occupations (compiled from Reed and Gebauer [2004:95-100] and Table 4, page 68). ....	42
<b>Table 3.</b> Temporal ordering of Ute components listed by Reed and Gebauer (2004) correlated to evidence of wickiups. ....	43
<b>Table 4.</b> A preliminary listing of some common closely datable historic artifacts (Baker 2003a). ....	44
<b>Table 5.</b> Settlements site matrix. ....	117
<b>Table 6.</b> Colorado settlements classified as "Cities" (pop. 2,500+) in the 1900 U.S. census.....	122
<b>Table 7.</b> Colorado settlements classified as "Cities" (pop. 5,000+) in the 1950 U.S. census.....	122
<b>Table 8.</b> Settlements classified as urbanized areas (over 50,000) in 2000 census. ....	122
<b>Table 9.</b> Significance themes for settlement site types.....	147
<b>Table 10.</b> Comparison of South's (1977b) colonial frontier and kitchen artifact patterns and comparable data from the Victorian 2 <sup>nd</sup> Los Pinos Agency (5OR139). ....	171
<b>Table 11.</b> African-American sites in Colorado by county.....	191
<b>Table 12.</b> Hispanic sites in Colorado counties. ....	213
<b>Table 13.</b> Archaeological signatures of Hispanic subsistence (1860-1890).....	240
<b>Table 14.</b> Archaeological signatures of Hispanic subsistence (1891-1915).....	241
<b>Table 15.</b> Archaeological signatures of Hispanic subsistence (1916-1930).....	242
<b>Table 16.</b> Archaeological signatures of Anglo-American subsistence (1860-1890).....	243
<b>Table 17.</b> Archaeological signatures of Anglo-American subsistence (1891-1915).....	244
<b>Table 18.</b> Archaeological signatures of Anglo-American subsistence (1916-1930).....	245
<b>Table 19:</b> Chronology of Mexican public land legislation applying to roughly the southern one-third of Colorado (Briggs and Ness 1987). ....	262
<b>Table 20.</b> Chronology of U.S. public land legislation.....	265
<b>Table 21:</b> Number of officially eligible archaeological agricultural sites by county and "early date" by decade.....	283
<b>Table 22.</b> List of search terms included and excluded in attempt at comprehensive search of agrarian sites. ....	286
<b>Table 23.</b> Archaeological matrix of mining and mineral processing site types, associated features, and socioeconomic interpretation. ....	305
<b>Table 24.</b> Potential mining technologies expected at various mining-related archaeological sites.....	306
<b>Table 25.</b> Frequency of recorded mining archaeological sites by Colorado county. ....	320
<b>Table 26.</b> Frequency of various mining site archaeological features. ....	321
<b>Table 27.</b> Range of mining and mineral processing property types (Hardesty and Little 2000:24).....	322
<b>Table 28.</b> Frequency of major mining-site feature categories recorded in Colorado. ....	322
<b>Table 29.</b> National Register eligibility recommendations for recorded historical archaeological mining sites by county from Compass Database 2004 (row percentages in parentheses).....	323
<b>Table 30.</b> NRHP eligibility recommendations for sites recorded by the Colorado Division of Minerals and Geology prior to 2004 (row percentages in parentheses).....	324
<b>Table 31.</b> Evaluation matrix for mining and mineral processing historic properties (Hardesty 1990:48). ....	326
<b>Table 32.</b> Archaeological matrix for logging and sawmilling sites.....	331
<b>Table 33.</b> Typology of logging remains (Brown and Elling 1981). ....	337
<b>Table 34.</b> Major food-processing facilities, structures, and materials.....	348
<b>Table 35.</b> Sites, structures, and materials associated with oil, gas, and oil shale sites. ....	362
<b>Table 36.</b> Generalized archaeological matrix for productive industries.....	372
<b>Table 37.</b> Structures, equipment, and materials typical of the steel and iron industry.....	373
<b>Table 38.</b> Chronological list of railroads that played a key local or statewide role in Colorado history. ....	408
<b>Table 39.</b> Gross National Product (GNP) and Personal Consumption Expenditures (PCE) in billions of dollars (Brockman and Merriman 1979:9).....	429

<b>Table 40.</b> Recreation categories, characteristics, and associated sites, features, and artifacts.....	431
<b>Table 41.</b> Outdoor recreational land classes and associated characteristics (Brockman and Merriman 1979:126).....	432
<b>Table 42.</b> Major categories of government-managed recreational sites and associated features.....	435
<b>Table 43.</b> Types of sites, structures, and materials associated with military installations.....	459
<b>Table 44.</b> Major types of government land management site types and associated features (McClelland 1998).....	460
<b>Table 45.</b> Sites, structures, and landscapes associated with land management facilities (McClelland 1998; Wyckoff 1999).....	461
<b>Table 46.</b> Types of sites, structures, and features associated with federal public works.....	462
<b>Table 47.</b> U.S. army posts, camps, and forts in Colorado before World War I (Scott 1999). ....	474
<b>Table 48.</b> Colorado cavalry and volunteers posts, stations, camps, and forts (Scott 1999).....	475
<b>Table 49.</b> National Guard camps and facilities in Colorado (Scott 1999). ....	477
<b>Table 50.</b> National Guard armories recorded in Colorado.....	478
<b>Table 51.</b> Military installations in Colorado active during World War I or later. ....	479
<b>Table 52.</b> Prisoner of war and Japanese-American internment camps in Colorado. ....	480

## ACKNOWLEDGMENTS

Following the success of the Colorado Prehistoric Contexts published in 1999, the Colorado Council of Professional Archaeologists (CCPA) decided to tackle a new Historic Archaeology Context. The 1984 Historic Archaeology Context, authored by Bill and Nancy Buckles, had set a good foundation for historic archaeological research, but the tremendous growth of cultural resource management and academic research provided both a need for an updated context and the information to build an updated context. The process leading to the publication of this document has been long, but the result is a lasting contribution to historic preservation in Colorado that the reader will find very useful and insightful. Many people assisted in the effort to pull this context together and their efforts are deeply appreciated.

The CCPA convened the Historic Archaeological Context (HAC) Working Group. This group was responsible for designing the basic format of the context and writing a State Historical Fund (SHF) grant to finance the project. The group met every three to six weeks in Salida from 1999 through 2001. The group painstakingly put together a grant application. Unfortunately, the first grant was not approved, but perseverance resulted in a grant being awarded in 2001. The core HAC group was composed of Adrienne Anderson, Jon Horn, Steve Baker, and Richard Carrillo. Others who worked or advised on the HAC outside the core group included Minette Church, Susan Chandler, Carl Späth, and Carl Barna. Adrienne Anderson authored the grants and was a driving force in securing project funding. Anne McKibbin drafted budgets, compiled the document, and helped with various publication and graphics issues. Without the dedicated work of this group and individuals, the Historic Archaeological Context would not be a reality.

Once the grant was funded, a Grant Advisory Board (GAB) was established and authors were assigned to the different sections of the context. The GAB had the responsibility of helping the Project Administrator oversee the grant, providing guidance and direction to the authors, obtaining reviewers for the draft, and moving the finished draft toward publication. The GAB was composed of Gordon C. Tucker Jr., chair; Steve Lekson; Diane Rhodes; and Bill Killam. Susan Chandler was chosen as Project Administrator. This group had the unenviable task of making sure the authors stayed on track, settling disputes when they arose, and all the many tasks required to move the work toward publication. As with the HAC working group, this publication would not have come about without the dedicated work of the GAB and Project Administrator.

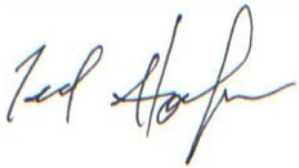
CCPA decided to list senior authors in order of appearance in this multi-author volume and list junior authors as contributors, also in order of appearance. CCPA appreciates the substantial contributions of all authors to this volume and to historical archaeology in Colorado. The authors are Minette Church, Steve Baker, Bonnie Clark, Jon Horn, Carl Späth, David R. Guilfoyle, and Richard Carrillo. These authors brought a range of expertise to the effort. All have worked on historic archaeological investigations throughout their careers. The authors also brought insights from academic and cultural resource management perspectives. The HAC working group, after much discussion, had settled on the concept of presenting the information by subject matter such as mining, settlement, ethnicity, industry, etc., rather than from a temporal, geographic, or other perspective. These authors faced the difficult challenge of presenting a broad and varied subject in a manner that provided consistency between chapters, yet brought out the key information, concepts, methods, and perspectives from each individual subject. The authors also faced the difficulty of synthesizing the sheer amount of information gathered in recent years and presenting this information in a meaningful format. As the readers will discover, the authors did a wonderful job. Several of the chapters had junior authors. Thank you Duane A. Smith, Martha Sullenberger-Fry, Kathleen Corbett, and Burr Neely for assisting with this important document.

The issue of consistency between chapters was not only problematic for the authors, but for some reviewers as well. To help bring the document all together, E. Steve Cassells reviewed the chapters for consistency and wrote the concluding chapter. His insights provide a perspective that will help all understand and use the context.

The draft context was submitted for peer review. Peer review provided that critical check that helped the authors refine their writing, correct inconsistencies, and focus on what is important in a document of this type. External peer review was conducted by Steve Mehls, Western Cultural Resource Management; David M. Brugge, National Park Service, retired; and Donald L. Hardesty, University of Nevada, Reno. Internal review by CCPA members was conducted by Ted Hofer, Mike Metcalf, Mark Mitchell, and Meg Van Ness.

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A handwritten signature in blue ink that reads "Ted Hofer". The signature is written in a cursive style with a large, looped "H" and a long, sweeping tail.

Ted Hofer  
Past President  
Colorado Council of Professional Archaeologists



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# CHAPTER 1. HISTORICAL ARCHAEOLOGY

**Minette C. Church**

Historical Archaeology is the study of the material remains of past societies that also left behind historical documentary evidence. This subfield of archaeology studies the emergence, transformation, and nature of the Modern World (Society for Historical Archaeology 2006).

## INTRODUCTION

Since 1984, archaeologists in Colorado have had access to the excellent *Colorado Historical Archaeology* context by the late William and Nancy Buckles (Buckles and Buckles 1984). For more than 20 years this work has been invaluable to archaeologists working in the state. However, as was the case for the prehistoric contexts written at around the same time, 20-plus years of fieldwork has created a need for an updated historical archaeology context document. With that goal in mind, and with generous help from the State Historical Fund and the Colorado Council of Professional Archaeologists, several interested parties gathered a few years back to make this new work a reality. The hope is that this document will give general archaeological practitioners an idea of the many and fundamental changes that have occurred in the field of historical archaeology since the early 1980s and suggest broader and more diverse research questions, new methodologies, and meaningful, practical guidelines for exploring and protecting Colorado's historical resources, both above and below ground.

As is the case when any five or more archaeologists gather in a room to talk about their practice, this group, known as the Historical Archaeology Context (HAC) Working Group, generated a lot of animated discussion about paradigms, theories in practice, and the nuts and bolts of the job. A mix on the committee of academics and government and private sector cultural resource management professionals made for diverse perspectives but also, it is hoped, guaranteed a broadly useful document. Much of the talk in early meetings revolved around how to organize this volume, the two main options being regionally, to match the prehistoric contexts, or thematically, following more in the Buckleses' able footsteps. The Working Group ultimately agreed on the thematic organization that follows for several reasons: the small number of potential authors did not represent all regions of the state, most themes are pertinent all over the state, and the Working Group wanted a moderately sized document without too much redundancy. Of course, themes can and will overlap to some degree, and authors cover such potential overlap in each chapter.

This document is not intended to be a how-to guide to practicing historical archaeology, although it certainly does contain some pointers. It should, however, give interested nonhistorical archaeologists some framework within which to evaluate the work that has been done in Colorado and the work that needs to be done. As the authors herein researched and wrote their chapters about the current status of archaeological practice in the state, they have also made some suggestions to improve the way that historical sites are recorded and evaluated. Changing research questions call for more detailed recording methods. As the Buckles did, the Working Group hopes to point out where research has progressed within the state and where there are research gaps. Beyond that goal, the group wants to give people an idea of how historical archaeology in Colorado fits into archaeology and anthropology in general, where historical archaeological research in the state might be headed, and where its best potentials lie.

This introduction has three goals: first, to provide an overview of the place of historical archaeology within anthropological and archaeological history and related debates as a whole; second, to describe some general methodology and theory within the subdiscipline; and finally, to introduce some general themes and questions particular to Colorado research. The third chapter, by Bonnie Clark and Kathy Corbett, is about settlement archaeology in Colorado's well-documented past, and as such it overlaps with virtually every other chapter in the book and serves in part as introduction as well. The settlements chapter will lead the reader further into historical archaeology as it applies to Colorado research in particular, cross-cutting the individual themes in the chapters that follow. However, the authors do focus primarily on settlements, emphasizing the human occupation of place as opposed to sites that emphasize history of technology or tourism. E. Steve Cassells provides nice summaries of all chapters at the end of the volume.

This introduction will be quite different than those written for the recent context documents addressing the pre-contact archaeology of Colorado because the audience for this document is not the same. The authors of those contexts clearly addressed fellow archaeologists who were already familiar with the methods, theories, and jargon of anthropological archaeology in general but were unfamiliar with particular areas of Colorado research. This context document, addressing the more document-rich historical archaeology of Colorado, potentially has a more interdisciplinary audience composed of historians, ethnohistorians, architectural historians, and other historic preservation professionals not specifically trained in archaeology. Even archaeologists not trained in historical archaeological method and theory will be unfamiliar with some of the history and debates particular to the subfield. Therefore, this introduction contains more about the history of debates and discourse within the subfield. Changes and developments in method and theory particular to the subdiscipline have directly affected research questions and judgments about exactly where research gaps in Colorado lie.

## **HISTORICAL ARCHAEOLOGY AND ARCHAEOLOGY IN GENERAL**

All of the background presented here might seem more than is necessary in a document of this type. However, with a background in how schools of thought have changed in archaeology it becomes easier to understand how research questions have changed since the time that William and Nancy Buckles wrote their context for historical archaeology in Colorado. In the early twentieth century, archaeologists were first engaged in building the database for North American archaeology, and they asked questions related to chronology and region, a focus we term *Culture History*. In mid-century, there was a shift in emphasis from describing what changed where to explaining why and how such changes occurred among some peoples in some places and not others. This emphasis is termed *culture process* or *processualism*, the term used in this document. This school is also sometimes referred to as *New Archaeology*, but since it is now pushing 50 years old, that phrase is falling out of favor. Anthropological archaeology is a social science, bridging the sciences and humanities in some respects. However, in the 1960s there was an increased emphasis on explicit, scientific methodology so that other archaeologists might critically analyze the logic of one's conclusions. Processualists give emphasis to evolutionary, materialist, and functionalist theories, which emphasize broad cross-cultural comparisons. They focus on more clearly measurable and archaeologically visible aspects of culture, such as climate, subsistence, or technology, as causes of culture change. They tend to consider higher order changes in social organization and cosmology or ideology as side effects of more fundamental material changes.

It was also about this time that historical archaeologists began to band together as a subdiscipline. The processual school is well represented in historical archaeology by scholars ranging from Lewis Binford (1961; 1978[1972]) to the seminal and continuing contributions of Stanley South (1977a; 1978[1971]). Many methodological moves toward more systematic data collection and analysis came out of this approach, ranging from new means of dating historic period sites using pipe stems and mean ceramic dating to economic scaling using ceramics (Binford 1961; Miller 1980, 1991). Historic period data served to test established methods common to prehistory, as in Deetz and Dethlefsen's (1982) work on chronological seriation and historical grave markers in New England. Explicitly scientific interpretations and



methodologies continue to come from the processual approach. For example, many recent neoevolutionary or “selectionist” interpretations, applying Darwinian ideas of natural selection explicitly to human behavior, are allied with processualism (Neiman 1990; Ramenofsky 1998; Ramenofsky and Galloway 1995).

Some historical archaeologists, as well as some prehistorians, felt the new emphasis on science and questions about human adaptive behaviors left out other interesting questions about ideology and meaning. Some questioned processualist claims to scientific objectivity and began looking at how archaeologists’ situations in the present affected the questions they asked of the past. William Lees, in his excellent *Kansas Preservation Plan Section on Historical Archaeology*, divides the work of historical archaeology into several problem domains. The following are abstracted from his work, with some minor additions (Lees 1988):

1. Historical particularism: archaeology for purposes of accurately interpreting historical architecture for tourism or for clarifying specific, single-event, historical issues, such as what happened at the Little Bighorn battle site in Montana (Scott and Fox 1987) or finding the location of the Sand Creek Massacre in Colorado (Scott and Whitacre 2004).
2. Interpretation of past lifeways: the parallel to the culture history approach in archaeology as a whole; for example, Plimoth Plantation and Colonial Williamsburg. This approach has been especially important in documenting peoples underrepresented in the historical record, such as enslaved African Americans, but it is equally useful for examining populations about whom we think we know a lot but actually do not. An example would be the Puritans, about whom much popular perception is based on Victorian period misconceptions and portrayals.
3. Processual studies: studies on acculturation and other cross-culturally important processes and human ecology as well as site formation processes and human behavior, for example, in refuse disposal patterns, recycling of artifacts, and the like.
4. Archaeological science: using historical archaeology to “test propositions used in archaeological analysis and to develop new propositions” (Lees 1988), as in, for example, Deetz and Dethlefsen’s (1982) work on artifact seriation that uses grave markers, described above.
5. Cognitive studies: archaeological approaches to looking at “world view” (Deagan 1996[1982]) or mind-set (Deetz 1996[1977]) and their relationship to patterning in the material world. A good and early example of this work is Deetz’s model of change from a Colonial/Medieval world view to a Georgian/post-Enlightenment world view in English America, resulting in an increased emphasis on symmetry, balance, and order in architecture, furniture, china, and landscape, over older more organic forms. Since then, concepts such as agency and the recursiveness of the human/material environment relationship have come to be important to many researchers. Even as we shape the material world, it shapes us (Church 2002; Leone 1973).
6. Direct historical approach: using archaeology to work from the known (or at least historically documented) past back to the unknown within a particular cultural tradition; for example Kidder’s (1916) work at Pecos, in which he started excavating levels from time periods documented by the Spanish and continued down into lower and older undocumented levels.

Lees (1988:11) goes on to point out that many of these examples illustrate the point that “the presence of overwhelming documentation on a site should not necessarily be used to conclude that it has no archaeological importance”. Historians may well use this documentation alone, but in combination with excavated and other material data, anthropological archaeologists might use it to define wholly new avenues of research. Such research on a well-documented site might shed light on patterns useful for interpreting other, less well-documented components and sites.

Given the richness of the data-sets available to historical archaeologists, it is probably not surprising that despite the organizational birth of the Society for Historical Archaeology (SHA) in the heyday of

scientific processualism, they were some of the early proponents of the diversity of cognitive and neo-Marxist approaches referred to today under the imprecise umbrella-term *post-processual* (often paired with the even more imprecise term, *postmodern*) (Preucel 1991). Mark Leone has explored various critical theory and neo-Marxist approaches to interpreting the past of towns and landscapes from Utah to Maryland (Leone 1973, 1977, 1982; Leone et al. 1987). An “archaeology of resistance” has grown out of research on African-American sites in the South, which, along with Spanish sites in the eastern and western borderlands, have also provided fodder for a look at ethnicity and ethnogenesis as processes of “creolization” (Church 2001; Cusick 1998; Deagan 1983; Deagan and MacMahon 1995; Deetz 1996[1977]; Ferguson 1992, 1996; Fontana 1994). Class, as well as ethnicity and nationality, have been important to looking at labor and resistance and the positing of an “archaeology of capitalism” at sites such as Ludlow, in southern Colorado (McGuire and Walker 1999; McGuire and Reckner 2002, 2003). The Ludlow project is yet another excellent example of how archaeology has much to tell us about a seemingly well-documented event.

Study of gender and sexuality as available through the archaeological record is as popular in historical archaeology as in archaeology as a whole (Clark 1996, 1997a, 2003; Hardesty 1994; E. M. Scott 1994; Seifert 1994; Spencer-Wood 1994). Looking at gender status in the archaeological record is really not much different than looking for age, wealth, or occupational status, which archaeologists have always done. Such studies span processual and post-processual approaches. In some cases, one can strengthen materialist conclusions reached by means of deductive approaches. This can result in the recognition of different gender statuses in past societies in a manner no different than recognizing the existence of different wealth, prestige, or age statuses (Brumfiel 1996, 2003; Hardesty 1994; E. M. Scott 1994; Spector 1993; Spencer-Wood 1994). Some have argued convincingly that ignoring the impact of gender systems on artifact and architectural patterning has weakened some long-standing processual interpretations (Claassen 1991; Clark 1996, 1997a; Watson and Kennedy 1991). For an excellent example of how consideration of past sexuality can help explain physical patterns in archaeological data, see the work of Barbara Voss (2000) in Spanish California.

Finally, broadening research agendas that recognize that women, men, children, and adults, poor and rich, from all ethnic backgrounds were all active in creating the archaeological record has led to the recognition that our interpretations have ramifications affecting descendant communities that must be born in mind. For prehistoric archaeologists, Wilkie notes that “NAGPRA [Native American Graves Protection and Repatriation Act] served as a crash course in community partnering” whereas “people working in historical archaeology had already been grappling with issues of ethics, responsibility and the role of archaeologists in creating narratives that serve nationalistic agendas” (Wilkie 2005: 344). Several archaeologists of both pre- and post-contact sites in the United States have pointed out that archaeology affects descendant populations and current politics regardless of the original intentions of researchers (Agbe-Davies 1999; Franklin 1997a, b; Leone et al. 1987; McGuire 1992; Potter 1992). In historic period archaeological research, the descendant groups are all the more likely to be closely and emotionally tied to the sites anthropologists excavate. The negative ramifications of ignoring such ties are best illustrated by the heated debates surrounding the excavation and interpretation of the African American Burial Ground in New York City in the 1990s, during the course of which one Cultural Resource Management firm was replaced by another because of local community outrage (Blakey 1997; LaRoche and Blakey 1997; Return to the African Burial Ground: An Interview with Physical Anthropologist Michael L. Blakey 2003).

## **HISTORY OF HISTORICAL ARCHAEOLOGY**

Many of the early meetings of the SHA, founded in 1967, involved discussions between historians and anthropologists, American and British, on the most desirable relationship of the new subdiscipline to history and anthropology. The debate was entered even earlier, perhaps most famously by J. C. Harrington in his article for *American Anthropologist* entitled “Archaeology as an Auxiliary Science to American History” (Harrington 1955). A characterization of American historical archaeology as “handmaiden to history” has haunted the field for quite some time after. Founding historians influencing the field, mostly British, included Ivor Noël Hume (1969a), Iain Walker (1967), and Clyde Dollar (1968). American anthropologists, Robert L.

Schuyler, Bernard Fontana, Stanley South, and Lewis Binford, among others, made counter-arguments for an anthropological approach to the well-documented past (Binford 1961, 1978[1972]; Fontana 1965b; Schuyler 1970, 1988; South 1977a, 1978[1971]; Thurman 1998).

In the late 1960s, anthropology departments housed the earliest academic curricula in historical archaeology in the United States. Students were taught by John Cotter at the University of Pennsylvania as early as 1960 and a little later by James Ayres at the University of Arizona; therefore, historical archaeology as anthropology won the day. However, it took a long time to escape the ramifications of early research narrowly focused on debated historical points of fact or a view of archaeologists as mere technicians in the service of historical goals. Such goals are often important and valuable, as in the case of the Custer Battlefield (Fox 1993), where points of historical fact and events were the subject of sometimes heated dispute, as well as of National Park Service (NPS) interpretation. However, these days such goals represent only one type of research agenda among many potential ones. Historians and anthropologists tend to ask different questions about the past; both may have important questions, and rarely are they mutually exclusive.

There were very few archaeological explorations of post-contact sites before the turn of the twentieth century in North America, and the questions addressed were specific ones about architectural layout or famous historical characters. There were seldom broader aims to use archaeology to put these sites or people into broader cultural contexts. For example there was an eighteenth-century search for Champlain's camp on the St. Croix River, the goal of which was to determine the political boundaries between the British and French colonies. Arguably one of the earliest archaeological projects in North America was a mid-nineteenth century excavation of Miles Standish's house in Massachusetts by one of his descendants (Deetz 1977a; Schuyler 1976). More concerted excavation of historical period sites really began with NPS efforts during the Great Depression in the 1930s, and again these efforts usually aimed to locate and outline buildings at sites like Jamestown, not to outline the lifeways of colonial or colonized peoples there.

Research goals during the first half of the twentieth century in U.S. and Canadian work aimed to clarify the footprints of historical architecture at popular tourist destinations such as Williamsburg, Jamestown, Fort Necessity, or Fort Ross (Carson 1994; Farriss 1989; Harrington 1978[1957]). The goal of excavation was to help plan reconstruction of buildings or palisades to visually impress the visiting public. These early projects correlated with what came to be Criteria A, B or C for eligibility for inclusion on the National Register of Historic Places (36 CFR §60.4) ("a. ...associated with events that have made a significant contribution to the broad patterns of our history; b. ...associated with the lives of persons significant in our past; c. ... embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction"). Historical sites were rarely explored under any broader cultural agenda such as criterion d ("have yielded, or may be likely to yield, information important in prehistory or history"), and by mid-century there was some tension between project managers trained in the humanities and anthropologically trained archaeologists. Although obviously the NRHP did not apply in Canada, one particularly egregious case of such conflict occurred there in the 1960s at the Fortress of Louisburg project, where conflicting views of project goals created so much tension that there were three successive archaeological project directors in only five years. This situation culminated in a mass walkout by the third project director and 11 of his archaeological crew in 1966, which inspired some degree of compromise (Schuyler 1976).

We have come a long way, and few recent cases have been so contentious. Project managers trained in architectural history, social history, or archaeology have come to see their work as complementary rather than competitive. However, preservationists in general need to work on conveying this new consensus between humanistic and social scientific goals more broadly to resource managers or agency administrators outside of the allied preservation fields. There are unfortunate cases of sites that have archaeological potential but have been evaluated for significance and National Register eligibility solely on the basis of architectural integrity. It is possible for architectural integrity at a site to be quite poor while archaeological integrity is high and vice versa. Put another way, all architectural sites are also archaeological sites. The reverse is not the case. Multiple types of expertise are necessary to evaluate post-contact sites with standing architecture.

Many archaeologists are no more comfortable judging the integrity of architecture than architectural historians are judging the integrity of archaeological deposits. Sometimes resource managers under budget constraints are loath to hire the breadth of personnel needed for comprehensive site assessment or do not understand the necessity of doing so. In his work in Rocky Mountain National Park, Colorado, Bill Butler notes the following about the history of historic preservation there in the last century or so:

...with few exceptions, most natural parks were run by naturalists, and the few historians employed by the Service didn't have a clue as to what was an archaeological site, or why they should be saved. We also note that neither the naturalists or historians knew (and still do not know or understand) that archaeology is a social *science* [emphasis original], and not a humanity. The distinction is important (2005:1-4).

Communication between preservation specialists has improved immeasurably of late, but this comment demonstrates that historic preservation professionals have to convey the importance of archaeology to upper-level administrators.

We also need to communicate the importance of historical archaeology to the public. Misunderstandings can become even stickier when cultural resource professionals, including archaeologists, deal with some sectors of the public directly. The value of a good archaeological research design is not something most people learned in their history classes, and most never took anthropology or archaeology classes at all. Local "restoration committees" are often our strongest advocates on the local economic level. But sometimes they hold strong preconceived notions of how a historical site should look or how events took place that conflict with the interpretations of the past for which archaeologists actually find hard evidence. This kind of situation can and does lead to conflict. Historical archaeology has the potential to, and often does, challenge deeply entrenched and cherished historical myths (Fox 1993; McGuire and Reckner 2002; Wylie 1993). In such situations, especially when the local committee members are footing the bill for archaeological research, archaeologists of the well-documented past need to engage in sometimes delicate acts of diplomacy without compromising the integrity of their results. It is best if archaeologists convey to local committee members paying for the work the potential of historical archaeology to test historical assumptions in the form of hypotheses as opposed to bolstering such preconceived notions. People might still dislike results, but at least they will not be taken by surprise.

The potential for this kind of conflict is especially strong at places where our national or local mythologies are strongest, such as places where George Washington might have napped or, in Colorado, where Kit Carson might have been one of several site occupants. An example of extremely productive relationship-building between local historical site committees and professionals is Richard Carrillo's work at Boggsville in Colorado. At this site, archaeologists have been able to work with the interested public to broaden research agendas to include anthropological and social historical questions, with enthusiastic support on the parts of all parties concerned (Carrillo 1993; R. F. Carrillo 1997). Archaeological work there has not discounted prior interpretations of the site; rather it has made them more inclusive.

## DEFINITIONS

In a recent overview of the field for the journal *World Archaeology*, Roberta Gilchrist notes that "today, historical archaeology dominates the practice of professional and contract archaeology across the globe, as urban development and historic building conservation yield massive archaeological data sets deriving from recent centuries" (Gilchrist 2005:330). Despite the global activity in the discipline, the history of its development in the United States and abroad varies considerably. In the United States, practitioners are trained in departments of anthropology, which has ensured that historical archaeology here is for the most part anthropological and part of the social sciences. Here, the field is often defined chronologically, as pre- or post-contact between the New and Old worlds. In the United Kingdom and Canada, practitioners are more apt to define archaeology as a methodology (Wilkie 2005). It is often its own department or is sometimes

affiliated with history, generally a humanity (although questions derived from the social sciences are becoming more popular in the United Kingdom and elsewhere (Johnson 1999a).

Historical archaeology as a subdiscipline of anthropological archaeology encompasses many of the same debates about form and practice that concern anthropological archaeologists of all kinds. However, it has also generated some debates all its own. The early literature strongly emphasizes three issues: 1) the most desirable relationships between archaeology and history, 2) the most desirable relationships between post-contact and pre-contact period archaeology, and 3) the implications of working with data of more diverse types than those typically available to archaeologists who focus on precontact period sites. It is true, as Laurie Wilkie notes, that “prehistorians do not work without texts. Ethnographies need to be read as critically as any other text” (Wilkie 2005:346). However, the wealth and content of data available for the post-contact past, including texts, oral narratives, images, architecture, cultural landscapes, and excavated materials, present particular challenges of analysis and synthesis.

As the disciplines of history and anthropology developed in academia in the United States, *prehistory* (the Native American past) was the domain of *natural historians* as defined in the nineteenth century and then anthropologists in the twentieth, while the *historic* (European, African, or Asian-American past) was always the domain of historians. Not only is such a distinction somewhat arbitrary, it has actually impeded both historical and anthropological research on the interaction of Indian and non-Indian people in the hundreds of years since contact (Lightfoot 1995; Trigger 1989; West 1995). This logic is the same as that which places Native American artifacts in museums of “nature and science,” while everyone else’s past is covered in historical museums. Many Native Americans have rejected this kind of division of labor between anthropology and history as inherently racist (Thomas 2000). Many current archaeologists working on the more recent past agree and have rejected it as simply unproductive.

However, a gap remains between popular understandings and usage and more current, holistic approaches to the past. To the person on the street, the term *archaeology* usually means “prehistoric archaeology” (and “Indians”) in the same way that *anthropology* generally is construed as “social-cultural anthropology” (Wilkie 2005:341). Because archaeology gets confounded with prehistory, historical archaeology tends to get confounded with history and thus with a humanistic rather than a social scientific approach.

Most historical archaeologists in the early twentieth century were trained first as anthropologists rather than historians. The current generation of practitioners, trained in the more interdisciplinary graduate programs of the 1970s and 1980s, have spilled some ink over the history versus anthropology debate (Deagan 1988; Deagan and Scardaville 1985; Mrowzowski 1988; Thomas 1989), but they are, in general, untroubled by overlap between the two. Part of this change in attitude results from changes in the discipline of history. A more traditional focus on explaining particular events or famous people (versus cultural trends) has largely given way since the 1960s to *social history*, eliciting inherently more statistical and data-driven questions about everyday folk. This approach is closer to anthropology in terms of both methodology and research goals.

Unfortunately, at the same time historical goals moved closer to anthropological ones, anthropological archaeologists were pushing the historical aspects of their field aside. Doubly unfortunate was the fact that historical archaeology, pulling itself together as a discipline in the late 1960s, was caught between history and anthropology, and an opportunity to bridge the social sciences and humanities was lost for a while. Historical archaeologists held their first meetings of the SHA in 1967, in Dallas, Texas, at the same time that prehistoric archaeologists were explicitly rejecting ties to history in an effort to make their field more “scientific.” Without a doubt, this development improved methodological rigor and thereby strengthened many interpretations, but advocates also implied that approaches emphasizing the scientifically measurable aspects of human behavior in the past were “better” research foci than those emphasizing more humanistic questions similar to those of social historians. This attitude raised hackles in some quarters. Many people who chose to leave prehistoric archaeology and work instead on the archaeology of well-documented periods did so to avoid what they saw as the dehumanizing aspects of the processual approach.

In an amusing parable, archaeologist Laurie Wilkie characterizes historical and prehistoric archaeology as a couple with a troubled relationship, saying that ultimately historical archaeology left prehistoric archaeology to “sort out his subsistence strategies...to struggle with his systems theory and optimal foraging models” (Wilkie 2005:338). Post-contact archaeologists pursued research questions ranging from the effects of emerging global capitalism on a large scale to the forging of local creolized identities on a smaller one, using excavated as well as archival and oral narrative data. Historical archaeologists took the opportunity to “re-excavate the archive from the perspective of materiality” (Wilkie 2005:342) and to “challenge and reassess the apparent familiarity of the recent past” (Gilchrist 2005:331). Although prehistoric archaeologists focused on “humans as components of coherent systems,” historical archaeologists looked at “expressions of difference, particularity, ethnicity, and power” (Wilkie 2005:343).

In defining historical archaeology, the very presence of documents has been enough for some to classify the subfield as distinct from the rest of archaeology, and this definition is gaining ground over more arbitrary ones based on chronology (e.g., post-contact) or topic (e.g., European expansion). This definition does not correlate with any particular time period but could instead include the archaeology of any group for which there are available documentary sources of any kind, including Maya, Aztec or Classical studies (Beaudry 1988a; Little 1992; Sharer and Ashmore 2003). This definition can be somewhat broad and unwieldy. Others have proposed a narrower definition that includes the global past from roughly the 1500s onward, corresponding with the European Age of Exploration (Deagan 1988; Falk 1991; Schuyler 1970). The latter definition has struck some critics as arbitrary and Eurocentric. However, it is so only if you examine the past solely from a western European perspective. The SHA combines these definitions, to a degree, describing historical archaeology on its website as “study of the material remains of past societies that also left behind historical documentary evidence. This subfield of archaeology studies the emergence, transformation, and nature of the Modern World” (Society for Historical Archaeology 2006). Some have used the idea of emerging globalism and the role of emergence of capitalism as the core of the discipline (Falk 1991; Johnson 1991, 1999b; Leone 1995; Leone 1999; Wylie 1999). Some have built on this idea and looked at the past as an arena for studying resistance to repression based on class, gender, race, ethnicity, and nationality (Epperson 1999; McGuire and Walker 1999; McGuire and Reckner 2002, 2003). Others see the potential of historical archaeology to look at human diaspora and “the archaeology of colonized spaces” (Wilkie 2005).

The definition of historical archaeology in contrast to prehistoric archaeology has always been premised at least partially on the availability of a critical mass of documentary evidence, enough to substantially affect archaeological interpretation. Certainly it can be only loosely tied to time periods. In Europe, there is no such distinction; there is industrial archaeology, classical archaeology, early Christian archaeology, and the like, in parallel with historical specializations. In places where the European past is in any way distinct from an indigenous past, as in the United States or Australia, the prehistoric-historical distinction seems initially more intuitive (at least until one acknowledges that Native Americans certainly had dynamic “histories” before contact with Europeans). Even in these cases, there are ambiguous sites that lie temporally on or close to the junctures between precontact and contact periods, variously and inexactly termed “the protohistoric” “contact period archaeology” or “the ethnohistoric period” (Schuyler 1991). Ethnohistory more commonly refers to an anthropological approach to documentation written by outsiders about an indigenous group. Such ambiguity about the “contact period” and associated archaeology has existed since 1965, when Bernard Fontana published an article in *American Antiquity* proposing definitions of *prehistory*, *history*, *protohistoric*, *contact*, *post-contact*, and *nonaboriginal*” (Fontana 1965a). The fact that the authors of the various prehistoric context documents for Colorado cover the protohistoric and that the authors in this volume do so as well indicates that the ambiguous status of these sites has not changed much.

No single, clear temporal or disciplinary boundary exists between historical and prehistoric archaeology. Even in the United States, contact between Native Americans and people from various other continents occurred in indirect and direct forms across many time periods in many areas. It is becoming clearer that such contacts may well have been occurring long before the traditionally recognized “historic period” arrived, usually defined as the time when written documentation first became available for an area. In

part due to the reconceptualization of the nature of contact and colonialism (Lightfoot 1995; Silliman 2005), the entire historical/prehistoric distinction seems to be shifting.

As some archaeologists reconfigure their work as the “archaeology of colonized spaces” (Wilkie 2005:339), Native Americans, Europeans, Africans, and Asians all become more active players in the interpretations of the past. Many Native Americans feel that the terms historical and prehistoric wrongly imply that they were mired in some kind of static past for millennia until contact with Europeans (and Africans and Asians) occurred. This dichotomous approach to the past has denied them a post-contact history beyond overly simplistic “assimilation” or “melting pot” models. For these and other reasons, a few historical archaeologists have embraced the term “historical anthropologist”, which solves several problems. It does not exclude any group, European, African, Asian, or Native American, from their research; it allows a diversity of social scientific or humanistic research questions; and it allows them to embrace all pertinent data, material, narrative, or documentary, in their work without arbitrarily privileging one source of data over another.

## DATA

This trend to be more holistic in data collecting has given rise to debate as researchers have defined archaeological data differently, with some arguing that those who use documentary or oral sources at a higher ratio are slighting the “nuts and bolts” excavated data, or “traditional” historical archaeology (Baker and Horvath 1985). Others argue that historical archaeology should be historical anthropology; it should incorporate critically all the data available from all sources. This debate marks a difference of opinion and practice held by at least two of the authors in this book, but it also reflects a broader current debate within the subdiscipline as whole. Looked at broadly, it is less a polarizing debate than a continuum along which practitioners locate themselves in terms of what constitutes acceptable data or what proportion of the data of historical archaeology they feel must come strictly from excavated contexts. Some think archaeological interpretation should become largely independent of the documentary record through systematic and scientific methodology (South 1977a) while others embrace the written word as simply another source of historic anthropological data.

In both 1999 and 2001, issues of the journal *Historical Archaeology* explored the state of the subdiscipline. The first, in 1999, featured an essay by Donald Hardesty entitled “Historical Archaeology in the Next Millenium: A Forum,” and included respondents from both academic, cultural resource management (CRM), and state museum settings (Gray 1999; Hardesty 1999a, b; Lees 1999; Schuyler 1999). In his essay, Hardesty reinforces several areas traditionally of interest to all anthropological archaeologists, including “environmental change, technological change, ethnogenesis [creation of new ethnic identities in the past], and distinctive patterns of social interaction,” but for historical archaeology, puts all of these themes within the context of the “emergence of the modern world” (Hardesty 1999a:51). To address these issues, he advocates using documentary and oral records along with archaeology, within a holistic and interdisciplinary perspective, by using comparative methodology. In other words, he advocates using all available data, oral, material, and documentary, to address fairly standard, fundamental, materialist research questions.

Charles Cleland, in the 2001 *Historical Archaeology* forum entitled “Historical Archaeology Adrift?” takes a dimmer view of recent developments broadening the database of the subdiscipline. Even while he describes the field’s unique strength as deriving from the “opposition of archival and archaeological data sets in the context of scientific inquiry” (Cleland 2001:1), he observes that

much of what passes for historical archaeology is not archaeology. It seems perfectly acceptable to write or present papers that do not involve excavation or even artifacts. From my perspective, papers that deal with such topics as urban landscapes, trails and highways, the architecture of houses occupied by famous persons, or historical play acting, and like topics where there is no pretext of archaeology should be given at more appropriate conferences and published in more appropriate journals (2001:5).

(Note that this view would eliminate the need for the chapter in this volume on linear features.) He continues, equating using documentary data with doing history: “Certainly historical research is a necessary prerequisite of archaeological research design but it is not an endpoint” (2001:5).

Other forum participants present more inclusive views of what constitutes historical archaeological data, building models and hypotheses that can be examined by using a broad spectrum of data types woven together in a final interpretation (Armstrong 2001; De Cunzo 2001; Greenwood 2001; Hardesty 2001; Waselkov 2001). Hardesty sums up the discussion well:

The degree to which archaeology has to be excavation is debatable. Archaeology today certainly accommodates many approaches to the past that do not necessarily involve excavation, such as ethnoarchaeology, remote sensing, landscape archaeology, and material culture studies (2001:23-24).

Roberta Greenwood of Greenwood and Associates argues that

we do, and should, range ever wider in our application of the literature of sociology, geography, economics and other disciplines. The wealth of applicable data sets and the ability to confirm identifications and dates from sound evidence are among the greatest strengths of historical archaeology (2001:26).

The debate about what proportion of historical archaeology has to do with below-ground artifacts and features versus other data types is particularly important as landscape-scale approaches to interpreting the past are becoming increasingly common and important in both CRM and academic settings, with implications for compliance. In her forum response to Hardesty, Marlesa Gray of Gray and Pape, Inc., a CRM firm, takes a broad view of archaeological data, citing an “Integrated Resource Management Workshop” on “ecosystem management,” held in 1994 in Breckenridge, Colorado (Nickels 1995). She argues for more recognition of the human/environmental interface when addressing ecosystemic questions, concluding that “ecosystem management was a relevant tool for integrating culture studies with a means for managing landscapes beyond the boundaries of public lands” (Gray 1999:60).

The purpose of the workshop was to develop specific ways in which archaeology could be incorporated into management of the landscape, both to protect existing resources and to promote a better understanding of human interaction with the environment. One conclusion of the participants was the need to stress compliance with Section 110 of the NHPA that provides for a broad inventory and assessment of the cultural resource base on all federally-owned lands. While Section 110 is only applicable for public lands, additionally, the National Environmental Protection Act is now being used more as a basis for cultural landscape studies without the limitations of Section 106 of the NHPA (1999:60).

The approach described by the Breckenridge workshop does seem to hold promise for reconciling a cultural landscape-scale approach with federal regulations and CRM work, which has often been spatially constrained to site-specific and “below-ground” archaeological research within areas of impact. As Robert Schuyler notes, “Modern civilization has not negated the influence of environment but merely changed the scale of interaction and contact” (Schuyler 1999).

Most practitioners would agree that the material record, including the excavated material record, is crucial to what historical archaeologists do, even though they use the documentary record as well. Any data type – material, documentary, or oral narrative – contributes to the interpretation in proportion to its informational value as determined in the course of close, critical examination. More often than not, it is the intersection of the material – archival and sometimes oral records – that, in a holistic manner, supports or challenges the final interpretation. These ideas are not new. In his seminal 1977 book, *In Small Things Forgotten*, James Deetz outlined a broad base of material and nonmaterial culture evidence, ranging from excavated remains and architecture to probate inventories and personal letters to banjo musical chording and conventions of personal space. He used all of these as important data sets for his cognitive interpretation of the colonial past in the eastern U.S. In his work at Rocky Mountain National Park, Colorado, Butler notes



that as a result of prior park “cleanup” activities, most historical sites now either lacked integrity or were altogether gone. As a result, in his research design, he notes “many of the survey activities will focus on field documentation with archival research to the extent possible” (Butler 2005:12-382). Of course the razing of architectural features on a site does not necessarily preclude their study as parts of archaeological landscapes. On the Rocky Mountain Arsenal, Bonnie Clark and her colleagues noted irrigation ditches, and rows of trees and irises that marked the locations of houses torn down by the military decades before (Clark et al. 1997). Landscape approaches to archaeological research are not new either. Gordon Willey was a pioneer of such research in archaeology when he did settlement pattern research in Peru (Willey 1953).

Finally, using archival or documentary sources in the course of anthropological archaeology research should not be confused with doing historical research. This is an important point at the heart of much of the preceding discussion. The disciplines overlap, but are distinct. The documents, oral narratives, and material remains are the data; history or anthropology are among several disciplinary approaches available when looking at that data. To paraphrase both Iain Walker and Robert Schuyler, the ability to excavate and record artifacts systematically no more makes one an anthropological archaeologist than the ability to read makes one a historian (Schuyler 1970; Walker 1967). By way of example, Anthony F. C. Wallace, a cultural anthropologist at the University of Pennsylvania, used documents – diaries and letters – from Rockdale, a nineteenth century mining town, to do a historical ethnography (Wallace 1972). He used documentary materials exclusively, but did not use a historical approach. He approached the documents with anthropological questions, not historical ones. On the other hand, it is also entirely possible to do historical research using excavated materials. For example, archaeological work at the Little Bighorn battle site is a valuable study of the characteristics of a specific historical event (Fox 1993). This work clarified historical questions about who fought where and with what result. It did not address anthropological questions about broader patterns of behavior in the contexts of the cultures or lifeways of the combatants. It is important not to confuse the data – material, oral, or archival - with the disciplinary approach – history or anthropology. In the practice of historical archaeology, documents are used to achieve a variety of anthropological, historical, linguistic, or literary disciplinary ends. We have a responsibility to use as many data sources as we can to strengthen our interpretations, taking account of all and privileging none a priori.

## METHODOLOGY

At the methodological level, gathering excavated, oral, and material data for historical archaeological inquiry requires a variety of skills that no single researcher may be able to adequately address; a team of people with complimentary skills may be necessary. Such data can include above-ground as well as excavated material culture, cultural landscapes, photographs, civil and legal records, and personal documents, sometimes written in languages other than English. Although it is important to weave information from all these types of data together seamlessly into the final interpretation, the steps leading to that point may vary for different data sets (Schuyler 1978). In fact, information from various data sources must be cross-checked against each other; where they agree, the interpretation is stronger, and where they disagree, a research question addressing why they disagree is often necessary. The reasons should not be assumed. Until analyzed and evaluated, no one type of evidence should be privileged above another in terms of informational value or reliability.

Failures of integrative methodology or synthetic hypotheses are responsible for many historical archaeological reports that suffer from a disjointed two-part structure, without a third, synthetic section to tie the others together. Often there is a historical overview section that seems entirely divorced from a second, purely descriptive section about excavation and artifacts. Although it is true that different research questions can be most effectively addressed by emphasizing different kinds of data, some researchers have tended to approach documents, and often only secondary documents, as both inherently more reliable than the material record and as a self-sustaining historical narrative. This mishandling of the documentary data leaves them no link between it and the excavated data, so they try to approach the excavated materials as they would those from a nondocumented pre-contact site or use them as purely descriptive and not interpretive information. In

such studies, researchers often organize the “historical background” section around political periods or events rather than local or social history. The problem is that whereas certain dates and events tend to be historically important, these political watersheds are not necessarily visible in the day-to-day local behaviors typically seen through archaeological patterning at the site or local landscape level. Clearly, historical context is necessary, but researchers need to choose carefully which kinds of secondary historical literature are a good fit with the archaeology they are contextualizing. Good examples of integrated anthropological archaeological interpretation and historical context are outlined in various chapters, but for very readable examples, see Bonnie Clark’s CRM report on the Rocky Mountain Arsenal or her dissertation on La Placita in southeastern Colorado (Clark 1997a, 2003).

## Documents

Primary documents, such as census, newspapers, and the like, are the most important ones to consult in conjunction with historical archaeological research. In the absence of those documents, secondary histories written from a social history perspective are better for the purposes of regional overviews than are political ones. Furthermore, an “archival research methods” chapter explaining how researchers found primary documents and how and why they incorporated them into the study is just as much a fundamental requirement for a report in historical archaeology as are chapters on field and lab research methods. In other words, a historic overview chapter should not be part of the report simply because the documentation for it exists. In the twenty-first century we no longer excavate sites as Sir Edmund Hillary climbed Mount Everest or as Howard Carter dug King Tut’s tomb simply because they are there and they look interesting. The same should be true of excavation in the archives. There should be a clear explanation of how and why the documentation included in the report was found and chosen for inclusion and how it relates to the archaeological sites and landscapes discussed therein.

Documents can be approached with many of the same questions that archaeologists ask about artifacts because, of course, they are artifacts. What the document says is only the start of such analysis. One must also look at who wrote it, for what intended audience, at what date and time, and in what social, political, or economic context. As Robert L. Schuyler (1978) has questioned, can we really expect people to systematically tell census-takers about their insane or incarcerated family members simply because these questions are on the census for a given decade? The answer is, certainly not without first asking why the government chose to ask the question in that census and what people’s attitudes were toward such stigma at the time. William Rathje and Cullen Murphy’s work (1992) on modern-day garbage and the documentation of daily habits has shown that even when people believe they are being completely honest about their consumption patterns, the garbage they discard often tells a different story. Therefore, we have to engage in textual analysis, looking at social context to provide motivations for generating documents and for emphasizing some pieces of information over others. Even the words people used to describe things in the past cannot be assumed to mean exactly the same thing today. James Deetz gives examples such as “looking glasses” in the British Colonies referring to what we would call chamber pots, and halls in houses being rooms rather than passageways (1996[1977]). Other scholars have systematically analyzed probate inventories to look at cases in which room layout and function can and cannot be determined from such documents and at what types of things are included and which excluded and why (Beaudry 1988b; Brown 1988).

William Lees lists the kinds of documents that *at minimum* should be addressed in a literature search on rural and urban sites (Lees 1988:94-95). In the absence of such documentary research, no evaluation of significance or insignificance based on NRHP criteria should be accepted. Table 1 is abstracted from Lees’s work, with added sources relevant to other chapter themes. Another excellent and more extensive source that is available entirely online is *Historical Archaeology in Arizona: A Research Guide* (Ayres et al. 2004). The historic contexts and multiple property listings put out by Colorado Office of Archaeology and Historic Preservation (OAHp) are also very useful. A full listing of these can be found on the OAHp website (<http://coloradohistory-oahp.org/publications/pubindex.htm>).

**Table 1.** Documents available for exploring post-contact archaeological sites in Colorado (not an exhaustive list).

<b>General</b>	National Register of Historic Places
	Colorado State Register of Historic Properties
	Office of Archaeology and Historic Preservation historic context documents
	US General Land Office public land plats
	Colorado Historical Society
	Denver Public Library, Western History and Genealogy Collections and photographic archives (online <a href="http://photoswest.org">http://photoswest.org</a> )
	Local museums with archival and photographic collections and artifacts
	General Land Office online Historical Index of patented land claims <a href="http://www.glorerecords.blm.gov">http://www.glorerecords.blm.gov</a> (Note: the information at local and state offices is more complete than what has been offered online, including relinquished and cancelled claims, leases, rights-of-way, and federal withdrawals)
	General Land Office/Bureau of Land Management plat maps at the Federal Archives in Denver (note that the “dirty plats” – those with notations from surveyors – are especially useful)
	County atlases with plats of townships (generally produced between 1880 and 1920)
	United States Geological Survey Maps
	Federal and state census data
	County courthouse records: tax records; deeds or title abstracts
	Genealogies online: one can “Google” people by name; Mormon Church’s genealogical database ( <a href="http://familysearch.org">http://familysearch.org</a> ); the Colorado Society of Hispanic Genealogy ( <a href="http://www.hispanicgen.org">http://www.hispanicgen.org</a> ). Check alternative name spellings.
	Vital records: birth and death certificates, baptismal records, marriage records. Check alternative name spellings.
	Court records: litigation and transcripts. Again, check alternative name spellings.
Colorado State University’s webpage on agriculture, which also includes information on irrigation, mining, tourism and recreation, and more, often with historic photos. <a href="http://lib.colostate.edu/research/agbib/waterrt.html">http://lib.colostate.edu/research/agbib/waterrt.html</a>	
Colorado newspapers online: <a href="http://coloradohistoricnewspapers.org">http://coloradohistoricnewspapers.org</a>	
<b>Rural Sites</b>	Soil Conservation Service aerial photography and maps
	Farm Securities Administration (FSA) photographs from the New Deal
	Works Progress Administration (WPA) sponsored interviews: organized by county, from the New Deal era
	Agricultural census data: <a href="http://www.nass.usda.gov/">http://www.nass.usda.gov/</a>
	Colorado State University’s webpage on agriculture (has photographs as well as other information): <a href="http://lib.colostate.edu/research/agbib/backgrnd.html">http://lib.colostate.edu/research/agbib/backgrnd.html</a>
<b>Settlements</b>	County atlases (give size and configuration of community at those dates)
	Insurance maps (usually 1880 to 1920, some to the 1950s, prepared by Sanborn and other companies)
	City plat maps (for larger towns)
	Building permits (when available)
	Business and city directories
<b>Mining</b>	Historical Index and Master Title Plats for Mineral Survey numbers (then look up survey plats at the BLM state office)
	Mine Inspection and Mine Manager’s Reports at the Division of Minerals and Geology
	Mining and engineering journals
	Files at the Colorado School of Mines library
	Courthouse records: location certificates, annual affidavits of labor, title transfer documents, articles of incorporation, other documents
	Henderson, Charles W. (1926) <i>Mining in Colorado: A History of Discovery, Development and Production</i> . U.S. Geological Survey, Professional Paper 138. Government Printing Office, Washington
<b>Oil and Gas, Oil Shale, and other minerals</b>	Historical Index for leases (then look up lease numbers at the BLM state office)
	Courthouse records for leases and agreements on private land
<b>Lumber</b>	Forest Service timber sale documents if available (may depend on date)
	Courthouse records: leases, chattel mortgages, articles of incorporation, etc.
	Chappel, Gordon S. (1971) <i>Logging Along the Denver &amp; Rio Grande: Narrow Gauge Logging Railroads of Southwestern Colorado and Northern New Mexico</i> . Colorado Railroad Museum, Golden, Colo.
<b>Linear Sites</b>	USGS Historic Trails Maps
	Limited Anniversary Edition of the Historic Trail Maps of Eastern Colorado and Northeastern New Mexico. Denver: U.S. Department of the Interior, U.S. Geological Survey. Glenn R. Scott (2004b).
	Colorado Railroad Museum, Robert W. Richardson Railroad Library
	Colorado State University’s webpage on agriculture, which includes a section on irrigation and historic photos. <a href="http://lib.colostate.edu/research/agbib/waterrt.html">http://lib.colostate.edu/research/agbib/waterrt.html</a>
	For water rights: State webpage <a href="http://cdss.state.co.us/DNN/WaterRights/tabid/76/Default.aspx">http://cdss.state.co.us/DNN/WaterRights/tabid/76/Default.aspx</a>
	Maps of U.S. government expeditions, including Fremont, Hayden, Pike, and Powell
	Historic contexts and multiple property listings for linear sites, including: Colorado Engineering Context (King 1984); Railroads in Colorado (Fraser and Strand 1997); Highways to the Sky (Associated Cultural Resource Experts 2002); Historic Context for Irrigation and Water Supply Ditches (Holleran 2005)

## Artifacts

Artifacts themselves present a particular challenge to archaeologists of the later historical periods, such as the Victorian period in Colorado, because of the immense variety of manufactured goods. One need only glance at reproductions of turn-of-the-twentieth-century Sears and Roebuck catalogs to get a sense of the intense specialization and diversity of goods mass produced and available to the buying public (e.g., Perelman 1993 [1897]). Classification and seriation of artifacts, as prehistoric archaeologists understand and use these tools, are not very helpful in historical archaeology, especially for assemblages from the nineteenth century and thereafter. Instead we rely on information such as the *terminus post quem* (TPQ), or initial manufacture date of an object, and less often the *terminus ante quem* (TAQ), or date at which an item or style of item went out of production. This is why, when recording a site, simply saying “tin can” is sorely inadequate as a description. To determine TPQ (especially if there is no surface collection), more information is necessary, such as whether it is a hole-in-cap or sanitary can, or what kind of seams it has: soldered, lapped, or folded.

Clearly the TPQ is more often useful than TAQ because people use and hand items down to other people long after the items have gone out of commercial production. Just as clearly, the same item cannot show up on a site before it is manufactured, so TPQ dates are extremely important for dating sites and features within sites. However, the way that historical archaeologists use these concepts is not always so clearly cut. For example, it is not always the date of initial manufacture that is important for dating a site, so much as the date of initial mass production and availability. Many things were invented long before they came into wide use. Furthermore, improvements in technology do not always replace earlier items across the board. For example, in most areas of the United States, wire nails do not replace common cut nails altogether when they become available. Rather, the ratio of wire to common cut nails increases through the decades between about 1890 and 1910, as cut nails are slowly replaced. Even then, cut nails do not disappear entirely; they are used to this day in some applications, such as in concrete construction. Availability may vary regionally though, and this is true in Colorado. In parts of Colorado and the West served by the Denver and Rio Grande Railroad people had access to wire nails distributed by Colorado Fuel and Iron, so that by 1890 wire nails replaced common cut ones almost entirely in some places, such as the Cherry Creek Construction Camp. This is ten to fifteen years earlier than elsewhere (Jonathan Horn, personal communication 2005).

Faced with the bewildering and specialized array of materials available within Colorado’s early consumer culture, historical archaeologists here and elsewhere have devised various functional typologies within which to organize the materials found. These classifications are loosely based on Stanley South’s work *Exploring Analytical Technique* (1977a), later refined by others (Sprague 1981). Museum cataloging systems are also sometimes organized in this way, and some archaeologists have found the volume on museum nomenclature by Blackaby and Greeno (1995) to be very helpful in this regard (Jonathan Horn, personal communication 2005). This volume may be of particular value because it is the basis for the cataloging system in some of the museums wherein anthropologists might eventually curate artifacts. For example, both on the federal level with the National Park Service and on the local level with the Pioneer Museum in Colorado Springs, this system is used for their collections. The Pioneer Museum houses all archaeological assemblages recovered from city lands and projects. To have a system of artifact classification that is both useful analytically and at the same time corresponds with systems used by museums seems particularly promising.

Prehistoric archaeologists often set up artifact classifications systems based on formal and technological characteristics (Hill and Evans 1972), but historical archaeologists do not use these systems to deal with their assemblages (Sprague 1981). Analytically, a functional classification system lets one get past the incredible variety of buttons, corset stays, suspender clips, and shoe grommets made of materials ranging from ceramic to metal to leather and classify them all in a class such as “personal” and group such as “clothing.” Other groups under “personal” could include, for example, “adornment,” such as jewelry or perfume (represented by vessel glass or stoppers). Other classes might include “transportation” or “livestock.” When confronted with a diverse assemblage spread across many features in a site, one can classify all the items into these classes and groups, compose simple bar graphs with relative frequencies of different classes or groups in different features, and thereby get a good idea of the function of the individual

features themselves and pinpoint activity areas throughout the site. So, for example, if a room in a feature yields more artifacts in the class “livestock” and the group “tack”, and very few personal items, one might conclude this was a tack room associated with livestock agriculture. If, on the other hand, it yields a lot of artifacts from a class such as “domestic” and the group “furniture,” such as upholstery tacks and kerosene lamp parts, then a very different interpretation results. In sum, such a functional classification scheme, however devised, makes more sense than a system dividing things based on morphology or material, such as ceramics, glass, and metal. A button that is made of porcelain may be functionally identical to one made of metal, wood, or bone. A classification based on material type does not contribute to the goal of interpreting human behavior across site spaces. However, composition and technological details *are* very useful for dating, and so they still constitute important information within functional types.

All this said, classifying artifacts into functional typologies should not overwhelm the importance of individual items in site interpretation. Sometimes the very presence of a particular object or style of object on a site, regardless of its functional classification, is worthy of note. For example, a particular style of tobacco pipe might generally indicate the function of tobacco consumption alongside all pipes. However, the material the individual pipe is made of may also denote the presence of a particular ethnic group or preference in terms of what kind of pipe or pipe material they use for the purpose. For example, Europeans used kaolin pipes while Native Americans used catlinite pipes on a Canadian frontier fort (Pyszczyk 1989). In this sense material culture selection by groups may reflect their ethnic or other social standing or may communicate it to others in an active way. Either way, material culture is active in identity maintenance and creation, adopted by a group to send a message, and in turn, shaping that group’s behavior. An example might be an immigrant family who adopts Victorian conventions of tableware in order to increase their social standing with neighbors and guests, but they still might use mismatched or older wares in private. Not only do they use the new tableware to send a message of respectability, but the tableware affects how they cook their food (individual cuts and servings replace more traditional “one-pot meals”) and how they eat it (one must be sure to eat dessert with the desert fork, not the fish fork, dinner fork, or pickle fork, and must not serve bordeaux in a burgundy glass).

Finally, with the vast research that has occurred about artifact TPQs and TAQs and manufacturing histories, there is no excuse for random guessing at the occupation period when recording sites on survey projects. Nor should site dates be based solely on the documentary record when they can be based also on the artifact assemblage at the site. For one thing, the entire occupation or variety of occupations on the site may not be accurately recorded in the documentary accounts. So even if the date range indicated by artifacts seems to contradict that in the documents, the artifacts should determine the date range where available and the existence of conflicting dates should be noted.

## **Oral Narratives**

For some sites there may be people still alive who remember living, working, or just visiting there. An excellent approach is to get the person or people out on location to tour the site as they talk about it. In any case, the questions asked of such people need to be carefully thought through. Wording is important. Usually some mix of open-ended and specific queries is appropriate, and letting the informant ramble (within reason) can result in unanticipated but very useful information.

If oral narrative data are part of the research, then a methodology section describing how the data were collected, what questions were asked and in what language, and how the information was recorded and transcribed is appropriate in the final report. This section should include who was contacted, how these people were identified to begin with, and who responded – in other words, background information about the sample. Further questions might include whether one informant’s information could be checked against another’s, the time interval that had lapsed between the time the informant describes and the present, how old the informant is now, and how old was the informant when he or she was on the site last.

## **RESEARCH TRENDS IN THE WESTERN UNITED STATES AND COLORADO**

Historical archaeologists have generated several works based on models and theoretical frameworks stemming from both history and anthropology and specific to post-contact archaeology in the western United States (Ayres 1991; Hardesty 1981, 1985, 1994; Schuyler 1991; Thomas 1989). Secondary historical works by social historians have been popular sources to draw from for research models, including Donald Worster (1979; 1992) (water and the West), Patricia Nelson Limerick (1987) (New Western History), Rodman Paul (1963; 1988) (mining and Plains history), Walter Prescott Webb (1931) (Plains), Father John Francis Bannon (1970), and David Weber (1982; 1992) (Spanish and Mexican Borderlands). (See, for example, Rogge et al. 1995.) Historians, anthropological archaeologists, and cultural geographers have provided definitions and research models concerning frontiers and boundaries (Green and Perlman 1985; Hardesty 1981, 1985; Hodder 1985; J. Hudson 1967; Lewis 1985; Lightfoot and Martinez 1995; Limerick 1987; Malone 1991). Sociological and anthropological models about settlement and economics in the West range from Carl Wittfogel's hydraulic society to Emmanuel Wallerstein's World System Theory and its variants (Wallerstein 1974; Wittfogel 1957).

A 1991 issue of the journal *Historical Archaeology* was dedicated in part to historical archaeology in the western United States (Ayres 1991; Hardesty 1991; Schuyler 1991). Donald Hardesty, in particular, advocated a unified research agenda for historical archaeologists in the West, although others, such as William Lees, have questioned a need for any kind of fundamental or standardized research agenda (Hardesty 1991, 1999a; Lees 1999). Hardesty's research questions revolve around several areas of inquiry where historical and anthropological models have overlapped, in part because social historians of the West have borrowed from anthropology and sociology. Alan Reed and Jonathan Horn took the models Hardesty presented in 1991 and systematically tested them in the course of a large-scale data recovery project associated with a natural gas pipeline project in western Colorado. Because their work applies to these larger research agendas within historical archaeology in the West, yet also directly to historical archaeology in Colorado, I use it as a framework for this section; however, I do bring in alternative perspectives from my own work and that of others in the state as well.

### **Testing Models Proposed by Social Historians and Social Scientists**

Reed and Horn analyzed and tested Hardesty's systemic models, which are very loosely based on World System Theory and the American West as a "dynamic periphery of an evolving American world system" (Hardesty 1991:30, cited in Reed and Horn 2001). In his 1991 work, Hardesty based his models on the work of New Western historians Limerick and Worster (and Worster's work is, in turn, loosely based on Wittfogel 1957). The themes of interest to Hardesty are control of water, boom and bust economies, "legacy of conquest," frontier urbanism, and dependence on the federal government. Authors will identify many of these themes within different chapters in this volume.

### **WORSTER, WITTFOGEL, AND WATER IN COLORADO**

Reed and Horn (2001) argue that while Hardesty's themes of interest were conceived at the scale of entire regions, they should be amenable to research at the community or site scale as well, putting such sites in a larger research context. This approach would have potential for comparative work with similar research in other places within or outside of the American West. However, in practice, the authors concluded that there was not "a good fit" between the archaeological project data and the historic themes utilized in an attempt to synthesize the data (Reed et al. 2001:166). The problem for Reed and Horn seemed to be the broadness of the themes and their large-scale conceptualization when applied at a particular site. Or, in some cases, they felt that a given model simply did not apply. For example, when examining control of water in the West from either a Wittfogel or Worster point of view, the authors found that it was "not until the Newland Act of 1902 that major public works projects were developed that resulted in the construction of large reservoirs, water diversions, and complex canal and ditch systems that were well beyond the scope of local

financial abilities,” at least in their Western Slope research area (Reed and Horn 1995b:167). Conditions may well be different on the Front Range and elsewhere, where privately capitalized irrigation was more successful (Horn, personal communication June 2005). Reed and Horn further disagreed with the premise that large water projects were intended to exert government control over irrigation (Reed and Horn 1995b).

I am more optimistic about the potential of this theme in historical archaeological research. Worster’s argument emphasizes the idea that government special interests guided policy decisions which in turn provided fertile land for speculators at the expense of the small farmer. His analysis is not predicated on any direct control of irrigation by government. Nor is his argument restricted to discussion of large-scale water projects. It applies to personal and community level water control within the context of land law and water policy as a whole; the development of public law governing land and water rights in the West begins decades prior to 1902. He does argue that there were those with vested interests who resisted different water strategies from those currently in use, even though such strategies were based on well-known contemporary science. This is an argument that Wallace Stegner also makes in his biography of John Wesley Powell. Other models of water control and use available to the federal government before they planned the large water projects included working examples in Hispanic and Mormon settlements, and the much higher profile U.S. Geological Survey report submitted to Congress by Powell as early as 1878 (Powell 1878). Powell suggested a much more communally based policy of water distribution based on social equity and access according to need, in direct contrast to what in fact developed as individual rights based on prior appropriation. Despite the clear empirical basis upon which Powell’s report rested,

Representative Patterson of Colorado called the whole program the work of one man, ‘a charlatan in science and intermeddler in affairs of which he has no proper conception.’...Somewhat more rationally, they [Congressional leaders] attacked it as a step towards paternalism in government, though how the attempt to protect the small freeholder from speculators, the forces of nature, and the manifest failure of the current public land laws could be considered a vicious undermining of the free American spirit is not quite clear (Stegner 1953:239).

Powell’s report resulted in nine days of “bitter debate” before a “guttled” version was passed in the House but defeated in the Senate. Every attempt at land or water law reform was blocked. “Western congressmen had no real interest in the survey and little to fear from an investigating commission, whose report could easily enough be covered over with dead leaves when it appeared” (Stegner 1953:240). Clearly Stegner has an agenda here and identifies with Powell, but his work demonstrates that as early as the 1870s there was debate about the proper direction and conceptualization of future water policy.

Powell’s suggestions, had they been acted upon, would have engendered a very different landscape of agriculture and urban settlement in the West than the one we see today, affecting virtually every theme we cover in this volume. Whether or not one agrees with the idea that there was an active capitalist conspiracy afoot, it is true that the ideas in his report were threatening enough to the status quo that, as a direct response, the entire U.S. Geological Survey was reorganized and Powell was put (at his request) in charge of the newly formed Bureau of Ethnography. In as much as Wittfogel proposed a relationship between water control and state power versus individual or community-scale tactical power, this battle would seem to be pertinent, occurring early in the development of the western land and water law upon which the later Newlands Act was predicated. It can provide a context for examining individual and community water projects, especially contrasting with models and on-the-ground evidence in Hispanic and Mormon settlements. Such policies, resulting from such legislative dramas, affected decision making by individual settlers and communities as well as larger federal and state water projects and shaped the development of rural and urban landscapes as a whole. Such decision making in the past has left people in Colorado with the water-related debates the state faces today.

## **BOOM–AND–BUST ECONOMIES**

Reed and Horn are more optimistic about the potential for others of Hardesty’s suggested research agendas to be examined at a site-by-site scale, such as boom and bust economies. They say “sites in the

region are probably good subjects for the study of the impacts of economic volatility on individual households and communities,” including looking at possible “coping strategies” (Reed et al. 2001:168). They further believe that such studies may have comparative applications at the national and international levels. Clearly, any site under the extractive industries theme could be viewed in this larger context, but so could individual domestic site settings, as people struggled to cope with economic vicissitudes or benefited from economic boom times. Questions of identity and capitalism can also apply under this theme. In Amy Gray’s recent M.A. thesis, *Contested Ideals: Cultural Citizenship at the Ludlow Tent Colony*, she links consumer choices by immigrant families to issues of inclusion, acceptance, and American identity-building in the context of turn-of-the-century America (Gray 2005). Boom-and-bust economies are certainly important to the archaeology of the labor movement in Colorado in general.

## CONQUEST

The “legacy of conquest” theme suggested by Hardesty also seemed to Reed and Horn (2001) to have some worth, as in the question of whether a “conquest ideology” existed among settlers in the West. Reed and Horn see the possibility of this in the “Wise-Use” movement. Examples might also include the “Sagebrush Rebellion” of the 1970s, although not yet a 50-year-old phenomena. Such ideologies may have governed both settlement and patterns of use on public lands, as well as how federal organizations such as the Department of Defense (DoD) ended up acquiring huge tracts of public land in Colorado (Church and Clark 2008; Clark et al. 1997).

These are good examples when *conquest* is seen as the conquest of nature. I would argue (along with Limerick 1987) that the definition of conquest includes conquest of peoples, including Native Americans and Hispanos after the Mexican-American war, and this research theme has application in historical archaeology as well (Gilchrist 2005; Silliman 2005; Wilkie 2005). Sites such as the Little Bighorn battle site and the Sand Creek Massacre would fit into such a framework, as would Camp Amache. (That Camp Amache is a Japanese internment camp named after a Cheyenne woman whose father was killed in the Sand Creek Massacre is certainly ironic.) The reparations paid to the survivors of Sand Creek shaped settlement and land use in places like Boggsville, Colorado (Carrillo 1993; R. F. Carrillo 1997; Clark 1996, 1997a).

## FRONTIER URBANISM

“Frontier urbanism” also has potential, according to Reed and Horn, which they discuss in terms of “the mechanism by which eastern urban culture was incorporated into the households and communities of the American West” (Reed et al. 2001:168). It is true that people brought their ideas of urban culture with them when they moved from east to west, and this perspective is relevant especially at the house-lot level of analysis. However, we need to keep in mind that the eastern culture that those settlers who were from the east brought with them was derived from mature eastern cities. In terms of the process of urban development, eastern and western cities grew quite differently, and that difference will be important when undertaking neighborhood and landscape scale archaeologies of western urban centers.

Historian Quintard Taylor has taken the view that western urbanism is categorically different in its development than eastern cities. Bonnie Clark and Kathy Corbett also allude to the differences between eastern and western urban development in their discussion of “instant cities” in Chapter 3, which are also discussed in Sarah Nelson’s and her colleagues’ discussion of the archaeology of Denver (Nelson et al. 2001). During a talk at the University of Colorado Boulder, Taylor cited census statistics that indicate that the majority of westerners held essentially service-industry positions, such as “clerk,” in towns and cities during the last quarter of the nineteenth century. Such population statistics suggest that in fact (despite the rural cowboy mythology of wide open spaces) from the Gold Rushes onward, settlement in West has been predominantly urban (Quintard Taylor, public lecture, Department of History, University of Colorado at Boulder, August 1995). “An influential minority made ranching their exclusive economic activity, giving rise to the twentieth-century image of the region as the nearly exclusive domain of cattlemen and cowboys (Taylor 1998:156).”



Eastern cities grew more gradually out of rural crossroads or river junctions (in the South) or villages (in the North), their patterns of growth revolving around transportation technologies from “walking cities” to “street car suburbs” (Reps 1965; Stilgoe 1982). Western cities were urban from their earliest settlement; urbanism was the original goal of the nineteenth century speculators and boosters who planned them. Agricultural settlements developed secondarily to cities, in relationship to the mining or railroad towns they served and relied upon. It takes only a quick look at urban layout and infrastructure, differences in zoning, and attitudes towards public transportation to clearly distinguish western and eastern cities and the demographic, ideological, and economic forces that produced them. These differences, the development of which can be seen through landscape archaeology and cultural geography, are relevant to interpreting the qualities of modern urbanism in Colorado and the West. A good example of this kind of study is the work by the Colorado Department of Highways on the Tremont House, which took into account issues of the changing neighborhood and layout of land, not simply the hotel and its occupants (Carrillo and Jepson 1995; Carrillo, Pearce et al. 1993; Nelson et al. 2001). Even today, it is clear that public transportation was at the heart of urban development and planning in the East. It is at best a feeble afterthought in most western urban centers.

## **WESTERN DEPENDENCE ON THE FEDERAL GOVERNMENT**

Finally, dependence on the federal government in the West is a theme that Reed and Horn (2001) feel is important, but in need of revision in terms of perspective.

The tradition of use of the public domain for personal benefit and taking advantage of government programs that facilitate economic success on public lands or from federal projects has a long history in the American West. That such opportunities are now perceived as subsidies would probably be considered astonishing to the individuals participating in the industries, as their contribution involved hard labor and because what are now viewed as subsidies were considered opportunities intended to facilitate their success....Probably a better approach to this topic might be one that takes into consideration the perceptions of the individuals historically, who may have perceived the role of the government as providing opportunities. The current approach to this topic is largely negative and probably reflects current distrust of the motives of government and a sense that current government policy can be swayed for the benefit of a few favored recipients (Reed et al. 2001:170).

It is true that some historical emphases have been unduly negative. The point that many Euroamerican settlers in the West would have been puzzled by the current perception of opportunities as “subsidies” is a good one. It is certainly the case that many white settlers in the West felt they were entitled to the resources they extracted, and the environmental ramifications of this activity, which would affect the population more broadly, were not yet evident on the horizon.

A question stemming from this perspective is when does one person’s federally provided opportunity become another’s taxpayer-supported subsidy? The conflict between envisioning federally owned lands as “public lands” in the sense of belonging to all citizens of the United States and more local visions of use rights and opportunities is not just a product of 20/20 hindsight. These competing perceptions date back well into the nineteenth century. Perceptions of land rights are complex. For example, the contest in large parts of southern Colorado between the uses Hispanics made of alpine woodlands and valleys, the use claims by private owners, and the claims by the U.S. Forest Service have resulted in court cases involving huge areas of land in southern Colorado from the late nineteenth century to this day (Church 2005). (Witness the recent resolution of the 40-year-long Taylor Ranch lawsuit, brought by land grant heirs in the San Luis Valley.) Looking at perceptions of land use is very helpful and can be done through archaeology by looking at changing patterns of land use and settlement through time. However, it should be born in mind that the perspectives in the past were as multiple and contested as they are today (Church 2002; Church and Clark 2008).

If some eastern taxpayers felt that they had a stake in western public lands, there was some financial basis for that feeling. State by state, the ratio of federal taxes paid to federal funding received still favors residents of western states, while the New England states benefit the least. During the Great Depression, the West as a region received more government relief than any other region of the nation.

Between 1933 and 1939 the West led all other sections in per capita payments for work relief, relief, and loans. The Rocky Mountains states received \$716 per capita, the Pacific Coast states \$424, and the Great Plains states \$380. By way of comparison, the highest-ranking nonwestern section was the Midwest, with \$380 per capita (White 1991:472).

During the ensuing war years, between 1941 and 1945, the federal government “provided 90 percent of the investment capital available in the West” (White 1991:497). So even nonwestern tax-paying tourists felt and still feel entitled to have a say in the management of public lands, though their perceptions on management may differ sharply from local ones. In terms of archaeology and landscape analysis in Colorado, the development of tourist-related recreation sites ranging from campgrounds to ski areas to the 10th Mountain Division Trail can be understood in this light, as can the current debates surrounding the expansion of the army’s Pinon Canyon Maneuver site. The tensions between local and national perspectives on the role of the federal government in Colorado can be examined through the lens of archaeology.

## **Landscape Approaches**

The huge majority of post-contact historical sites in Colorado are noted in the course of Phase I survey projects, and only a few project directors have used such survey-based data directly to address larger research questions in historical archaeology (e.g., Baker 1981a; Clark et al. 1997; Mabry et al. 2002; Reed and Horn 1995b). Like many western states, Colorado has large tracts of public land that are particularly good for looking at cultural landscapes, some of which have been “frozen,” if you will, at a point in time when purchased or condemned by the DoD or purchased by the Forest Service, or acquired under like circumstances. Many archaeologists, both prehistoric and historical, have taken a landscape approach, addressing research questions by looking at how groups of humans have inhabited and modified large tracts of land. In Colorado, patterns of settlement and the ways that people choose to modify the landscape at a regional scale can tell us, for example, about different ethnic groups’ economic strategies through time, perceptions of and attitudes toward land, and the process of creation of “homeland” (Church 2002). The West is full of contested landscapes, and archaeology is one way to research the cultural processes shaping such debates and power struggles, whether they take place as battles between cattle and sheep ranchers, ranchers and the DoD, Hispanics and non-Hispanos, or residents and zoning boards. Large tracts of land in Colorado are ripe for such large-scale settlement research and for the delineation of Historical Districts (Church and Clark 2008).

Social scientists have had a long-standing interest in the processes of globalization and modernity. The long borderlands history of southern Colorado sites settled by Hispanos, Spanish-Americans, Mexicans, Chicanos, or mestizos, however defined, are also fodder for studies of the formation of nationalism and transnational processes. The history of such processes reaches back to the nineteenth century, when identities were fluid, and borders were even more fluid and mutable than they are now (Church 2007; Clark 2005). How groups laid claim to territory and resources, whether ranchers, miners, or farmers, Germans, British, or Hispanos, was intimately tied up with that group’s sense of identity, nationality, class, and stake in a perceived homeland. Such considerations shaped investments in land, architecture, commercial goods and community, and distinct material culture patterns that are often visible in the archaeological record (Church 2002).

## **Other Approaches in Colorado**

A 1992 issue of *Historical Archaeology* addressed the archaeology of the Spanish and Mexican Republican periods, and many articles dealt with western themes (Farnsworth and Williams 1992). The Spanish and Mexican legacy has generated historic period archaeology in the West in general, ranging from as early as Waldo Wedel’s attempts to trace Coronado across the Plains to David Hurst Thomas’s edited volume on the Spanish Borderlands West (C. M. Carrillo 1997; Fontana 1994; McGuire 1983; Snow 1984; Thomas 1989; Thomas et al. 1992; Wedel 1994).

Work on non-Hispanic nineteenth and especially twentieth century sites published outside of the “gray literature” (archaeological technical reports with narrow distribution) has been both rarer and more recent (Ayres 1991; Ayres and Seymour 1993; Carrillo and Jepson 1995; Hardesty et al. 1995; Praetzelis et al. 1990). Of particular note in this regard is work by Donald Hardesty (Hardesty 1981, 1985, 1991, 1994, 1999a). Hardesty has advocated a particular evolutionary approach that uses households as a basic unit of adaptive change in frontier contexts. He is also a good example of a processual archaeologist who has had an interest in exploring gender roles archaeologically (Hardesty 1994), as well as looking at emerging globalism and World System Theory approaches to historical archaeology, especially in the West (Hardesty 1991; Hardesty et al. 1995). Some excellent research also exists in the gray literature, but those works are, by definition, harder to come by. In the chapters that follow, the authors in this volume cover some of these valuable sources, originating mainly as the result of CRM projects.

The Colorado past, as explored through archaeology, has included sites ranging in date from the seventeenth well into the twentieth centuries, but it is heavy on the late nineteenth century sites and light on earlier and later ones. Site functions range from mining and timbering camps to homesteads, Hispanic villages to Basque sheepherder camps, and aspen art to military installations and internment camps. The subject matter addressed through archaeology has also been diverse, ranging from an emphasis on the influence of Victorian ideology and goods on late nineteenth century sites (Baker 1978a, 1983a, 1999a, 2002a), works on gender and ethnicity (Carrillo 1993; R. F. Carrillo 1997; Carrillo 1999; Carrillo and Jepson 1995; Carrillo, Mehls et al. 1994; Carrillo et al. 1996; Carrillo et al. 2003; Clark 1996, 1997a), labor issues and class (McGuire and Walker 1999; McGuire and Reckner 2002, 2003), explorations of cultural landscapes (Carrillo et al. 2003; Church 2001, 2002; Church and Clark 2008; Clark et al. 1997), urban archaeology (Carrillo and Jepson 1995; Nelson et al. 2001), globalism, and the role of ritual in ethnic interaction and emerging capitalist trade relations (Comer 1996).

Frameworks used for approaching sites of various kinds range from the more methodological, such as William Buckles’s classification of homestead types (Buckles 1981, 1993a), to those grounded in particular theories, such as Steven Baker’s evolutionary approach to a “Victorian Cultural Horizon” (Baker 1978a, 1983a, 1999a, 2002a), neo-Marxist approaches to labor and resistance (McGuire and Walker 1999; McGuire and Reckner 2002, 2003), or World System Theory and globalization (Hardesty et al. 1995). Both academic and CRM projects have successfully addressed these kinds of anthropological research agendas. Different cultural resource types have drawn people to ask different sorts of research questions, and all are valuable contributions.

## **HISTORICAL SITE RECORDING AND THE OAHF DATABASE**

Given that much of the data in Colorado has been limited to surface recording of sites in the course of survey, what is most important from a more basic and practical standpoint is that archaeologists should record sites with some sense of system and standardization and obtain some sense of sites’ larger contexts. It is clear from a brief look at the state’s “Site Files” database at the OAHF that such has not always been the case. Much of the variability in level and detail of site records is a result of when the sites were recorded, and things have improved considerably with the introduction of more detailed prompts for information on state site forms in the last 15 or 20 years. The OAHF database is, of course, only as good as the information we provide.

Improving the standardization and potentials of the Site Files for the future is easier than dealing with the past data already recorded and entered. But it is important to try to do so, if possible. As it stands the database is good for determining what sites are already recorded in a specific area and looking up associated reports. And such searches are probably the primary use to which the archaeology site files are put. The majority of users are CRM professionals who need to delineate areas of prior survey and sites. However, all archaeologist users (public and private sector) would also like a database that archaeologists can use to outline larger patterns or pose more general queries, and for this purpose the current database is markedly less useful,

as the authors found when researching their chapter themes. This is clearly not the fault of the database managers at OAH (and this author was one). Inconsistency in the database reflects inconsistency in the data the OAH receives.

## Standardization of Terms

There are several of areas of recording with potential for improvement. William Buckles pointed out one issue at a meeting of the SHA in 1993; namely, that the word *homestead* is often used as a generic term for any rural residential site. Although the term predates the Homestead Act of 1862, the term homestead has since come to have a specific legal and historical meaning among historians and should refer only to lands and buildings patented under the various legislations ruling transfer of federal land to private ownership (Buckles 1993a). Otherwise the term becomes so broad as to be meaningless. It should not be an umbrella term for any rural domestic site.

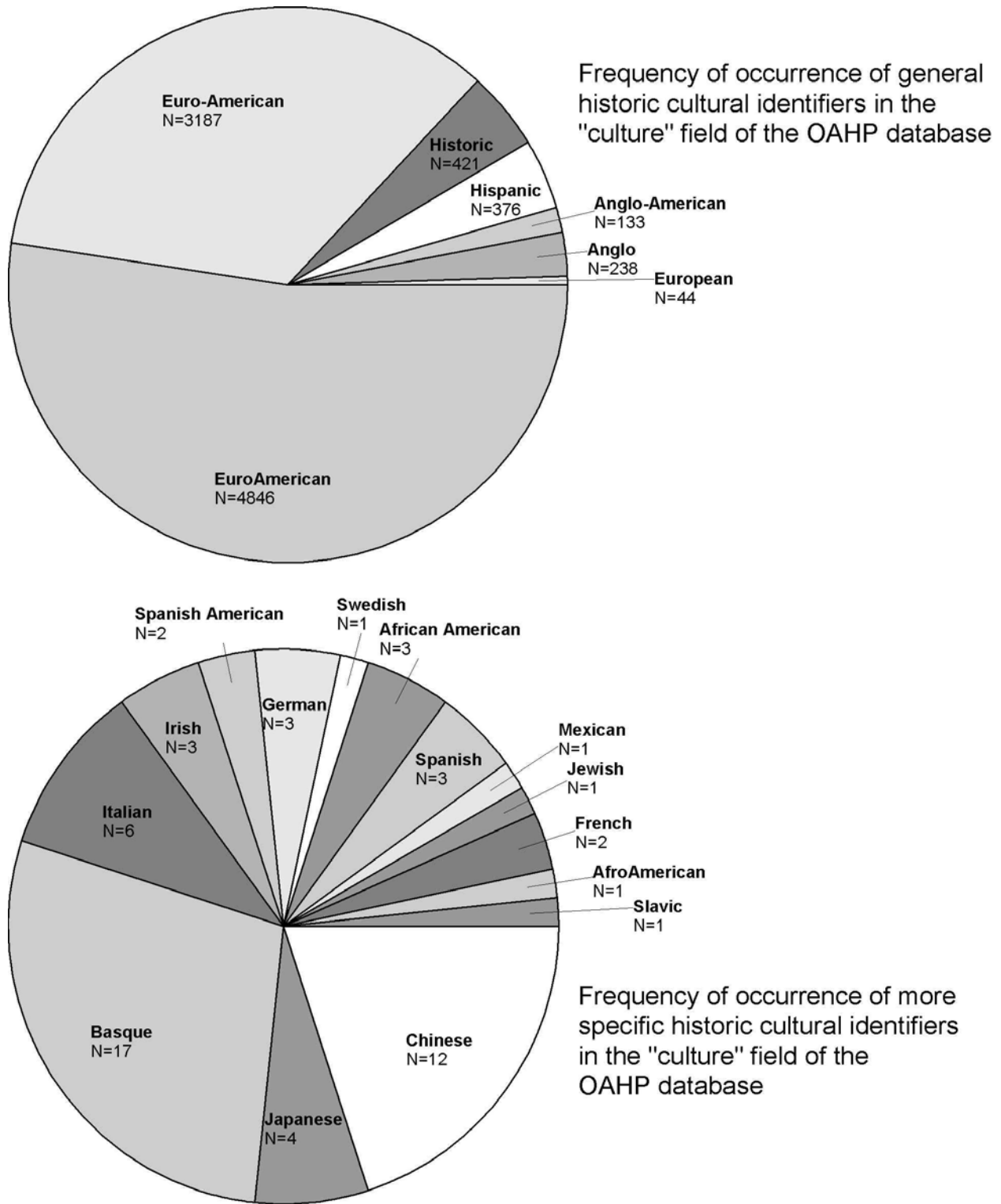
Another recording issue came up in Bonnie Clark's paper, delivered to the Colorado Council of Professional Archaeologists in Glenwood Springs (Clark 1999b), wherein she pointed out that the terms that appear most commonly on historical site forms under *cultural affiliation* are *Euro-American*, *Euroamerican*, and, to a lesser degree, *Anglo-American*, used as a default for historical sites of unknown ethnic origin (Figure 1). Labeling a site Euroamerican when there is no specific supporting documentation is making an assumption, and labeling it Anglo-American is an even larger one. The odds may be in favor of these designations, but there is no way to know whether they are accurate, absent other kinds of research. The most useful generic term where actual cultural affiliation is not known is probably "unknown historic."

In the chapters that follow in this volume, authors do indeed vary ethnic terminology. However, they are consistent within terms (i.e., Euroamerican, not Euro-American), and they make conscious and informed decisions about what terms they are choosing. For example, within Spanish and Mexican borderlands scholarship, in anthropology and in history, the term "Anglo" is a culturally and regionally specific term embracing all who are not of Hispanic or Native American descent. For consistency within this volume, we will use Anglo-American. In such cases, Euroamerican is clearly an inadequate substitute for Hispanic as it does not embrace potential mestizo heritage. Spanish-American is a more specific term, with implications about class as well as culture and heritage. But though Anglo is appropriate within discussions of the southern Colorado borderlands, or non-Native Americans in reservations settings, it is adequate as an entry on a site form only if the people in question are of British descent.

*Unknown* is not a satisfactory entry under affiliation either. Either *Unknown prehistoric* or *Unknown historic* should be the minimum of specificity. On a clearly historic period site, *Unknown historic* is the preferred term only if, after consulting all the relevant documentation, the ethnic heritage of site occupants is truly unknown. With adequate documentary research some entries of *Unknown historic* will be replaced in many cases with more specific terms, such as *German-American*, *African-American*, or *Anglo-American* (as in from the British Isles). On the OAH staff end, given the inconsistency of entries to date, perhaps standardizing the terms using global edits of the database would make certain search results more reliable without compromising recorder intent, for example, deciding on Euro-American or Euroamerican and sticking with one or the other in each case. Various authors will describe more specific problems with particular field entries as they relate to OAH database searches for information on themes covered in ensuing chapters.

The problem of standardization on the forms does not end with cultural affiliation. Virtually every theme covered in this text can provide examples of the unstandardized way that archaeologists have entered terms on form and therefore the way they were entered into fields in the database (e.g., school, schoolhouse, school house). The problem exists in designating themes, physical characteristics of sites, and artifact descriptions. When Tom Karpel, a University of Colorado, Colorado Springs student hired to help the authors with state Site Files searches, used all variants of such terms to conduct searches requested by the authors, he got the "query too complex" response from Microsoft Access. He had to devise a complex way to

rerun the searches in smaller batches and then consolidate results, and, as a consequence, he and the authors of various chapters offer caveats about the data.



**Figure 1.** Site form entries under *culture*.

## Archaeology and Architecture

Another characteristic of the database is that the Historical Archaeology and Historic Architecture groupings are mutually exclusive. It is unclear in the Architecture database whether or not these sites have been evaluated for both archaeology and architecture or only the latter. All architectural sites have associated archaeology. The reverse is not always true. No doubt there are sites with evaluations based solely on architecture that must be revisited to determine eligibility of archaeological components. The separation of archaeological sites with and without architecture would not, in itself, be a problem if one could be sure that the architectural sites had been evaluated for subsurface material potential as well as standing structures. From the information available through Compass (the subset of the site database that the OAHp has made available on line) or Site Files (the more complete database), one cannot be sure.

### Dates

The dating of sites in the database is often confusing because people use generic dates seemingly based neither on historical documentation nor on artifact seriation or manufacture dates. On some forms, it seems that the recorders simply guessed at dates and date ranges, sometimes falling back on the full range of regional historical occupation. Ideally, both documented occupation dates *and* artifact dates should be employed to determine date range because some occupations evidenced by artifacts may be undocumented in the archives.

### Eligibility

It has been the experience of several authors that they are confronted with site forms, as well as sites in the Site Files OAHp database, that do not make clear whether the significance or eligibility assessments are based on the pre-contact or post-contact components of a site or both. This ambiguity makes it very difficult to plan or bid appropriately for testing or mitigation projects based on survey results.

Another helpful piece of information regarding eligibility evaluations is missing entirely from the Site Files database; namely, what criteria, if any, people are using as a basis of eligibility in either field or official assessments. Surely the criteria vary, and it would be very interesting to know how people are applying them to historical sites in general. Unfortunately, it seems there is no way to do so. Especially problematic is the practice of giving sites negative significance evaluations without doing any documentary research, even where pertinent documents are easily available. A prompt on the form asking what archival sources were consulted prior to evaluation might be helpful in this regard. If artifact analysis is inadequate – when there are no clear TPQs or the descriptions are too general – or if the basic documentary records have not been consulted, then any resulting evaluations are not acceptable.

### Suggestions

It may well be that nothing can realistically be done about some of these problems, especially as they affect sites recorded in the more distant past. Possibly a couple of new fields could be added to the database filled out by OAHp personnel, one with eligibility criteria and one associating a limited number of themes (defined by a limited number of terms, perhaps extracted from this volume) with every site entered. This field would be searchable under, for example, “extractive industry” or “rural agricultural.” That way all the original data still would be recorded intact from the original form, but there would be a field useful for “quick and dirty” searches by researchers who want to know what themes and research gaps might apply to a given project area.

For the future, it may be useful for a committee of interested archaeologists in the state to sit down with OAHp personnel and devise a lexicon of terms and definitions to standardize entries better and perhaps modify the forms to provide prompts for the kinds of information that must minimally exist for an eligibility evaluation to be acceptable. Toward the former goal, William Butler explains a relatively user-friendly

typology of sites from Rocky Mountain National Park in the appendix of his work that might constitute a good starting point (Butler 2005). This document includes a wide variety of the types of sites commonly found in Colorado, and his report is organized thematically in ways that could be made compatible with the organization of this context document.

Until we address these problems inherent in how archaeologists have recorded sites, the resulting database is difficult to use as a finding aid and virtually impossible to use as an analytical tool to identify larger archaeological patterning in the state. Both field practitioners and OAHP personnel would like more reliable results when they query the database. These suggestions are offered in the spirit of achieving a common goal – gaining a more useful state database.

## SITE SIGNIFICANCE AND ELIGIBILITY

Determining site significance within a hugely diverse population of post-contact sites constitutes a challenge, and there is considerable discussion on how to do so. Usually, significance is ascribed by using the NRHP criteria as the accepted standard, particularly by CRM personnel. However, criterion d can still be interpreted with some flexibility. As mentioned before, Hardesty and Little (2000) advocate a unified approach to historical archaeological research, and therefore site significance and eligibility, based on the procedural steps that they describe in their book, *Assessing Site Significance: a Guide for Archaeologists and Historians*. This work may indeed be of great use for those who want a step-by-step guide to evaluation decisions; they suggest site classification in a fairly general and encompassing manner, and the authors provide specific case studies. They also take on the challenges of landscapes and large-scale sites such as plantations and ranches. Underlying their procedure, however, is the assumption of a more or less codified set of potential research questions.

William Lees, in contrast, notes

the transitory nature of research orientations and of problems in using such transitory orientations to judge the significance of sites which we seek to preserve for, among other reasons, their use in future research – a goal which implies a site’s utility for research on currently undeveloped research questions (1988:105).

He thus argues that a given site has no inherent quality of significance and that sites must be dealt with case by case. Put another way, all sites are potentially significant for some conceivable research questions or other. Of course that does not mean all are eligible. Lees goes on to give several examples of different approaches to significance evaluation, including the following:

1. Sampling, to gain a representative sample of significant sites within a project area, using temporal and functional criteria.

Lees (1988:106) faults this approach because it “in effect combined the steps of significance evaluation and mitigation planning” when the “goal of the survey and evaluation process is to identify all the sites that are potentially significant”. In other words, sites should actually be evaluated case by case, not as members of predefined populations of sites. Furthermore, this latter approach has been abused in the past, allowing the argument that because there are many homesteads or some other generic or ubiquitous site type, such sites are insignificant. This flawed argument is generally used in cases where there is also woefully inadequate background research. The representative sampling approach can at least avoid this problem.

2. Determining the representatives of site types and site frequencies within a particular “natural, political, or social unit” (Lees 1988:106) such as the county.

This suggestion suffers from the same problems as the first example above.

3. Thematic surveys (which Lees favors) that focus on sites of a particular functional type, with specific attention to their “varied physical expression as related to variables such as time and geography.”

Lees (1988:106) goes on to say that by using this method, “seemingly homogenous site classes such as potteries and iron furnaces were seen instead to be composed of numerous types of potteries or iron furnaces”. This method could apply to many site types authors discuss in this volume, from mining features to farmsteads. William Butler also addresses this point in his work at Rocky Mountain National Park:

Both prehistoric and historic archaeological sites and isolated finds are defined primarily on the basis of the number of functions, not necessarily the number of artifacts. Quantity is not as important as is diversity. The idea behind these definitions is to get away from counts of things, and talk about what people were doing, i.e., function (2005:2-18).

Here the discussion moves from assessing site significance to assessing eligibility. Criteria for eligibility that Lees discusses have to do with site “rarity” and site “clarity” (Lees 1988:11-112). Rarity refers to sites where significance is a function of the fact that very few similar sites exist. Clarity refers to both site integrity and to length of occupation; a site occupied less than 20 years is a much less complex subject for excavation and interpretation than one that was reoccupied over and over again through time. Information about specific periods can be more easily teased from the data on a site with a shorter occupation.

Site integrity also has a clear impact on eligibility. Site formation processes and taphonomy (what happens to the artifacts and features during the interval between people creating them and archaeologists encountering them) is an important determining factor. If a site has been heavily disturbed or damaged such that the stratigraphy has been churned, mixed, or even removed, and there is no portion of the site left intact, that site might be significant but not eligible. To a degree, a judgment call must be made about how much damage or disturbance it takes to make a site ineligible, but archaeologists are trained to make such judgments based on past research, and such prior impacts must be evaluated by a professional.

## **Insignificance and Ineligibility**

The final, and perhaps most important, point Lees makes is that although archaeologists know that explanation is necessary to support an argument for site significance, explanation should also be required for evaluations of nonsignificance and ineligibility. Such a requirement would largely eliminate the problem of, for example, archaeologically eligible sites evaluated as not significant or eligible based only on the state of the architecture or because basic research in the archives is deficient. Lees (1988:112) argues that in such cases, “it must be demonstrated that all four [NRHP] criteria were considered, and the reason negative recommendations were reached must be presented”.

For criteria a and b, the sources consulted concerning the history of the site should be reviewed, and a narrative summary of the site’s history and conclusions concerning it should be presented. For criterion c, the nature of the site’s architecture should be reviewed, and the relationship of the architecture to the pertinent architectural study unit be identified. Criterion c may pertain to things other than architecture (the waste dump from a local potter may represent an association with the works of a master, for example), and these values need review when applicable. For criteria [sic] d, the relationship of the site to the research questions...should be presented, as well as a discussion of the site’s integrity. Overall, this documentation should be sufficient to demonstrate that all areas of potential significance were considered, and should document the reasons for negative conclusions that resulted (1988:112).

Besides the clear need to revisit and reevaluate the archaeological potential of sites that have official NRHP evaluations without consideration of archaeological potential, there are other, more specific research gaps in Colorado historical archaeological research. Some such gaps encompass virtually entire themes presented in this volume. Others occur within themes. Individual authors will designate gaps and suggest ways to address them in the following chapters.



## CONCLUSION

There has been great progress in the way archaeologists, resource managers, and state administrative personnel have recorded and valued historical archaeological sites in recent years, but the negative ramifications of past practice and biases are still present. Evaluations of significance for a large number of historic period sites from CRM and academic survey projects dating before the later 1990s are in need of reevaluation. When possible, such sites need to be revisited. Historical archaeologists need to better communicate the importance of post-contact sites to the many nonarchaeologists who are decision makers within the state and federal bureaucracies. A critical mass of voices in the state who advocate for post-contact archaeology in the administrative ranks has only recently been reached.

Now that money and trained personnel are available, CRM firms should routinely bring historical archaeological expertise to bear when historical sites are involved. In the past, it was often politically difficult for cultural resource managers to insist on the presence of such specialists, even if they were so inclined, given lack of support for historical archaeology at higher levels. This is no longer the case. Also in the past, the in-state pool of people trained in historical archaeology upon which resource managers could draw was small. This situation is also changing for the better. Personnel unfamiliar with the specific requirements of post-contact archaeology no longer have to handle recording, evaluations, and even data recovery. There are, increasingly, general practitioners entering the field at the bachelor's degree and postgraduate level with broad enough training to handle both pre-contact and post-contact period sites in Colorado. As universities in the state hire faculty specializing on post-contact sites, the personnel situation should continue to improve. To date however, the lack of historical archaeologists evaluating historical sites has affected evaluations of site significance and eligibility; if the researchers involved are not at least conversant with the historical archaeological literature, then the research potentials by which sites may be judged significant are unknown to them, and they are not equipped to determine potential significance.

A large category of sites with NRHP evaluations that should be revisited are those where significance and eligibility were based solely on historical architectural elements, without consideration of archaeological potential. Someone trained in historical architecture alone usually cannot evaluate the archaeological potential of a site, just as many archaeologists are ill-equipped to judge eligibility based on architectural integrity. In the course of research for this volume, Steve Baker notes that there are only 418 historical settlements of the Victorian period sites he considered that actually have historical archaeological component forms included as part of their formal site records. This is as compared to 9,538 such settlements that have been recorded at some other level, such as architecture (Lovella Learned-Kennedy, personal communication from the office of the SHPO with Steven Baker July 2004). Bonnie Clark and Kathy Corbett note similar conditions in Chapter 3. Another specific example is the large number of historical ranch sites at Fort Carson's Piñon Canyon Maneuver site. The architectural historians who wrote the report clearly state that their evaluations are only on the basis of architecture, and they explicitly note the need for separate, archaeological evaluations (Haynes and Bastian 1986). The DoD chose to ignore their advice for a number of years, but Fort Carson archaeologists are now addressing the problem.

In such cases, the sites that were evaluated as not eligible for NRHP status on the basis of architecture are more of a priority for reevaluation than are those that were positively evaluated for architecture. All should be revisited, but those sites with negative evaluations of eligibility based on an incomplete assessment are clearly in more immediate danger.

Such examples are not unique to Colorado. For his Kansas preservation plan, Lees observes that

the presence of standing buildings, abandoned or occupied, must not prevent the recording of the site of which they are a part. There is obviously little archaeological difference between an 1860s farmstead where the buildings were removed or destroyed ten years ago and an 1860s farmstead where the buildings are still standing and occupied. Recognition that the current condition of a site's architecture should not affect whether it is recorded will remove a serious bias in site survey (1988:101).

Poor or incomplete evaluation procedure is an issue that the OAHP in Colorado has actively addressed, for example, mandating archaeological as well as architectural evaluations for Colorado State Historical Fund projects that entail any kind of ground disturbance. However, this policy cannot address the backlog of incompletely evaluated historic period sites in the state, many of which are in need of reevaluation whenever the opportunities should arise to do so. The flexibility to change prior evaluations from official ones of ineligible based on architecture to eligible based on archaeology, when new data such as the archaeological integrity are evaluated, will be key to resolving this problem. Reevaluating and investigating incompletely evaluated sites might be a good direction in which to steer archaeology graduate students in need of master's thesis or doctoral dissertation projects. State Historical Fund grants through local agencies could provide support for such projects.

I am informed by a colleague at the College of William and Mary that in places such as Massachusetts and Virginia, in some ways the birthplaces of historical archaeology, there are people with advanced degrees in the subdiscipline who are painting houses for a living; there are more graduate students trained in post-contact archaeological work than there is work, even in this richly historic region. In Colorado, the situation is quite the opposite. We have a mere handful of people trained in the archaeology of the historic period and equally enormous amounts of work to do. There is no doubt that people who are not primarily trained in the subdiscipline will, by necessity if not always personal desire, continue to record and explore historical sites in Colorado. An impressive number of Colorado archaeologists who were not trained primarily as historical archaeologists have become, through on-the-job training, quite adept at it. As more people train in academic programs within the state, or as more trained people move in from out of state, perhaps the situation will continue to change and both the OAHP and CRM firms can all have such personnel on staff. In the same way firms advertising for crew chief-level employees make expertise on Plains sites, Rocky Mountain sites, Southwestern sites, or similar a requisite, so should they advertise for some such staff with expertise in historic period archaeological research in the western United States. Some firms have already done so.

Historical archaeology is a holistic practice, asking questions grounded in historical, ethnohistorical, archaeological, and other disciplinary approaches. It combines and uses all kinds of sources of information about the past – from letters to landscapes, from buttons to pollen cores – to contextualize and interpret past behaviors, identities, and events in a more holistic and democratic manner than can result from the study of documents alone. It is also a branch of anthropological archaeology that always excites public interest. This interest can spark strife at times, as in the case of the African American Burial Ground described previously. Much more often, the information is accepted as a fascinating addition or surprising counterpoint to what people learned in their high school history classes. The Colorado public, like the wider national public, is consistently enthralled by the past of the American West and those who had made their lives here. Historical archaeology has great potential to augment public support for archaeology and heritage work in the state in general.

The authors herein have enjoyed and very much appreciated the animated interest in and support of this effort to create a synthetic volume for Colorado historical archaeology from federal, state, academic, and private CRM personnel. Such interest is a sign of continuing trends and improving times for protection and exploration of historical archaeological sites in Colorado. It is to be hoped that this volume can go some way toward meeting the needs of such professionals, providing insight on both current directions and potential ones for research in the state.

## **CHAPTER 2. PROTOHISTORIC AND HISTORIC NATIVE AMERICANS**

**Steven G. Baker, Richard F. Carrillo, and Carl D. Späth**

### **DESCRIPTION AND BACKGROUND**

#### **Definition of Theme and Chapter Goals**

The theme of this chapter is the protohistoric and historic archaeological contexts of Colorado's Native American peoples (ca. A.D. 1540-1880s). Steven Baker is the primary author. He wrote this introduction and the section on the Ute People. Richard Carrillo, with help from Baker and Carl Späth, wrote much of the section dealing with the Great Plains peoples. Baker and Späth worked together to produce the sections on the Shoshone and Navajo as well as the management and research considerations.

This chapter emphasizes Colorado's Ute speakers because they were the only indigenous people to reside within the state from prehistory into their Late Contact phase. Application of the direct historical approach to the Ute ancestry is beginning to show some success and an emergent archaeological baseline now exists for them. The Utes were among Colorado's nineteenth century equestrian "Late High Plains Hunting" peoples (Hanson 1998:96-97). Except for them, all of these peoples, including Arapaho, Cheyenne, and Comanche, are believed to have come into the state as equestrian groups well into the post-contact period. Despite rich ethnologies and ethnohistories, as well as having played prominent roles in Colorado history; they are at this time believed to lack both ethnic hallmarks and time depth in their ephemeral archaeological records. For these reasons opportunities for meaningful archaeological study of their presence in the Centennial State have yet to be realized. With the exception of recent limited work at Black Kettle's 1860's Cheyenne-Oglala Village on Pawnee Fork, just over the border in Kansas (Jones 2002), there is essentially no database for any of these late "Plains Nomads" who immigrated into Colorado (Hanson 1998; Douglas Scott and W. Raymond Wood, personal communications with Steven Baker 2005; Waldo Wedel, personal communication with Steven Baker ca. 1992).

The chapter picks up where discussion of the prehistoric period ended in the five "Prehistoric Contexts" previously prepared by the Colorado Council of Professional Archaeologists (CCPA) (Gilmore et al. 1999; Lipe et al. 1999; Martorano et al. 1999; Reed and Metcalf 1999; Zier and Kalasz 1999). Although they were primarily devoted to the prehistory of various regions of the state, each of these important and well-done volumes did devote at least some coverage to "protohistory" and the "historic post-contact period" up to as late as about A.D. 1880. The many authors of the prehistoric contexts did, however, display varying levels of comfort with and understanding of these concepts as memorialized in those individual volumes. Because they are so critically important to the future course of Colorado archaeology, one goal of this chapter is to discuss, clarify, and standardize basic terms used by archaeologists and ethnohistorians who routinely deal with the protohistoric and historic portions of American Indian culture history. These concepts simply must be clarified here in the Historical Archaeology Context or they never will be (Baker 2005a; Baker et al. 2005). Pressing needs involved in gaining improved archaeological understandings of Colorado's historic Native American peoples are also considered and evaluated in terms of archaeology generally as well as in relation to the basic criteria for National Register eligibility. All of these considerations are set within an

ethnohistorically driven and, where possible, archaeologically bolstered taxonomic model of the general and repetitive phases in American Indian culture history (Leacock and Lurie 1971). Overall, the primary goal of the chapter is to present an up to date, useable, and useful context for the study of Colorado's protohistoric and historic Native Americans.

## What is Protohistory?

When Europeans or other nonindigenous peoples first entered the North American mainland, the prehistoric period of the indigenous Native American populations technically ended. Despite this, the historic post-contact period did not commence immediately or evenly throughout the continent. This time frame between history and prehistory is commonly referred to as *protohistory*. The protohistory of some peoples was sometimes quite short, while for others it could last for some time. Some societies were quickly and radically transformed during this time while others were little affected by the presence of a few Europeans somewhere on the continent. Perhaps the most immediate of the more devastating changes were the introduction of new diseases that wiped out entire populations (Ramenofsky 1987; Swagerty 2001:257-258) and escalation of the Native American slave trade. Although forms of slavery seem to have been indigenous among some Native American societies, the practice was radically transformed by the new markets that accompanied the colonization of North America. The peoples in and around Colorado were not spared from this (Gálvez 2002; Kelly and Fowler 1986; Kenner 1969; Sánchez 1997; Schroeder and Stewart 1988; Swagerty 2001). The trade in Indian slaves not only contributed to population declines; along with other trade-related competitiveness, it encouraged internecine warfare, dislocated populations, and forced a range of entirely new behaviors. These behaviors included new and vigorous postures of elusiveness and defense.

While it is possible, and perhaps even likely, that the first transoceanic contacts had occurred prior to the 1500s, the first contacts recorded in the area of the western United States were those of the oft-described Spanish Conquistadores when they first ventured north following the conquest of Mexico in the sixteenth century (Bolton 1991 [1949]; Flint and Flint 2003; Simmons 1979:178-180; Swagerty 2001:256). Despite some initial fleeting face-to-face contacts by Pueblo and Plains groups, these early ventures had little if any impact on most of the other Native Americans who did not have such contact. This lack of impact appears to have particularly been the case for groups in Colorado. These early contacts among the pueblos and out on the Plains have, however, commonly been relied upon by archaeologists dealing with these areas (Clark 1999a; Gunnerson 1987; Nelson et al. 2001; Wilcox and Masse 1981) to demarcate the end of prehistory. These first contacts mark the earliest point of arrival of the protohistoric portion of the culture history of most of the regional Native Americans. This, in turn, ultimately gave way to the historic post-contact period.

The term *protohistoric* probably stems from early twentieth century sources such as ethnohistory, linguistics, or even biological anthropology, in which *proto* appears in varying forms and uses, including by other disciplines such as biology (Deward Walker, personal communication with Steven Baker 2004). W. Raymond Wood of the University of Missouri (personal communication with Steven Baker 2004) suggests that it was most likely William Duncan Strong who first introduced the concept to Plains archaeology in his *Introduction to Nebraska Archaeology* (Strong 1935). Although Strong uses the term readily in his now-classic volume, he does not attempt to define it and seems to presume that everyone who might read his book already knows what it meant.

Protohistory, as used by a legion of archaeologists for at least a century (see Fontana 1965a:61), refers to archaeological assemblages that contain European-derived goods but for which there is no written record or other evidence of direct face-to-face contact between the Native American occupants and Europeans. At its heart the concept of protohistory implies no specific time frames. Rather, it implies that after their initial acquisition through face-to-face contact between a Native American and a Spaniard, for example, European or other nonnative goods were ultimately conveyed to other various Native American peoples nation to nation via their own trade networks. By any definition, protohistory does not refer to any prehistoric time frames or the documented portion of any group's historic experience. The protohistoric portion of a group's culture history is followed by the post-contact historic period. The terms *historic* and *post-contact* are somewhat interchangeable and imply that there is not only written documentation of

individual groups but direct face-to-face contact between Native Americans and Europeans, or Euroamericans as it may have been. This period is the time in which indigenous societies were commonly subjected to entirely new forms of stress with resulting radical and rapid culture change. At a practical level in ethnohistory, protohistory means 1) that groups can learn of one another (e.g., the Spanish know there are Utes out there and the Utes know there are strangers settled in the region) yet they have yet to meet face-to-face and 2) that there is as yet no meaningful written documentation specifically about the native groups. No one has yet met them or written about them. Until someone writes about a group, it is still protohistoric.

In the areas surrounding Colorado, the term protohistory has generally been applied according to standard archaeological parlance. For the Southwest Wilcox and Masse (Wilcox and Masse 1981:1) described it as the period "between prehistory and the ethnographic present." Linda Cordell (1989:18) ended her "protohistoric period" in about A.D. 1700 and viewed it as intermediate between the prehistoric and Spanish Colonial periods. The concept is solidly represented in volume 13 of the *Handbook of North American Indians's* treatment of the Plains (DeMallie 2001). It is not a term that has been commonly used at all in the Great Basin, as indicated in volume 11 of the *Handbook* (D'Azevedo 1986), apparently because the archaeological focus in that area has always been on the prehistoric cultures. Joel Janetski (1991:xi; 1994:176) appropriately recognizes the applicability of the term for the Ute cultural context in Utah. The late Omer Stewart, an ethnologist who in part specialized in Ute studies, did not seem to invoke the concept of protohistory in his writings (see also Callaway et al. 1986; Stewart 1966a, b, 1971, 1973). It is noteworthy that only a few of the various contributors to the original symposium on the archaeology of the Eastern Ute used the term in that important collection of nascent writings (Nickens 1988a). George Frison (1978:62) and James Gunnerson (1987:97) have relied on it for Wyoming and the central High Plains. Swagerty considered the term in his cogent discussion of Plains culture history (Swagerty 2001:256). Gunnerson's loose reliance (1987:113) on the more traditional definition used on the Plains has been carried into his Colorado-related discussion, particularly in regard to the Dismal River Aspect. Surprisingly, Bill Buckles (1971) does not appear to have ever mentioned the term protohistoric anywhere in it. Some very considerable variations of protohistoric were offered among the five volumes of prehistoric contexts prepared by the CCPA (Gilmore et al. 1999; Lipe et al. 1999; Martorano et al. 1999; Reed and Metcalf 1999; Zier and Kalasz 1999).

It is not appropriate to view all of the individual groups or bands that spoke the same language as having entered either their individual protohistoric or post-contact frames in lock-step unison (Baker 1988, 2003b, 2004a, b). The primary "tribes" that were in place in Colorado at the end of prehistory were nothing more than groups who spoke the same languages, such as Ute or Apache. These respective large linguistic groups have traditionally been called tribes in about every context (Helm 1968). They have uncritically come to be viewed as large social and political structures that acted in a unified manner. This view has long been a common misconception in regard to the Ute in particular. Although these widespread language groups occupied quite large areas, such as most of western and eastern Colorado, respectively, they were composed of multiple smaller groups of limited populations. These smaller groups are commonly called *bands*. In this region these groups lacked any overarching social or political authority. For the Utes specifically, each band would still have recognized its own identity, territory, and interests (Baker 1991c, 2003b, 2004b, 2005b). These groups were based on kinship, and their nature has been the subject of considerable discussion among ethnologists (Ronaasen et al. 1999; Shapiro 1986; Shimkin 1986; Walker 1999).

Colorado archaeology involves three different culture areas; Plains, Southwest and Great Basin. Research has been conducted in all three according to quite differing philosophical and taxonomic approaches. Generations of students have been trained as Southwestern, Great Basin, or Plains archaeologists. Colorado's historic peoples, and particularly the Ute speakers, have largely been archaeologically disenfranchised because their territory was only marginal to these areas of primary archaeological interest (see Baker 1995a; Buckles 1988; Nickens 1988a). There is thus very little tradition of archaeological work among the protohistoric and historic time frames in Colorado. On the Great Plains, for example, the protohistoric and historic time frames have long been intensively investigated by using the direct historical approach (Steward 1942) to which William Duncan Strong (1935) gave both respectability and durability (Wedel 1982:150-155). The direct historical approach simply means working to understand the archaeological record of specific peoples by working from the documented ethnographic present back into

time. Although it did not originate on the Plains, the approach was responsible for successfully connecting archaeological cultures to a host of ethnographically documented peoples from Texas to Canada. These peoples included the Pawnee, Arikara, Mandan, Wichita, and perhaps the Plains Apache among others (Wedel 1982:162). On the Plains, specific Indian villages, such as those of the Pawnee or Arikara, were well documented and then investigated. In Colorado there are remarkably few documented and long-occupied Native American settlements suitable for investigation with the direct historical approach.

Colorado's protohistoric and historic archaeological cultures are quite ephemeral because the populations were not at all large or sedentary. Conducting archaeological research on Colorado's Native Americans in these time frames is accordingly particularly difficult, and some have questioned whether it is even possible to do so for the Ute in any detail (Baker 2003a:24; Jennings 1978:325; Reed and Metcalf 1999:147-150). The archaeology of the equestrian immigrants such as the Cheyenne, Arapaho, and Comanche is also particularly fleeting and hard to deal with (Buckles 1968; Cassells 1997; Clark 1999a; Hanson 1998; Nelson et al. 2001). The problem may be only somewhat better for the semi-sedentary indigenous Apachean speakers who, despite challenges to this identity (Gulley 2002; Opler 1983), are generally believed to be represented in the Dismal River Aspect on the Eastern Slope of Colorado (Clark 1999a:312-322; Gunnerson 1960:141, 227-235; 1987:97-117; 2001:239-242; Foster and McCollough 2001:926-938; Nelson et al. 2001:111-120; Tucker Jr. et al. 2005).

At the advent of routine cultural resource management (CRM) work in the 1970s, studies of the Ute archaeological context were very much still in their infancy. The only guidelines for investigators, other than those of the Huschers (Huscher and Huscher 1939a), were those of Bill Buckles (1968; 1971), and eventually Buckles and Buckles (1984). To date there have been few other guidelines to assist them, and there has been some considerable ongoing discussion about how to go about such work (Baker 1988, 1991c, 1993a, 1996b, 2003a, b, 2004b, 2005b) (Buckles 1988; Horn 1988, 1999; Nickens 1988a; Reed 1984, 1988, 1994; Reed and Metcalf 1999; Reed and Gebauer 2004). This context document was expressly planned to provide such assistance to students and nonspecialists from the professional perspectives of historical archaeology and ethnohistory. For the Utes in particular this chapter is an attempt to answer Baker's (1995a) and Nickens's calls (1988a:4), as well as those made by Buckles (1971:218; 1988) and Jennings (1990), for Colorado's archaeologists to move Ute archaeology beyond the first halting steps attempted in 1988 at the first symposium on Eastern Ute archaeology (Nickens 1988b) and allow it to take its rightful place alongside the better known prehistory of our state.

Until recently only a very few archaeologists had even attempted to utilize the direct historical approach in Colorado with any sustained vigor. The first to do so were Betty Holmes Huscher and Harold Huscher who worked as a team in the late 1930s and early 1940s studying the Ute and what they perceived to be a former Athapascan presence on the Western Slope (Baker 1995b; Cassells 1997; Huscher and Huscher 1939a, b, c, 1940, 1942, 1943; Huscher 1939, 1954). Harold Huscher briefly studied with W. D. Strong at Columbia University and hoped to continue his direct historical work with Colorado's Utes for his dissertation subject (Huscher 1954). Bill Buckles (1968; 1971) followed a direct historical approach to the Ute which was similar to that which had been used by the Huschers before him.

While Buckles took a direct historical approach (Steward 1942; Wedel 1982) to the subject of Ute archaeological identity, he also probed deep into prehistory. The result was a mixed contribution as his historic Ute investigations were overwhelmed in his massive dissertation by the tediousness of his considerations of the prehistoric data. Although his work was the basis of most Ute studies until the past few years, Buckles was not successful in directly linking the historic Ute archaeological culture with a prehistoric one (Buckles 1971:iv; Cassells 1997:275-277) or establishing the time depth of the Ute presence in western Colorado. Buckles may well have been seeking something that simply did not exist. The Utes quite possibly arrived relatively late in time, and there thus might actually be no appreciable time depth, as Buckles was seeking, for evidence of these peoples presence here. That may well be why such evidence with any very convincing time depth has to date never been satisfactorily demonstrated by anyone.

The Huschers and Buckles pioneered the concept of the direct historical approach in relation to the Colorado Utes. Although a number of archaeologists have on occasion dealt with Ute matters (Nickens 1988a), few have focused heavily on Ute issues. The early direct historical approaches of the Huschers and Buckles have been carried forward by the lead author of this chapter through extensive study of the local historical archaeology and ethnohistory of western Colorado north of the San Juan Mountains. Most of this work has been accomplished over a period of about thirty years on the Uncompahgre Valley Ute Project (Baker 1991c, 2002d, 2004a, 2005b) and some years of sustained work on the Douglas Creek Arch near Rangely in northwestern Colorado (Baker 1991a, 1993b, 1995c, 1996b). Historical archaeologist Jon Horn has also advocated the use of the direct historical approach on Ute archaeology and has commenced some small case studies at Late Contact phase sites near Montrose (Horn 1988, 1999; Horn and Greubel 1997). In addition, Alan Reed has long and ably studied the prehistory of western Colorado and the Utes (Reed 1994). Although nearly all of his work with the Dismal River components took place outside of Colorado, Gunnerson (1960; 1987; Gunnerson and Gunnerson 1988) also relied on the direct historical approach to link the Dismal River aspect with the Plains Apache. Gunnerson has long maintained that such components are present in Colorado (see also Wood 1971).

## **The General Taxonomic Phases of American Indian Culture History**

### **THE GENERAL TAXONOMIC MODEL**

A taxonomic model of the repetitive phases of Native American culture change is used herein to help order the historical archaeological data for each of Colorado's native peoples. This model is rooted in a broader ethnological model developed by a group of the world's leading ethnologists of the American Indians. These scholars all agreed on the existence of repetitive patterns of culture change that North American Indian peoples had individually experienced after the close of prehistory. This consensus was summarized in a taxonomic model in the "Introduction" by Eleanor Leacock to Leacock's and Nancy O. Lurie's still most useful volume, *North American Indians in Historical Perspective* (Leacock and Lurie 1971).

The Leacock model recognizes multiple phases of culture change and is rather similar in approach to the thinking of, among others, anthropologists Fred Voget (1967) and Charles Hudson (1967) and archaeologists Marvin Smith (1987) and J. Daniel Rogers (1990). As in the present usage, Smith (1987) and Rogers (1990) recognized multiple phases that could be correlated with archaeological patterns. In a similar manner adaptations of the Leacock model have been relied upon previously in ordering the protohistoric and post-contact cultural landscape of South Carolina (S. G. Baker 1974; Baker 1975, 2003c). It has also been adapted for archaeological use by modeling historic culture change relative to some of Colorado's specific Ute bands as well (Baker 1988, 1991b, c, 1993a, 1999b, 2005a, b; also see Reed and Metcalf 1999:147-150). That model has been updated for use herein. Baker's Ute model, as well as others, is discussed in this chapter and tested against some of the regional archaeological data.

The general Leacock model recognizes five sequential phases of American Indian history that can be discerned to have been repetitive across America despite the "variety of historical relations between Indians and newcomers, which unrolled over many centuries" (Leacock 1971:9-12). Leacock stresses that the phases are, at times, far from clear-cut and vary greatly in length and specific features from area to area and from group to group. The culture histories of each people are at times too complex to be neatly summarized and must be synthetically tailored to the specific culture history of each just as was done by Marvin Smith (1987) for the Creek, Daniel Rogers (1990) for the Arikara, and R. P. Davis et al. (2004) and Baker (1975) for the Catawba. This chapter uses this perspective. The articles in the Leacock and Lurie volume (1971) do, however, delineate five general and different types of Indian-white relations. These provide a focus on "some major differences in the kinds of problems with which the Indians and their leaders had to cope at various times during the past four and three-quarters centuries" (Leacock 1971:9). As shown herein, it is possible to correlate both observed and reasonably predictable changes in the archaeological cultures associated with these individual phases of culture history.

Phase I in the general Leacock scheme for all of North America (1971:vii-viii, 9-12) is that of the Late Pre-contact. This is followed by the Early Contact Phase II, which is marked by the development of contact-traditional cultures in societies that were still basically autonomous and were not having their territories directly threatened. This phase enfolds both the protohistoric and early portions of the historic periods and may include hostilities. Phase III is the Middle Contact phase of Competition and Conflict wherein there are overt hostilities and threats to societies' land base and political autonomy. Phase IV is the Late Contact Phase of Administrative Stabilization involving reservations or comparable situations, and it may be marked by continuing threats to Indian land and community identity. Finally, Phase V is the phase of Emergent Reintegration. This phase involves Pan-Indian or nationalistic aspects in reference to modern Indian interest and self-determination in relation to the encompassing nation. Phase V is not considered here. Except for rare cases, there are now few practical and politically appropriate archaeological issues to investigate in this phase.

Group-specific modeling for Colorado's protohistoric and historic Native American populations is undertaken herein as a necessary fundamental step in developing taxonomies for use in ordering the archaeological data. Such a step, long considered fundamental in prehistoric studies (Taylor 1948; Willey and Phillips 1962), is believed to be critical in enabling archaeological studies and subsequently liberating the best of the potentials offered by Colorado's individual historic archaeological cultures (Baker 2003a:24-27; 2005a). At this time this involves adaptation of only the first four of Leacock's phases.

## **PHASE I: LATE PRE-CONTACT PHASE STATEWIDE**

As a general statement Colorado's Late Pre-contact phase ended with the appearance of the Spanish Conquistadores on the Plains in 1540-1541 (Bolton 1991 [1949]; Simmons 1979:178-180; Swagerty 2001:256). This event technically ushered in the state's protohistory within Leacock's Early Contact Phase II even if it, as a single event, probably had little if any impact on the Native American populations here. The archaeological cultures of the Late Pre-contact Phase do, however, serve as the baselines against which all subsequent archaeology in Colorado must be compared and measured. They are baselines despite the fact that they were not static and may well have been constantly evolving through late prehistory.

In the mid-1500s Colorado's Native American populations, as now understood, consisted of two main blocks of people (Figure 2). On the High Plains east of the Continental Divide are believed to have been the Apachean-speaking Plains Apache (Clark 1999a; Foster and McCollough 2001; Gunnerson 1987, 2001; Gunnerson and Gunnerson 1988; Opler 1983; Swagerty 2001). These people have long been believed to be represented in the archaeological components that make up the Dismal River Aspect (Gunnerson 1960, 2001; Wood 1971).

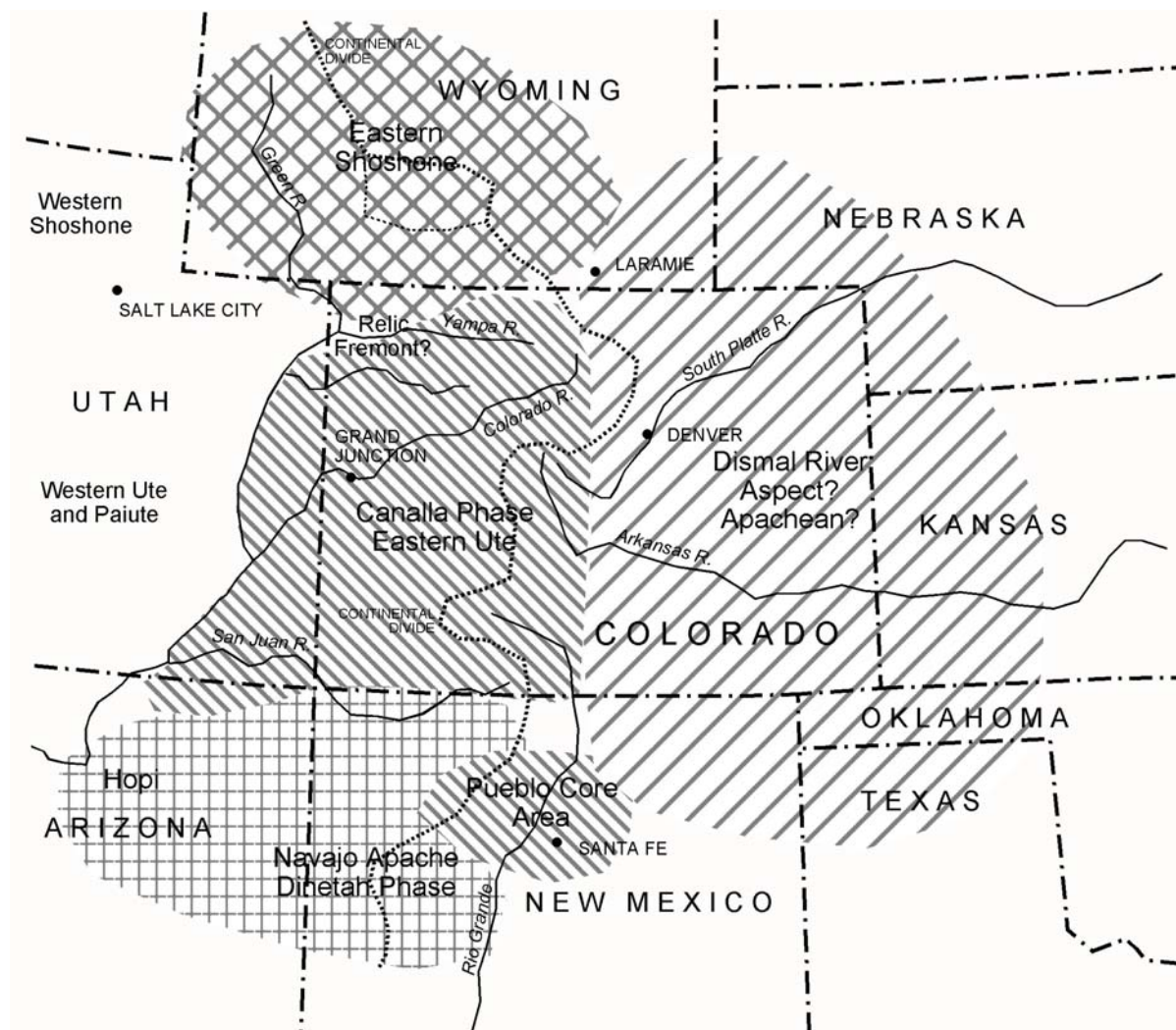
West of the Continental Divide were the Numic-speaking Ute, or more specifically the various bands of Omer Stewart's "Eastern Ute" (Callaway et al. 1986:339; Stewart 1971, 1973). At great time depth, if actually present, these people may be archeologically represented by what was once referred to as the Desert "techno-complex" (Jennings 1978; Reed 1984), or Buckles's ambiguous Uncompahgre Complex (1971). As prehistorians, Alan Reed and Mike Metcalf have done quite a good job of discussing what is known of the very late pre-contact Ute baseline under the term of *Canalla phase* (Reed 1988, 1994; Reed and Metcalf 1999). Reed and Metcalf have unfortunately described this otherwise good baseline under the taxonomic term of *Protohistoric era*, which contains two phases, the Canalla and Antero. As discussed herein there are weaknesses with both the definition and content of the protohistoric and later portions of this taxonomy.

In addition to the Plains Apache, likely of the Dismal River Aspect, and the Western Slope's Canalla phase Utes, some other peoples resided in and about the borders of Colorado in late pre-contact times. There were, however, apparently none of the so famous puebloan peoples typical of the Four Corners region remaining by that time. They all appear to have abandoned Colorado and emigrated southward some two or three hundred years previously. There was, however, a boundary area in the vicinity of the state's southern border and in and about the San Juan River in northern New Mexico. This generalized area (Figure 2, below) demarcated the territories of the Navajo Apache and the Ute with the latter living primarily to the north.



There is some considerable debate over where the Navajo and Ute were residing relative to this area at various times (Brugge 1983b; Schaafsma 1999, 2002; Snow 2006; Towner 2003; Towner and Dean 1996; Wilshusen and Towner 1999; Wilson 2003). Archaeologists love to draw precise lines on maps to show distributions of archaeological cultures and ethnic groups. It is, however, seldom quite so simple. It appears that instead of fine lines that marked the borders of territories, there were actually wider boundary areas or perhaps better said, "no man's lands." These areas can be between big language groups, such as the wide main chain of the Rocky Mountains between the Ute and presumed Apachean speakers and the Navajo and Ute boundary. Also, if one looks closely at the historical records, such boundary zones can be detected between individual bands of a group, such as for Colorado's Ute speakers (Baker 1994, 2003b, 2004b, 2005b).

There appears to have been another boundary zone along the Yampa River in the more northerly part of the state. This zone seems to have separated the Ute territories from those of their linguistic cousins, the Shoshonean speakers of Wyoming (Baker 1996b:1/24-27; Reed 1994; Reed and Metcalf 1999:146). Although the presence of this boundary area in the northwest part of the state has long been recognized, there has been virtually no archaeology directed to study of the topic. There is thus no obvious body of literature addressing issues of Ute and Shoshonean occupations within it. Additionally, there is some limited but compelling evidence that there may have been some descendants of the old Formative Stage Fremont peoples surviving in the rugged northwest part of the state (Baker 1995c:8/10-18; Creasman and Scott 1987; Reed and Metcalf 1999:146). The general disposition of these late pre-contact peoples and their archaeological cultures are shown in Figure 2.



**Figure 2.** The general cultural landscape ca. A.D. 1540-1600.

## THE UTE

Ethnologist Omer Stewart divided the Ute-speaking peoples into Eastern and Western Utes (Stewart 1973, 1976) on the basis of his perceptions of the timing with which they adopted an equestrian lifestyle. Though the nature of this distinction might easily be debated, the Colorado Utes are Stewart's "Eastern Ute." The Eastern Ute occupied a huge area of western Colorado and extreme eastern Utah and were major players in the state's early history. The Utes may well be relatively recent arrivals in Colorado, but it is nearly certain that they were present here at about the close of prehistory and they clearly remained here until at least the later nineteenth century. Some, of course, are still here today. As Colorado's only indigenous population still surviving within the state, they are very closely identified with Colorado in the public mind. Archaeological resources associated with this occupancy must be regarded as being quite valuable to the cultural heritage of the state and the Ute people themselves (Baker 1995a).

### Taxonomic Considerations for Historic Ute Archaeology

#### THE ETHNOLOGICAL/ETHNOHISTORICAL RESEARCH BACKGROUND

Other than the work of Bill Buckles (1971) and the more recent efforts of this writer (Baker), there have to date been no other ethnohistorical and ethnological works on the Eastern Ute specifically designed to support archaeological studies. The broader ethnological works which have been available include those of Jorgenson (1964; 1972), M. K. Opler (1963; 1971), Schroeder (1965), Stewart (1966a; 1966b; 1971; 1973), Anne Smith (1974), Steward (1970), and that of Callaway et al. (1986). Although these works were never designed to guide archaeological efforts, those of these scholars, and particularly those of Omer Stewart, have served as the ethnological baseline that has supported nearly all archaeology of the Eastern Ute. They remain critical and basic source materials for studies of Ute ethnohistory, ethnology, and archaeology. Stewart never published his primary ethnological work on either the Eastern (1973) or Western Ute (1976). These exist only in hard-to-obtain manuscript form. He had prepared these documents for inclusion in volume 11 of the *Handbook of North American Indians* (D'Azevedo 1986). Selected portions of these works were ultimately folded into the Ute chapter in that volume by Callaway et al. (1986).

Linguist James Goss (1999a) is an action anthropologist (Lurie 1973) and has offered a provocative reevaluation of historic Ute groups, particularly as they were interpreted by Julian Steward (1938). Goss takes issue with Steward's and others' views because they are, to his thinking, contrary to the ways in which Numic speakers view their own identities. He sees the anthropological interpretations of the names and identities of the various Ute peoples as stereotypes, which are products of a Spanish Colonial political agenda (1999a). He also believes that the Utes have been marginalized in anthropological writings and that their adaptation to mountain living should be treated as a cultural focus rather than a marginal phenomenon (Goss 1999b). Regardless of whether he is right or wrong, Goss, too, is critical material for anyone who wishes to understand the complexities and limitations involved in the historical differentiation of Ute groups by anthropologists and the manner in which some Utes tend to view themselves. There are some vital issues involved in what one Colorado ethnologist appropriately refers to as the "rolling identities" of the various Ute and Paiute groups (Richard O. Clemmer-Smith, personal communication with Steven Baker 2005).

Much of Omer Stewart's research was accomplished to provide expert legal testimony before the Indian Claims Commission in cases such as that of the "Unitah Utes of Utah v. the United States of America" (Clemmer and Stewart 1986; Ronaasen et al. 1999; U. S. Indian Claims Commission 1954). The specific demands of providing successful testimony intended to assist Native Americans in the legal arena can have a dramatic effect on ethnological perceptions. Stewart's work was not spared from such influences. To prevail in court on behalf of the Utes, he had to demonstrate that the Ute groups, when the U.S. government began political dealings with them, had been organized at a high enough political level to hold concepts of

territoriality and land ownership. An opposite argument was presented by the defense, which relied heavily upon the testimony of Julian Stewart, an ethnological giant who had once been Stewart's professor (Clemmer 1992; Clemmer and Stewart 1986; Ronaasen et al. 1999). Stewart's task was to dismantle Stewart's opinions and demonstrate that the Utes were not so organized and had held no such concepts (Ronaasen et al. 1999; Shapiro 1986; Walker 1999). The debate over the nature and evolution of Ute bands and their relationship to geographical territories was central to the legal argument, and Stewart's opinions prevailed and helped to settle the court case in favor of the Utes (U. S. Indian Claims Commission 1957).

The final settlement was based primarily on Stewart's having proven to the court's satisfaction, by way of ethnographic interpretation of historical data (see Wood 1990), that the individually named bands had once existed as political units and occupied substantial individual territories, which had been unlawfully taken from them by the United States. These scholars (Stewart and Stewart) apparently first really challenged each other in the courts and then academically only on a secondary basis from views they had each championed in the legal arena. This context was infused with the scholarly pride of each of these great ethnologists. These dynamics must never be overlooked by anyone who might attempt to achieve some understanding, balance, and level of comfort with Stewart's and Stewart's opposing lines of thought regarding the nature and existence of Ute bands and how these can influence archaeological perceptions. To win the case for the Utes Stewart had to put forth an image of common political interests and cooperation among the Ute bands within the historic context, and these probably in retrospect did not really exist. This image was critical in demonstrating that "named regions of the Basin [including those of the Eastern Ute] constituted bounded territories communally owned by the peoples living within their borders" (Shapiro 1986:121). A detailed look at the original historical documentation shows that things may not have been quite as neatly ordered as Stewart projected.

The senior author has picked up the ethnohistorical research where Stewart in particular left off (Stewart 1966a, b, 1971, 1973). Rather than focus on the Ute or other Great Basin groups in a broad ethnological sweep as Stewart did, this work has focused on the Uncompahgre and Tabeguache Ute bands specifically through the Uncompahgre Valley Ute Project. This ongoing research curve was expressly designed to prepare an ethnohistorical baseline (Baker 1991a, 2002c) to help guide archaeological study of the Utes within long range research strategies such as advocated years ago by Stuart Streuver (1968). This work has begun to demonstrate that there are some significant misconceptions promulgated in the writings on the Eastern Ute. In Stewart's case these misconceptions become apparent largely because of the current availability of quite important historical documents unavailable to him. These documents have also not yet been relied on by other scholars of the Ute. Among these are the 1765 diaries of Juan Rivera (Baker 1994; Rivera 1968 [1765]; Sánchez 1997), who pioneered part of the route later followed by the Fathers Dominguez and Escalante in 1776. Another major source is the "Letters [and miscellaneous records] Received by the Colorado Superintendency of the U.S. Office of Indian Affairs, 1863-1880" (U. S. Office of Indian Affairs 1863-1880). The records of the U.S. Army's Adjutant General's Office (U. S. Army 1871-1880) are also now available on microfilm from the National Archives. These very useful government documents are not in Stewart's bibliography of Ute source materials (1971), which leans heavily to the records of the Southern Utes.

It is not uncommon to find, with some peeks at the original data, that there is often no evidence to support some earlier views that have long been accepted as gospel. Among the now more questionable views that are pivotal in Eastern Ute ethnohistory and especially critical to archaeological studies are the interpretations of Francis Haines (1938a; 1938b) on the Ute involvement in the Pueblo Revolt and the initial trade and dispersion of horses throughout the western United States. In addition, problems exist in Schroeder's (1965) absolute guesswork at individual Southern Ute band identities and territories, along with some of the original Ute band designations and territories advanced by Stewart (1966b; 1971; 1973) and by Callaway et al. (1986).

## TAXONOMIES FOR UTE CULTURE CHANGE AND ARCHAEOLOGY

Research on the Ute archaeological tradition is about to pass from its infancy into its youth. If it gets off to a bad start, it will not grow well and scholarly misconceptions and inaccuracies will take root, be perpetuated, and prove harder and harder to eradicate from the database. Whatever model is relied upon by the profession, from this point on it must draw from all available source materials and be rooted in ethnography and ethnohistory and must be testable. It must be capable of guiding research for many, many years. The basics of the ethnohistory and historical archaeology and the fundamentals of the prehistoric portion of Reed and Metcalf's Canalla phase (1999), despite lingering questions of the old wood problem on their date ranges, have been well thought out and supported. They are understood by most archaeologists and will likely not shift much. The Canalla phase can indeed provide the root from which to grow a more detailed perspective on the prehistoric Ute culture. Colorado archaeologists have moved that far from the first Symposium on the Archaeology of the Eastern Ute held in Grand Junction in 1988 (Jennings 1990; Nickens 1988b).

Bill Buckles likened that important symposium "to the first day of practice for a team sport or the first day of boot camp" where everyone was still struggling with the fundamentals (Buckles 1988:227). In his review of the publication from that symposium (Nickens 1988b) Calvin Jennings (1990:862) saw it as "the critical first step on a long and unreasonably delayed journey into the recent past of the region." The protohistoric and historic Ute archaeological and historical record still appears to pose some problems for some Colorado archaeologists (Baker 2005a; Baker et al. 2005). For some years now, the kind of taxonomic model to use in ordering elementary archaeological data has been a point of discussion (Baker 1988, 1991c, 1993a, 1996b, 2005a) (Baker et al. 2005; Buckles 1988; Reed 1988; Reed and Metcalf 1999).

The few taxonomic models thus far proposed for use in the study of the archaeological tradition of Colorado's Ute people are of two types. The first involve simple two-stage divisions (Buckles 1971; O'Neil 1993; Reed and Metcalf 1999). The second are early versions of Baker's multiple phase division used herein and Reed's original three-stage model (1988), which he has since abandoned. The first Ute model was proposed by Bill Buckles (1971) in his massive dissertation resulting from the Ute Prehistory Project. The first of his two divisions was the Camel Back phase, which he thought represented the late and fully prehistoric portion of the tradition. The time frame he proposed for this phase was A.D. 1300-1500. Buckles's Camelback phase was followed by his Escalante phase, which covered the entire protohistoric and historic portions of the Ute archaeological record up to 1880. Although he started it a little early, but at the approximate time of ca. A.D. 1500, Buckles's Escalante phase recognized no further subunits or differences in the Ute archaeological tradition. He held this belief despite the fact that this nearly 400 year span was known to have witnessed dramatic and rapid changes in Ute culture that should be reflected in their archaeological record (Buckles 1971; Huscher and Huscher 1939a; Huscher 1954). Stewart had already emphasized the pre- and post-horse cultural contexts in his important early article on Ute culture change (1966a). Although the Huschers recognized the presence of the historic Ute components, they proposed no particular taxonomy to deal with them. In addition to Buckles, Baker (Baker 1988:159-160; 1991b:76-83; 1991c:III/3-10,VI/62-72; 1993a; 1996b:5/8-11; 2003a, 2005a), Reed and Metcalf (1999:148-151) O'Neil (1993), and Reed (1988; 1994) have all proposed different taxonomies for dealing with the protohistoric and historic portions of the Ute archaeological tradition.

Alan Reed and Steven Baker offered their first taxonomic models for Ute archaeology at the 1988 symposium and were both critiqued rather harshly by Buckles (1988). Reed's initial offering evolved into the two-phase model of the Protohistoric era, which he and Mike Metcalf built upon in their prehistoric context (1999) for the Northern Colorado River Basin. Baker's multiphase model has also evolved since that time. In advancing their model Reed and Metcalf (1999) critically reviewed and dismissed Baker's multiphase model along with the other two-stage models of Bill Buckles (1971) and Brian O'Neil (1993). The Reed and Metcalf model is currently being used by some local investigators who are active in Ute studies (Greubel 2001; Greubel and Cater 2001; O'Neil et al. 2004; Reed and Metcalf 1999; Reed and Gebauer 2004). Despite its initial success, Reed has recently and quite justifiably called for a reconsideration of the appropriateness of

his definition of the Protohistoric era as well as the constructs of its phases. He did this in a 2004 report regarding the archaeology of the Uncompahgre Plateau (Reed and Gebauer 2004:104).

In this chapter the fully prehistoric attributes of Reed and Metcalf's Canalla phase description are relied upon to illustrate the late pre-contact Ute baseline. Reed and Metcalf did a fine job with this. The term *Canalla phase* is also being retained but only with the caveats that *it explicitly ends in ca. 1540* and that it does not refer to or include any attributes of Ute protohistory or history. Reed noted that Rand Greuble of Reed's staff had also previously "challenged the utility of the Antero and Canalla phases" because they were "defined primarily from historic rather than archaeological data" (Reed and Gebauer 2004:104). In addition to the misuse of the term *protohistoric* and a lack of archaeological data to support the point of division of its phases, the Reed and Metcalf model also shares in the oversimplification inherent in all such two-stage models, including those of Buckles (1971) and O'Neil (1993). These models essentially break the temporal and cultural continuum down into nothing more than prehistory and post contact history or pre-horse and post-horse Ute.

The Reed and Metcalf model is further dependent on misunderstandings of Ute ethnohistory and the complexity of the changes in their subsistence economy between 1300 and 1881. Reed and Metcalf seem to believe that the Fremont horticulture-based economy was simply replaced in the region by a Ute hunting and gathering pattern that never changed. They are speaking of the archaeological traditions of what are believed to be two distinctive peoples who sequentially occupied the region. They overlook the possibility that Utes may very well have been in the region along with the Formative stage horticulturists prior to A.D. 1300, let alone that some of the Fremont may themselves have survived in the area after that date, as even they have noted (Reed and Metcalf 1999). No one has ever resolved the question of when the Ute hunters and gatherers appeared in the region. Although the Utes may well have come into the region following the demise, whenever it may have been, of the Fremont, this is not yet established and there are many theories on the matter (Madsen and Rhode 1994). Data from sites in northwestern Colorado have begun to provide solid indications of a very narrow time window, if one even exists at all, between the late Fremont and a highly contrasting and readily visible Ute/Numic occupation there (Baker 1995c, 1996b). This subject is still a wide-open issue and will not be resolved until the old-wood problem in regional radiocarbon dating is better understood and sites are dated more closely (Baker 1995c, 1996a, b). That is, however, a question of prehistory, which may ultimately be resolved with help from historical archaeological data.

The division between the Canalla and Antero phases at 1650 is, in particular, based entirely on a failure to rely on appropriate documents and literature regarding the timing of the rise of the Ute equestrian profile. Reed and Metcalf (1999:146-150) believe this profile had been significantly achieved by 1650. As stated at the 2004 CCPA meeting no known authority has ever suggested that the Ute were appreciably mounted any time even close to 1650 (Baker 2004d). Among many, these authorities include the writings of Omer Stewart and the Great Basin volume of the *Handbook of North American Indians* (Callaway et al. 1986; Shimkin 1986). Even the one source, Jan Petit's popular book (1990), which Reed and Metcalf cite as their only source, did not say this. What she actually said was that the Utes began their evolution to an equestrian profile after acquiring seed stock in the Pueblo Revolt of 1680. It is now known that even that view is not correct and that the Utes did not even participate meaningfully in the revolt (Baker 2004b). There is no evidence that they obtained the Spaniards' horses then (Goss 1999a:80).

The original version of what was essentially Reed's model had been strongly criticized by Buckles (1988:224) for essentially the same reasons outlined herein for the Reed and Metcalf offering (1999). In the revised version Reed and Metcalf did not address Buckles's previously expressed concerns. Accordingly, in preparing this chapter there was no other recourse than to abandon all but the fully pre-contact portions of Reed and Metcalf's Canalla phase along with all of their Antero phase and the inappropriate use of the term "Protohistoric era" as previously discussed (Baker 2005a; Baker et al. 2005). It is simply not possible to retain these phases, no matter how desirable it might be to adhere to previously published terminologies.

Buckles very strongly called for preparation of predictive archaeological models for the Ute that are rooted in ethnohistory, ethnology, and archaeological perspectives on other peoples (Buckles 1988:229). As

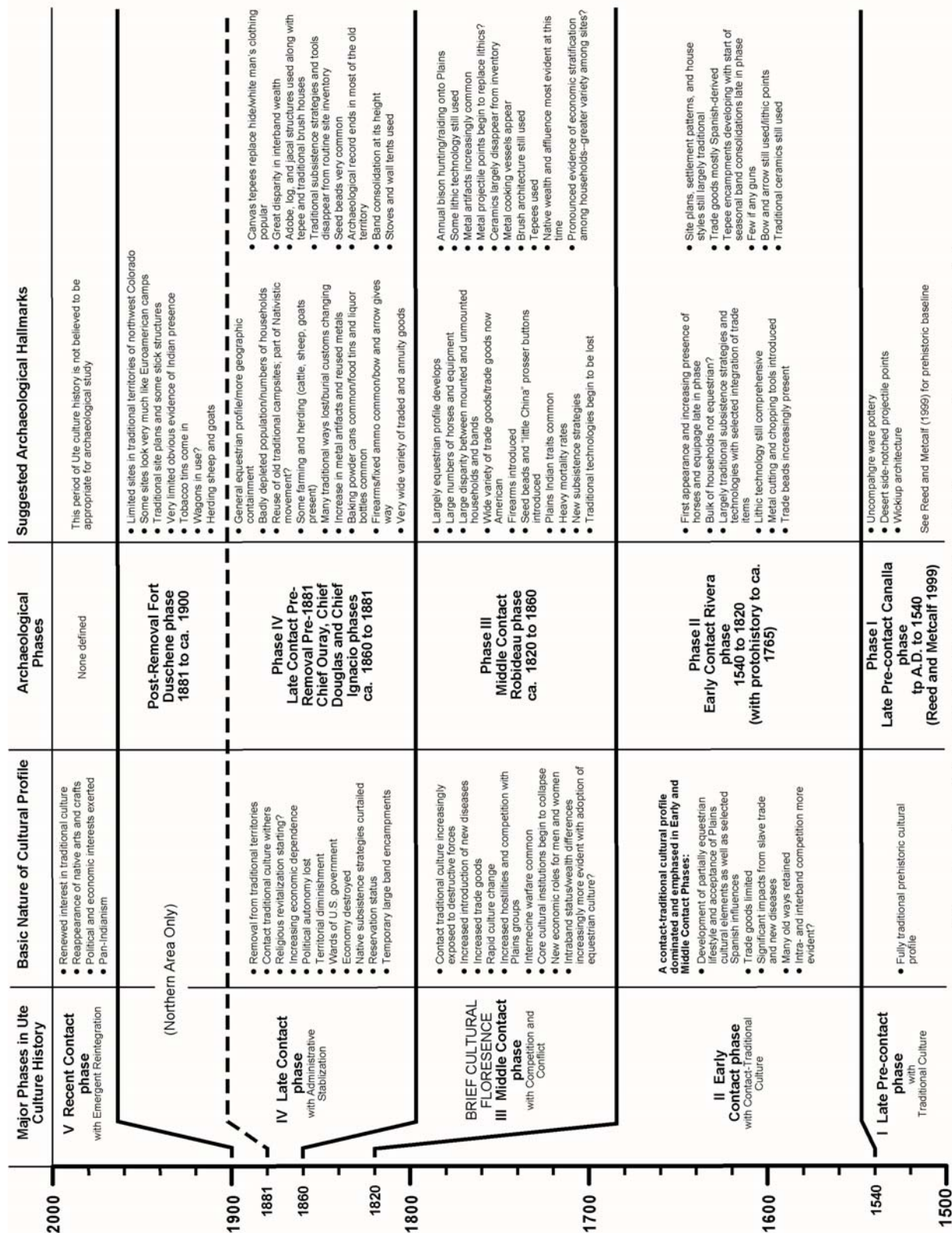
used herein the current version of the Baker model is an attempt to fulfill that call. It is an ethnohistorically and ethnologically deepened, more broadly and comparatively focused, and archaeologically supported version of the one first offered specifically for the Tabeguache and Sabuagana Ute bands in 1988. That model has continually been revised and used by Baker (Baker 1988:159-160; 1991b:76-83; 1991c:III/3-10,VI/62-72; 1993a; 1996a:5/8-11; 1999b, 2003a, 2005a; 2005b). Baker's adaptation of the original Leacock model (Leacock and Lurie 1971) recognized five phases in the Eastern Ute acculturation process, as Figure 3 shows. Phase I is the Late Pre-contact Canalla phase, which ends ca. 1540. Phase II is the Early Contact Rivera phase, which enfolds Ute protohistory and extends from 1540 to 1820. Phase III is the Middle Contact Robideau phase, which extends from 1820 to 1860. Phase IV is the Late Contact Chief Ouray (and Chiefs Douglas and Ignacio) phase (s), which extends from 1860 to 1881. Phase V is the phase of Emergent Reintegration. It is the last stage in the model and includes modern Native American issues.

While still few in numbers, the universe of investigated Ute sites has grown well beyond that of 1988. From the basis of the recently emerged database of rigorously investigated Ute sites it is certainly possible to commonly and closely date and differentiate sites from the Pre-contact, Early, Middle, and Late Contact phases (Table 2 and Table 3) and thereby compare them to the prehistoric baseline in a manner somewhat similar to that undertaken by Daniel Rogers (1990) for the Arikara. These are discussed here and in Baker (2003a; 2005a; 2005b). Jon Horn (1988; 1999) has also argued for the strong potentials of dating Ute sites. Reed and Gebauer have recently provided data that show how closely these sites can often be dated. They follow the Reed and Metcalf model (1999) and commingle sites and components ranging from obviously prehistoric contexts with those through the post-Civil War era and Baker's Late Contact Chief Ouray phase. They do not attempt to break them out into either Reed and Metcalf's (1999) own Canalla or Antero phases.

Reed and Gebauer's summaries of the contents of the 15 sites that they felt had been excavated beyond "simple testing or feature recovery" on the Uncompahgre Plateau of west-central Colorado (Reed and Gebauer 2004:95-98) are reviewed here. As shown in Table 2, a considerable amount of important information relevant to dating was not available in their summaries because a lot of the sites had been excavated nearly 50 years ago by Buckles (1971). Things now considered important in retrospect were not mentioned, such as the kinds of trade beads found or if metal axe cut marks were present on trees and limbs. Despite these unavoidable shortcomings, the review turned up no less than six historic items from four of the sites/components that have the capability of providing formal *terminus post quem* dates (Deetz 1977a; Noël Hume 1969b; South 1977b). These items are quite obvious and dates for them are very easily determined as discussed in relation to the Last Hour Wickiup (Baker 2003a:12-19). Chronometric dates by other than artifacts were present for an additional five sites/components.

On the basis of this limited information and without even seeing the artifacts themselves or any other records, it was possible to construct Table 3 from Reed and Gebauer's data (2004) and confidently assign three sites or components to the Late Contact Chief Ouray phase. Three more could be assigned to no earlier than the Middle Contact Robideau phase and with just a little more information might have been more precisely placed. Two were assigned to the Early Contact Rivera phase from A.D. 1540 to 1820, and two to the Late Pre-contact Canalla phase or prior to 1540. This analysis accounts for no fewer than 10 sites or components that could be placed within or close to one of the phases of the Baker model. Five sites had no artifacts or other dating potentials. No fewer than 60 to 70 percent of the sites or components could be placed into the Baker model. As presented in Table 2 and Table 3, this exercise shows the capability of dating the ephemeral Ute components and often, though not always, placing them in appropriate taxonomic positions according to such multiphase models. Such placement should be the point of beginning to order the Ute archaeological record and to measure the course of its evolution from the prehistoric baseline and seeking additional means of identifying Ute components. Such measurement would seem to be the fundamental goal in considering patterning in the archaeological record.





This model must be adjusted relative to the Southern, Middle, and Northern areas of the Eastern Ute Territories

Figure 3. The Baker model of Ute culture history for the Eastern Ute bands of western Colorado.

**Table 2.** Historic artifacts in 15 Ute components that can provide either *terminus post quem* or approximate dates for the occupations (compiled from Reed and Gebauer [2004:95-100] and Table 4, page 44).

Site Name/Number	Artifact/Dating Noted	Comment
<b>McMillen/5MN13</b>	Brass pendant	Post 1540 or later
	Sharpes 50/66[sic?] cartridge	Post 1866?
	Cut metal	If tin, probably post-1860
	Trade bead depends on type, if seed beads	Post 1840s (Baker 2003a)
Interpretation: Late Contact Chief Ouray Phase site (1860-1881), with classic <i>terminus post quem</i>		
<b>Carlyle/5MN1</b>	No historic artifacts or other dating	
<b>5MN18</b>	No historic artifacts or other dating	
<b>Bedrock Pit/5MN35</b>	Metal knife blade	Post 1540 or later
	Shell button depends on type	Probably nineteenth century
Interpretation: Middle Robideau to Late Contact Chief Ouray phase (ca. 1820-1881)		
<b>Shavano Spring/5MN40</b>	Trade beads depends on type: if seed bead	Post 1840s (Baker 2003a)
Interpretation: Middle Robideau to Late Contact Chief Ouray phase (ca. 1820-1881)		
<b>Lee Ranch/5MN41</b>	dendrochronology	Post 1741
Interpretation: Probably much later because of old wood unless dating axe cut, then possible to date closely, certainly a late Early Contact Rivera phase or later site (post 1741)		
<b>5MN42</b>	Piece of brass	Post 1540; probably much later
	Dendrochronology	Post 1762
Interpretation: Probably later because of old wood unless dating axe cut then possible to date closely, certainly a late Early Contact Rivera phase site or later (post late eighteenth century)		
<b>Monitor Creek/5MN44</b>	No artifacts, no other dating	
<b>5MN65</b>	No artifacts, no other dating	
<b>Harris Site/5MN2341</b>	Multiple artifacts w/fixed ammunition	Positive 1879
	including classic hall marks of Late Contact phase-post 1879 from classic <i>terminus post quem</i> date	
Interpretation: Classic Late Contact Chief Ouray phase (1860-1881) occupation.		
<b>Oak Hill/5MN2341</b>	No historic artifacts	
	Thermoluminescence date	1456-1562
Interpretation: Late Pre-contact Canalla phase (prior to ca. 1540)		
<b>5MN3861</b>	No historic artifacts/no other dating	
<b>Schmidt/5MN4253</b>	No historic artifacts/no other dating	
	Locus 1 radiocarbon	1700-late 1800s
	Locus 2 radiocarbon and dendrochronology	show two occupations: 1450-1680 and early eighteenth century
	Locus 6 thermoluminescence, radiocarbon, and dendrochronology	suggest 1838
Interpretation: Early Rivera (1540-1820) and Middle Robideau (1820-1860) Contact phase. Note: the well-controlled data from this site are of enormous significance in the growing database of Ute sites. Within obvious indications of Early to Middle Contact phase occupations there are no signs of historic trade materials, which certainly tends to suggest that at this relatively late time the Ute occupants were still maintaining a largely prehistoric lifestyle. If this pattern continues as the database grows, then it would have profound implications for the historical archaeology of the Ute. There is no firm evidence to suggest that this is a protohistoric site.		
<b>Aldasoro/5MN4270</b>	No historic artifacts	
	Thermoluminescence	1461-1545
	Radiocarbon	1305-1430
Interpretation: This is obviously a Late Pre-contact Canalla phase (to ca. 1540) site and not a protohistoric one.		
<b>Simpson/5SM2425</b>	Component 4 brass/copper object	post 1540
	(Dinetah Gray pottery)	Late seventeenth century
Interpretation: a true protohistoric component of the Early Contact Rivera Phase (1540-1820).		
	Component 5 metal tinkler cone, ceramic pipe frag.?, percussion cap	post 1820
Interpretation: Middle Contact Robideau to Late Contact Chief Ouray phase (1820-1881). The percussion cap provides a classic <i>terminus post quem</i> date, as the pipe fragment might if the bore diameter is intact.		



**Table 3.** Temporal ordering of Ute components listed by Reed and Gebauer (2004) correlated to evidence of wickiups.

Site Name/Number	Dates drawn from Table	Wickiup Evidence
<b>Late Contact phase (1860-1881)</b>		
Harris/5MN2341	1879-1881	No evidence/tepees in use?
McMillan/5MN13	1860s or later	No evidence/tepees in use?
<b>Middle to Late Contact phase (1820-1881)</b>		
Bedrock Pit/5MN35	Nineteenth century?	Rock shelter/not applicable
Shavano Spring/5MN40	Post 1840s? in part	No evidence/tepees in use?
Simpson/5SM2425, component 5	Post 1820	Wickiup present
<b>Middle Contact phase (1820-1860)</b>		
Schmidt/5MN4253, component 6	Ca. 1838	Collapsed wickiup present
*Monitor Creek/5MN44		Wickiup present
*5MN65		Wickiup present
*Special exception for no artifacts and no dating but with wickiups present		
<b>Early Contact phase (1540-1820)</b>		
Schmidt/5MN44, component 1	Ca. 1800 midpoint	Collapsed wickiup present
5MN42	Post 1762	Wickiup present
Schmidt/5MN4253, component 2	2 <sup>nd</sup> occ. early 1700s	Collapsed wickiup present
Lee Ranch/5MN41	Post 1741	Wickiup present
Simpson/5SM2425, component 4	Late 1600s	Collapsed wickiup present
Schmidt/5MN4253, component 2	1 <sup>st</sup> occ. 1450-1680	w/2 <sup>nd</sup> occ? collapsed wickiup
Oak Hill/5MN2341	1456-1562	No wickiup; likely once present?
<b>Late Pre-contact phase (to 1540)</b>		
Aldaroso/5MN4270	1461/1545	No wickiup; likely once present?
<b>Sites Thrown Out of Table</b>		
Carlyle/5MN1	Rock shelter; no dating or historic artifacts or wickiup	
5MN18	Rock shelter; no dating or historic artifacts or wickiup	

Table 4, below, is drawn from Baker (2003a) and shows some common items that can be used to date Ute sites. Some further aspects of the ephemeral Ute record need to be considered here. The absence of iron axe cuts anywhere on a site, in combination with the entire artifact assemblage and other chronometric dates, can often lead one to begin making some general assumptions about relative dating, particularly once the database is expanded. By the Middle Contact phase when the fur trade was bringing in substantial quantities of new goods, trade axes should have been coming into the artifact inventory in substantial numbers. The presence of an iron axe was documented at the Last Hour Wickiup (Baker 2003a). It was possible to use dendrochronology to determine that a pole used in the wickiup had been cut within a year or two of A.D. 1840. This information clearly placed the site squarely in the Middle Contact Robideau phase.

By the Late Contact phase axes had become ubiquitous parts of the Ute tool inventory and were routinely given to the Utes by the government (Baker 2005b). Baker has noted evidence of their use preserved at several Late Contact sites from northwestern and west-central Colorado. These are always in piñon and juniper groves where preservation of the arboreal context is often excellent. One can sometimes even still find intact Ute firewood piles (Baker 2005b) next to hearths as the Huschers did (Huscher and Huscher 1939a). Unfortunately, Euroamerican woodcutters did get into a lot of sites in the piñon and juniper groves and often have compromised the potential for study of the older arboreal landscape. Even where they did, however, the woodlands still do sometimes preserve evidence of aboriginal limbing activities (Baker 2005b), if one looks hard. In such cases sites can at times be dated, though not absolutely, by nothing more than an axe cut stub of a tree limb near an aboriginal feature. In the future, if a growing sample of sites seem

to lack evidence of axe cuts, yet have some trade items which might be early, this pattern itself may well indicate that many are from the Early Contact phase.

After breaking down the Ute sites in Reed and Gebauer's summary (Table 2, above; Reed and Gebauer 2004:95-100) on a temporal basis using information such as that in Table 4, examination was made to see whether any pattern emerged between age and the presence of wickiup or other ephemeral wooden structural remains. As shown in Table 3, there do appear to be some patterns emerging. There is obviously not a big enough sample to say anything with certainty or to statistically test assumptions. It is, however, still possible to gain some idea of the antiquity of various architectural features and the approximate preservation rate/longevity of the brush structures. It is noteworthy that the latest sites in Table 3 generally show no wickiup architecture, likely because tepees were in use and nothing remains of their architecture above ground. A possible exception is very ephemeral structures, such as menstrual huts, which were dependencies of the main lodges (Baker 2003a). The exercise also suggests that at a time depth of perhaps two hundred years or more and the Early Contact phase, wickiups are pretty well deteriorated or collapsed by this time. It also suggests that wickiups probably seldom if ever survive at all from the prehistoric Canalla phase or the early portion of the Early Contact phase. If this pattern, as a hypothesis, holds up under more scrutiny, then it will suggest that most of the presently surviving wickiup architecture is probably from late in the Early Contact phase or later. Information of this kind regarding wickiup preservation rates can in itself prove useful in helping to date sites on a relative basis.

**Table 4.** A preliminary listing of some common closely datable historic artifacts (Baker 2003a).

Artifact	<i>Terminus post quem</i> and/or date of common introduction to regional archaeological record	Source
Seed beads	Post ca. 1839/1840	Baker 2003a
Prosser buttons	Post ca. 1839/1840	Baker 2003a & (Sprague 2002)
Gun flints/gun parts <sup>a</sup>	Post ca. 1800 or even later?	(Hamilton 1960; Russell 1967:70-77); Douglas Scott personal communication with Steven Baker 2003
Percussion caps	Post ca. 1820	(Held 1970)
Fixed ammunition <sup>b</sup>	Post ca. 1860 and probably later. Types can provide precise <i>terminus post quem</i> dates.	(Peterson 1959) Douglas Scott, personal communication 2003
Tin hole-in-cap food cans <sup>c</sup>	Post ca. 1870+ before round food tins became common on West Slope.	(Busch 1981; Chapin 1937; Clark 1977; Gillio et al. 1980; Horn 1988; Rock 1984, 1989)
Brown beer and spirits bottle glass <sup>d</sup>	Post ca. 1870	Author's personal observations and (Baker 2005b)

<sup>a</sup>A most difficult subject to precisely determine for the regional archaeological record at this time, but it is highly unlikely that guns were introduced in any quantity to the Eastern Ute, and particularly those bands north of the San Juans, prior to the advent of the Middle Contact Phase and the start of the American fur trade. The New Mexico Colony had very few guns of its own and was certainly not trading many guns if any to the Ute before this time because of their scarcity and the official bandos. There was no other expedient likely source for them until the opening of the fur trade. This theory the author and Doug Scott (personal communication 2003) agree upon at this time.

<sup>b</sup>Some early types of fixed ammunition cartridges commence by 1860 and proliferate after the Civil War. These are individually very closely datable and could hardly have been common in western Colorado until after the war and particularly the late 1860s and 1870s.

<sup>c</sup>Generally unavailable in western Colorado until well after the Civil War and the arrival of the railroad in Denver in 1870 and the opening of the West Slope to white settlement with accompanying availability of steady heavy freight transportation. Before this time tin food cans and not just an occasional food tin or pieces of tin were apparently not common on Ute household sites.

<sup>d</sup>Beer, whiskey, and other bottle glass in any quantity on Ute household sites appears to have come in with tin food cans as outlined in c above.

\*Note: These suggested dates are not always the date of first manufacture but the date when the items could have been readily enough available to commonly enter the archaeological record on the Western Slope. Individual sites cannot be dated simplistically but will have to be evaluated in detail case by case in light of combinations of artifacts and other lines of dating.

Figure 3, above, outlines the taxonomic structure that results from the melding of Reed and Metcalf's (1999) Canalla phase (prior to A.D. 1540) with the Baker model of the protohistoric and historic portions of the Ute archaeological tradition used herein. The latter includes the Early Contact Rivera phase (ca. 1540-1820), which enfolds Ute protohistory, the Middle Contact Robideau phase (ca. 1820-1860), and the Late

Contact Chief Ouray (and Chiefs Douglas and Ignacio) phase (ca. 1860-1881). In implementing the model there are additional temporal and cultural as well as geographic distinctions to be made. The geographic distinctions are broken out into three parts of the old Eastern Ute territories (Northern, Middle, and Southern) as considered in the ethnohistorical overviews of each phase. This distinction is made because each of these areas poses specific historical archaeological and ethnohistorical differences and problems. The key archaeological and ethnohistorical attributes of each of the phases of the Baker model are individually summarized under their appropriate designations and outlined in Figure 3, above.

## **Phase I-Late Prehistoric Period Ute/Canalla Phase (to ca. A.D. 1540 only)**

### **BASELINE UTE SOCIOPOLITICAL SYSTEMS**

The term *Ute* implies nothing more than that people spoke the Ute language, which is a member of the Numic family of the Utaztekan linguistic stock. The Ute language is spoken by ethnic groups that have traditionally been referred to as Ute, Southern Paiute, and Chemhuevi (Callaway et al. 1986; Goss 1961, 1967, 1972, 1977; Miller 1986; Stewart 1973). While there were certainly common cultural traits among these peoples, Stewart (1966a:39) added the useful notion that they also share "an emotion charged belief that they are alike and united in opposition to other Indians and non-Indians." Certain groups of the Ute speakers eventually appeared in the documentary records and have, over the years, come to be referred to as *bands*. The exact meaning of these bands as sociopolitical units, which were larger than small, kin-based groupings, has prompted considerable discussion over the years (Fowler 1986; Goss 1999a; Ronaasen et al. 1999; Shapiro 1986; Walker 1999).

From a general perspective there were Ute groups that have been designated and distinguished from one another over the years by historians and anthropologists. From the modern Ute perspective these identifiers may not fully characterize the way the individual Ute groups saw themselves (Goss 1999a). These individual groups were referred to as "peoples" by Father Escalante (Chavez and Warner 1976:102). His peoples ultimately emerged in history as the various Ute bands. These bands have been documented in relation to specific territories from which they seem to have taken their names and by which they referred to themselves (Chavez and Warner 1976:102; Tyler 1951:200). More recent detailed evaluations of the accounts of the expeditions of Juan Rivera in 1765 (Baker 1994; Rivera 1968 [1765]; Sánchez 1997) and Domínguez and Escalante in 1776 (Bolton 1950; Chavez and Warner 1976) suggest that these reference points were commonly major rivers and their valleys within the individual territories. Goss, however, using linguistic data, suggests that the names given to them were likely based on attributes such as the kinds of houses they lived in (Goss 1999a). Even if the way the names were derived might be questioned, they were still distinguished one from the other by names that often also identify geographic features.

Although Ute speakers may have originally been scattered from the southern nearly to the northern borders of Colorado west of the Continental Divide, the various Ute bands in that large area were focused around the most advantageous environmental areas that formed the core of their home territories. These were commonly the upper basins of the primary river drainages. There, as pedestrian peoples, they had easy access to those varied environments that produced the resources on which they routinely depended and which they procured by visiting these areas on a seasonal basis. Each band also had its own specific culture history despite the fact that all the bands appear to have been generally similar culturally, all spoke Ute, and all ultimately followed similar patterns of cultural change (Baker 2003a, b, 2004d; Callaway et al. 1986; Goss 1999a; also see Goss 1999b; Stewart 1966a, 1971, 1973). The same can probably have been said for the indigenous Plains groups, such as the Apache, who are believed to have abandoned eastern Colorado during their protohistory. For the Ute in particular, it was only the language that on the surface often suggested to Europeans that they were one people. In fact, there is no evidence for any form of central authority or common political interest at the end of the prehistory and through much of their protohistory among all the Ute speakers (Baker 2004b, 2005b), and probably the Apachean speaking groups as well (Foster and McCollough 2001; Opler 1983; also see Walker 1999:60-73). Because of their simple kin-based level of organization, there was nothing that would have caused or even enabled these individual Ute-speaking groups of people to ever act as a unified body (Chavez and Warner 1976:101). This individuality was particularly so

prior to the internecine wars that appear to have escalated in earnest with the acceptance of the horse among peoples of the Great Plains (Mitchell 2004; Secoy 1953; Swagerty 2001:267; Tyler 1951) and elsewhere.

Although historically a point of some considerable contention among ethnologists, particularly Omer Stewart and Julian Steward (Ronaasen et al. 1999:174-176; Shapiro 1986:620-621; Stewart 1954; Walker 1999:69-71), it was the introduction of the horse that did in time allow for the formation of larger aggregates of families into actual bands in some areas of the West. For the Tabeguache and Sabuagana bands (Baker 2004b, 2005a) of Stewart's Eastern Ute (Stewart 1973), these were only very temporary amalgams of seasonal task groupings rather than the more enduring political structures that developed in some areas of the Plains following the introduction of the horse (Secoy 1953; Shapiro 1986; Swagerty 2001; Walker 1999).

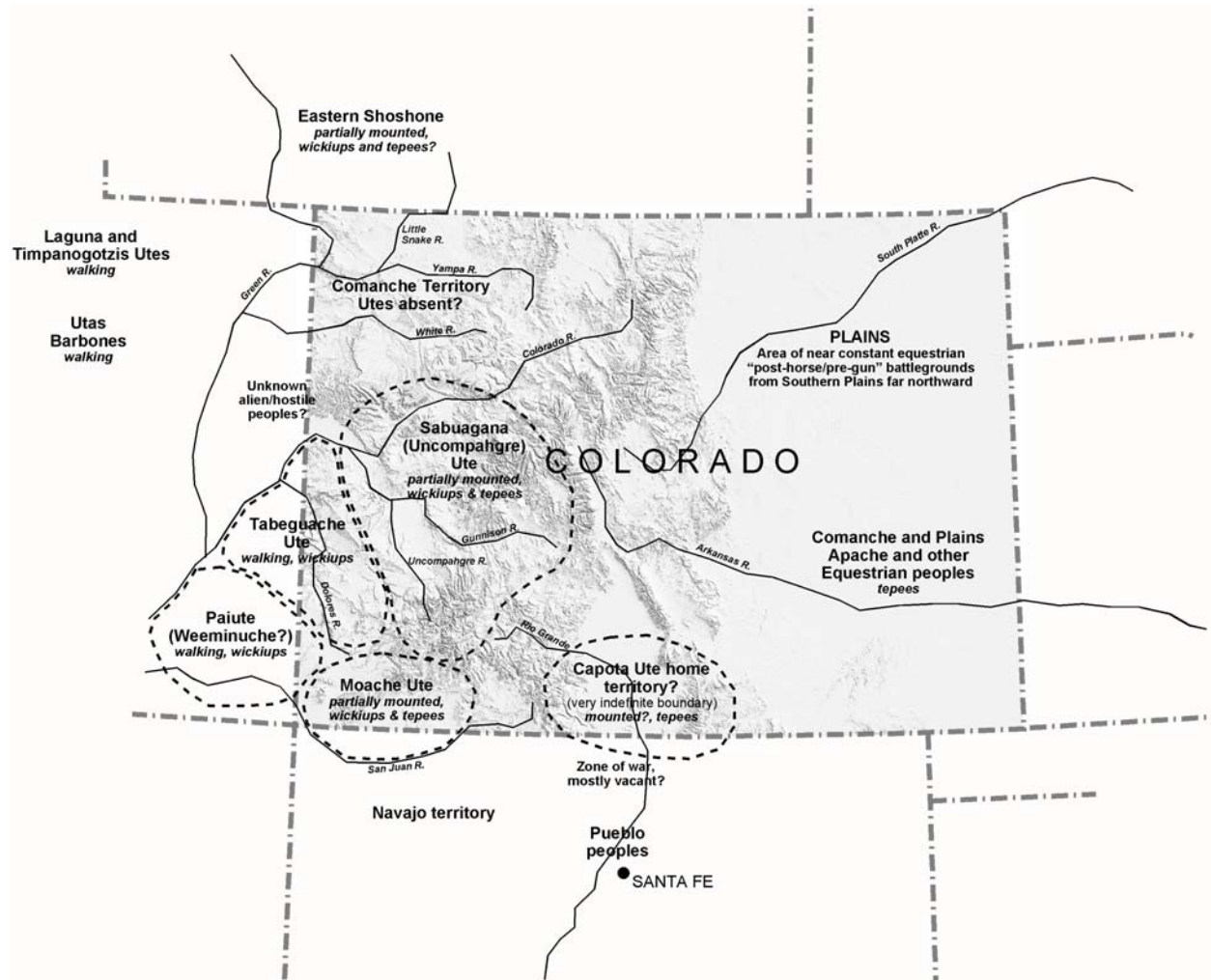
The basic household unit of the Numic world was the nuclear family (Shapiro 1986; Stewart 1938, 1970). "Indigenous patterns of social organization throughout most of the Basin revolved around families and family clusters." Ethnographic data from the Great Basin generally suggests that prehistoric kinship would have been bilateral and that families grouped together to form residential clusters on this basis. Postmarital residence patterns were generally flexible and governed by a "variety of practical and personal considerations. Larger aggregates were temporary and seasonal (Shapiro 1986:620-628). The nuclear family household was the key and was the common element in the settlement system of the Ute occupation of Colorado. Such households form the core of the archaeological record of the historic and prehistoric Eastern Ute landscape as described by the Spanish (Baker 1996b). The Spanish were describing the physical evidence of households and household clusters under the single term *ranchería* (Baker 1996b:5/12).

### **Eastern Ute Bands and Their Territories**

Stewart believed that the Eastern Ute bands described by the Spanish in the latter eighteenth century were then occupying the same basic territories they had occupied at the end of the prehistoric period (Callaway et al. 1986; Stewart 1966a, b, 1971, 1973). At that time he based his information primarily on the diary of Fathers Domínguez and Escalante, which was written when they passed northward through western Colorado in 1776 on their way to the ancient land of Teguayo in Utah (Bolton 1950; Chavez and Warner 1976; Tyler 1951, 1952, 1954). The general dispositions of the bands encountered by Dominguez and Escalante have only recently been supported by the recovery and translation of the 1765 diary of the travels of Juan Rivera, who pioneered the path later followed by the priests (Baker 1994, 2003b, 2004b; Rivera 1968 [1765]; Sánchez 1997). The disposition of these peoples in the latter eighteenth century is shown in Figure 4 and is based on the senior author's reevaluation of the original documentary sources relative to the various Ute bands.

In late pre-contact times the various "groups," "peoples," or "bands" of the Eastern Ute are generally believed to have occupied the region west of the Continental Divide and east of the Green and Colorado rivers in Utah. The Colorado River marked the start of the Western Ute territory (Stewart 1971, 1976). This division is only an arbitrary one invented by Stewart and probably meant nothing to the Utes. On the south the Eastern Ute territory included the south flank of the La Plata, San Juan, and probably the Sangre de Cristo mountains at least. Consistent documentation starting at an early point indicates that the San Juan River valley marked the maximum extent of Ute territory on the south, at least in protohistoric and historic times (Bolton 1950:22; Richie 1932:35-36; Stewart 1966a:48). The main haunts of Utes in that area were likely in the upper drainages on the south side of the mountains. The Ute-speaking range extended northward to a point toward the northern border of Colorado. There the Yampa River or the Green River might have marked the northern limits of the Ute territories and the southern limits of the Shoshone speakers of what is now Wyoming (Figure 2). Although Ute people were documented as living east of the Continental Divide north of the San Luis Valley near Salida as early as 1779 by de Anza (Goss 1999a:82), there is not yet any obvious archaeological evidence of their presence there. It is herein presumed that Ute speakers only moved onto the Eastern Slope after the exodus of the Apachean speakers and the acquisition of significant numbers of horses. This is surely an idea that can be framed as an hypothesis to be tested by archaeology, particularly using the distribution of Uncompahgre Brownware (Reed and Metcalf 1999). Utes of some kind were, however, active out onto the plains to the north and east of Santa Fe in association with some Comanche by the early

eighteenth century (Richie 1932:18-20; Tyler 1951:132-161). Utes eventually did utilize and lay claim to the Eastern Slope foothills and plains of Colorado and tried to defend the area (Baker 2004a) by force during the initial white settlement and in the 1868 treaty negotiations. All such claims, however, appear to have been based either on conquests by specific Ute bands, including Uncompahgre and Tabeguache, or simply occupation of territory that had been abandoned by others.



**Figure 4.** The general disposition of Native American peoples in the late eighteenth century and end of regional protohistory.

Until the recovery of the 1765 Rivera diary, virtually everyone who had ever written about the Utes had accepted the idea that when first recorded from within their territories in 1776 by Fathers Domínguez and Escalante, Colorado's Utes were occupying the same basic territories that they had been at the end of prehistory (Baker 1988, 1991c, 2003b, 2004b, 2005b; Buckles 1968, 1971; Callaway et al. 1986; Huscher and Huscher 1939a; Huscher 1954; Opler 1963, 1971; Reed 1994; Richie 1932; Schroeder 1965; Reed and Metcalf 1999; Stewart 1966a, b, 1971, 1973; Tyler 1951). There have apparently never been any challenges to this basic assumption. With some necessary modifications based on the Rivera diary and review of the evidence for some old assumptions, this notion is accepted with some cautious hesitation herein. In particular, there may have been some undetected shifts in territories deep in the mist of protohistory along the southeastern edge of the Ute territories nearest the New Mexico colony and on the extreme north edge in the vicinity of the Shoshone and Ute boundary areas. The bulk of the Ute territories noted by Rivera and Domínguez and Escalante were, however, probably situated much as they had been in prehistory. The first significant disruptions in Native American territorial dispositions were commonly those closest to a European

colony. It is to be noted that Ute oral history does not always conform to what the historical documents indicate (see Goss 1999b).

Figure 4, above, depicts the disposition of Colorado's Ute-speaking bands at the end of their protohistory in the latter eighteenth century as indicated in the historical documents that are now available. It is to be noted that more bands were ultimately added to the listing of Ute bands shown in Figure 4 and enumerated in Stewart (1966b; 1971; 1973) and Callaway et al. (1986). The differences between the earliest known Eastern Ute landscape in Figure 4 and that projected by Stewart for the nineteenth century are obvious but cannot be explained simply. The distribution of Stewart's Eastern Utes (1966b; 1971; 1973) was only in part determined from the Domínguez and Escalante diary, augmented with information from nineteenth century sources. The latter observations were made only after much change had occurred, including the rise of their equestrianism. They do not, therefore, necessarily have any bearing at all on the original distribution of protohistoric Ute bands. Also, they must be viewed very cautiously because of their importance to Stewart's testimony in the Ute land claims. The Ute band distributions presented in the maps in Stewart's cited works and in Callaway et al. (1986) are not reproduced here because they are not at all reliable relative to the documented protohistoric Ute landscape. Based on this mix of data, Stewart ultimately enumerated no less than six Eastern Ute bands (Callaway et al. 1986:338-340; Stewart 1966b, 1971, 1973) that were documented at widely disparate times. These bands included the original Moache, as well as the Capote and Weeminuche bands. The territories of these three have been believed to have been located along the south flank of the Colorado mountains near the present border between Colorado and New Mexico. There are, however, some uncertainties with these latter two assignments, namely, the Capote and Weeminuche. For all their prominence in later documents, the Capote poses a special interpretive difficulty. They are not now known to have been mentioned by that specific name in the documentary record until 1854 (Stewart 1973:13). The original Capote territory is not known, but it is generally given as along the southern border of Colorado (Callaway et al. 1986). No one has ever demonstrated from ethnohistorical sources that this is where they originated. This is simply the area where they seem to have been located when first documented. The first trackable references to a specific Ute band are to Moaches.

There is no doubt that at least the Moache and Capote, or elements of them, such as special task groups, ultimately ranged far and wide after they had become meaningfully equestrian (Opler 1971; Schroeder 1965). They were likely among the first groups to become well mounted. Schroeder attempted to identify specific Ute band identities when there was no other historical reference than generic ones referring only to Utes. In his often-cited work Schroeder (1965) put his "predicted" band name in parentheses beside each reference to Utes that he found in the historic documents. The result suggests that he was either exceptionally clairvoyant or overly anxious to demonstrate that he could make better sense of the historical documents than anyone else. A review of his source materials suggests that his comments on band identities are wholly unsubstantiated. M. K. Opler's projections of the territories of the southern bands also need to be closely revisited. The area of southern Colorado to the south of the mountains is herein designated the "Southern Archaeological" area in the Eastern Ute archaeological tradition. It poses special and complex archaeological and ethnohistorical issues. These issues are related to its close proximity to the Spanish colony and the very rapid rates of culture change during the involved Utes' protohistory. It is therefore expected to ultimately show some significant contrasts to the archaeological record of the more northerly "Middle and Northern" areas.

Earlier interpretations have steadfastly and adamantly stated that the Uncompahgre and Tabeguache bands were one and the same and situated north of the San Juan Mountains in the upper San Miguel and Uncompahgre drainages (Callaway et al. 1986:339). This area is herein designated the "Middle Archaeological" area of the Eastern Ute. Impeccable primary documentary sources previously unavailable do now clearly indicate that the Uncompahgre and Tabeguache bands were originally separate, but they united as one in about the mid-nineteenth century (Baker 1988, 1991c, 2003b, 2004b, 2005b). As late as 1879 individual Utes of the united band were still identifying themselves and being identified side by side in government documents as either Uncompahgre or Tabeguache (Baker 2003b, 2004a, b, 2005b; Covington 1949:120). The eighteenth century, and presumed original, Tabeguache territory focused east of the La Sal Mountains and west of the Uncompahgre Plateau and northward from near Disappointment Creek and clearly

included the Paradox Valley. The heart of the Tabaguache territory was the drainage of the San Miguel River. The Sabuagana/Uncompahgre territory was focused in the Uncompahgre and Gunnison drainages west of the Continental Divide, east of the Uncompahgre Plateau and the Tabaguache territory, and north of the San Juan Mountains.

Domínguez and Escalante encountered a few Sabuaganas to the north of the Colorado River. They were the last Utes they encountered in Colorado, and it is not known just which other Ute subgroup(s), if any, was then located in the area north of the Colorado River and west of the Continental Divide. Any Utes who had resided there might well have already been pushed out by the hostile Comanche noted by Rivera, and by Domínguez and Escalante, as then a major threat in that area. It is to be noted that Rivera's Ute informants did not indicate the presence of any Utes along the old Teguayo trail north of the Sabuagana territory. It was a dangerous country inhabited by Indians who were hostile to the Utes. By the nineteenth century the Colorado River corridor seems to have bounded the Sabuagana/Uncompahgre territory on the north. The Tabaguache, Sabuagana, and some Paiute were located in the Middle Area of the Eastern Ute archaeological tradition.

In the nineteenth century the area to the west of the Continental Divide and northward of the Colorado River became known as territory that had been occupied by the Parusanuch, Yampa, Uintah, and Grand River Ute subgroups (Callaway et al. 1986:339; Roberts 1977:100-102; Stewart 1973:12). The exact relationships of the Parusanuch and Grand Rivers are not well understood at all, and the ethnohistories of these subgroups have not been well summarized anywhere. There might be some duplication among these names. Unfortunately, the Spanish did not leave any record for the more northerly subgroups when compared with the more southerly Moache, Paiute, Tabaguache and Sabuagana which they actually encountered. The fact that they did not record any other Ute bands does not mean that these people were not also on the landscape in traditional territories. It simply means that they do not appear to history until much later after there had likely been a great many changes in the Ute landscape brought on by equestrianism. What does appear in both the Rivera and Dominguez and Escalante accounts is, however, a strong suspicion that there may have been no Utes, other than Sabuaganas, north of the Colorado River and up against the area of northwestern Colorado then obviously controlled by the Comanche (Bolton 1950; Chavez and Warner 1976).

The remnants of the more northerly bands from the nineteenth century have emerged today as the White River Ute band. This name first appears in the documents during the 1860s. It is to be noted, however, that Chief Ouray once described the White River band and stated that they were actually Paiutes who had moved into the area of northwestern Colorado (perhaps occupying a landscape vacated by Comanche or Utes and to be closer to the white and Indian frontier) in about the mid-1800s. According to this very unusual and possibly credible account (*Ouray Times*, Nov. 29, 1879) they then learned the local Ute dialect and became known as White River Utes.

By the early nineteenth century some Utes living near the New Mexican communities were actually noted as being "civilized Indians" as opposed to the then still "wild" Utes of Colorado. The latter were said to be Christianized and living much as the Pueblo peoples, namely by farming and weaving (Richie 1932:86). Though the veracity of this account may be questioned, it may well be a reference to Genízaro communities (Chavez 1979; Horvath 1977, 1979), which certainly would have contained many people of Ute bloodlines who have now been lost to history.

## **UTE CANALLA PHASE ARCHAEOLOGICAL CULTURE**

The late prehistoric Canalla phase of the Ute archaeological tradition is the baseline from which the protohistoric portion of the Utes' Early Contact Rivera Phase commences. Portions pertaining to the purely prehistoric baseline of the Canalla phase are drawn upon here despite the fact that Reed and Metcalf's (1999:152-153) taxonomic definition and usage of the term protohistoric are of necessity abandoned in this document. The present description is in no way intended to replace the need for the reader to refer directly to this otherwise fine source or to Reed (1994) for a broad and detailed view of the Canalla phase. It is to be remembered that there are very few, if any, attributes of the archaeological culture that are now known to be

clearly diagnostic of a former Ute presence and that language differences certainly do not always correlate with ethnic or archaeological differences (Stiger 1998). One of the major challenges and first order of archaeological business from this point on is to learn how to distinguish the late prehistoric Ute archaeological record from both antecedent and contemporary archaeological cultures in western Colorado, such as those of the Fremont and Navajo respectively (Buckles 1988).

The core of the Ute presence on the landscape is evident in former wickiup-based nuclear family households, which have left evidence of only a limited range and variety of artifacts and features. Except for isolated finds such as arrow points, flake tools, and debitage, the portable material culture of the Utes' Late Prehistoric Canalla phase is closely associated with these kinds of sites. Their material culture inventory reveals a substantial reliance on simple and common prehistoric lithic flake cutting and scraping tools that cannot now be differentiated from those of any other prehistoric group, such as Apache or Shoshone. By the inception of the Canalla phase (ca. A.D. 1300) the bow and arrow had long supplanted the atlatl and throwing dart. The typical Ute arrow point is the Desert Side-notched in both the general and Sierran (basal-notched) variety. Cottonwood Triangular points are also present in the inventory, but it has not yet been well demonstrated that they are actually projectile points instead of preforms or small blades. Baker (Baker 1995c; 1996b) has noted that in the Douglas Arch locale of northwestern Colorado, late prehistoric or protohistoric sites that appear to be Ute carry lithic signatures that stand in stark contrast to those from local Fremont sites, which are either contemporary or only somewhat earlier. These Numic and presumed Ute sites have a wide diversity of good tool stone, including obsidian from various far distant sources such as Malad, Idaho, and the Mineral Mountains of Utah. The Fremont sites, however, show a consistent dependence on one very poor quality locally derived tool stone known as "Shavetail chert" (Baker 1995c, 1996b). This suggests that the local Utes had well established trade connections while the Fremont were comparatively more insular and provincialized.

The Canalla phase also contains a distinctive pottery type known as Uncompahgre Ware. This used to be referred to as Uncompahgre Brownware. It can often be distinguished from other regional pottery types such as the Shoshone Intermountain Ware and Navajo Diné'tah Gray. This ware, while seemingly distinctively and probably diagnostically Ute, is not common and is certainly not present on all Ute household sites. It does, though, seem to appear with some consistency during the late Canalla and the Early and Middle Contact phases. It is now suspected that, along with basket making, any lingering vestiges of Uncompahgre Ware production disappeared from the Ute archaeological tradition during the Late Contact phase. The pottery can at times be embellished with fingernail or other impressions. Reed and Metcalf (1999:155-158) give a very good and comprehensive discussion of Uncompahgre Ware.

The Canalla phase assemblages also routinely contain a range of expediently acquired and utilized stone tools. These include simple unshaped slab milling stones and hearth pallet stones, usually of locally derived sandstone. They also had hammerstones and hand stones/manos, perhaps of various sizes, and made of a variety of stone types. Although manos and milling stones were once ubiquitous artifacts on Ute sites, they have literally been collected by the thousandsthroughout western Colorado over many decades. Where once they typically served to mark the locations of long ago deteriorated wickiup-based Ute household sites, they are now scarce. Without these markers it has become much harder to locate such sites. With the common absence of these items and unless there are remains of a wickiup or, at later sites, axe-cut branches present, about all that such sites initially present in terms of cultural signatures are a few lithic flakes, commonly utilized; sometimes a Desert Side-notched arrow point, which often is made of obsidian; and just maybe an Uncompahgre Ware sherd. There is also commonly evidence of a hearth, which often has badly broken, burned, and calcined animal bone in it. Natural cobbles, exotic to these sites, are also common and sometimes show evidence of usage as hammerstones. The sherds are usually few in number and commonly seem to represent only one vessel per household site. Because of the sites' ephemeral and short-term occupations, middens are generally absent. When they are present, they are very sparse and commonly found in association with the exterior hearth-oriented female work areas. It is to be noted that the prehistoric Ute assemblage seems to contain very few, if any, formal ground or pecked stone tools such as celts or grooved axes as might be found on the Plains or in the Southwest. This absence sets Ute household sites apart from many other archaeological assemblages.



The prehistoric Ute assemblage is noteworthy for its simplicity. At the household sites the activities of women are conspicuous while those of men are very difficult to detect (Baker 1991b, 1996b). Although Ute women are nearly invisible in the historical record the archaeological record is written almost entirely from their presence. The only material culture attribute recovered in archaeological contexts that might be considered diagnostic of a Ute presence at this stage of our understanding is the Uncompahgre Ware pottery and, possibly, lithic signatures. Studies of the latter have been emphasized by Buckles (1971; 1988:227) and Baker (Baker 1991b; 1996b; 2003a) as one of the most promising lines for identifying the former presence of Utes. Copeland (1983) has, in a very rare type of study, actually attempted to establish temporal lithic signatures in regional assemblages. The importance of Ute lithic signatures has begun to show promise in comparison of Ute lithics to lithics in Fremont sites (Baker 1995c; 1996b). They are not only capable of indicating time ranges but do offer potential for ethnic contrasts as well.

In comparison with some other regional cultural groups, the Ute imprint on the prehistoric landscape was minimal. They essentially blended into it and left no obvious site markers, such as depressions of pit houses, postholes, or rock and masonry construction. Theirs was about as minimal a presence as can be detected in archaeology, which is what makes Ute archaeology so difficult. One does not locate sites easily (Simms et al. 2005). Once located, however, it is the site footprint, manner of use of space, hearth construction, site selection, and nature of the houses that may, along with the ceramics and lithic signatures, ultimately prove to be the hallmarks of a former Ute presence. The presence of menstrual huts in particular, if we can learn their archaeological qualities, may well be a diagnostic trait of the Numic speakers in the region (Baker 2003a). Although certainly a core part of the Ute archaeological culture, the Desert Side-notched points are not diagnostic of a Ute presence and are widespread throughout the West, including the territories of the Numic-speaking Shoshone (Baker 1996b:5/4-5; Holmer 1986; Reed 1994:191; Reed 1985) as well as the Navajo and some Plains groups.

Architecturally, the traditional house type was the conical stick or brush house or wickiup, which can appear in various forms and be used for various functions (Baker 1996b, 2003a; Buckles 1971; Reed 1994; Reed and Metcalf 1999; Sanfilippo 1998; Scott 1988; Smith 1974). The primary structure used by the Utes was to shelter the nuclear family household, which was both the fundamental sociopolitical and residential unit. It was the very basis of Ute settlement systems and architecture (Baker 1991b, 1996b, 2003a). It is noteworthy that Goss has translated the Ute group names of Moache and Saguagana (Sabuagana) as referring to people who live in cedar-bark huts or brush houses, respectively (Goss 1999a:81). Although structural differences were discussed by Buckles (1971) and Sanfilippo (1998), the only archaeological taxonomy attempted for use in categorizing differences among the footprints of Ute sites with actual, or former, wickiup structures was offered by Baker (1996b; 2003a). Wilson (1997) has thoughtfully discussed how Indians and frontiersmen of the nineteenth century could distinguish the abandoned camps of various Indian peoples by the patterns of their use of space and construction of features. This concept is important and emphasizes the potential of learning to identify their archaeological footprints and distinguishing among them, as Buckles called for (1988).

The Last Hour Wickiup (5RB3236) (Baker 2003a) was recognized by the presence of only three small axe-cut poles leaned into a juniper tree. It is the type site for the Group 1A footprint (Baker 1995c:3-72 to 3-79; 1996b, 2003a, 2005b). Group 1 is used to differentiate Numic brush household sites from the significantly contrasting Group 2 or Fremont brush household sites in the Douglas Creek Arch archaeological locality. These identifications are believed to be pertinent to all late prehistoric Ute sites. Group 1A footprints refer to simple brush structures that lack an interior hearth but have an exterior hearth, as did the Last Hour wickiup (Baker 2003a). Group 1B structures contrast clearly with the 1A structures by being bigger and having both an interior hearth and an exterior hearth that normally has an associated female activity area. It is now tending to look like the interior hearths are smaller, neater, and more formal, with evidence of cleaning (see Baker 2005b). The exterior hearths are larger, rather amorphous, and lack the clean edges and neatness of the interior hearths. In addition to providing the companionship and utility of fire for culinary or other purposes, these exterior hearths may well have been where ashes and charcoal were thrown when the interior hearths were cleaned. A slab-lined hearth was noted at one clearly identified Ute household site (Baker 1991b), but rock rings or linings do not seem to be common.

The type site for the Group 1B structures is the Broken Blade Wickiup Village (5RB3182) on the Douglas Creek Arch, which was also partially excavated by Baker (1996b). Buckles (1971:621-659) noted both some Group 1A and 1B wickiup sites and felt that some of the smallest and most ephemeral may well have been menstrual huts (Buckles 1971:646-647) similar to that believed to have been identified at the Last Hour Wickiup (Baker 2003a) and ethnographically documented by Anne Smith (1974). The larger Group 1B type of plan was commonly documented in photos of nineteenth-century tepees and occasionally brush houses (Baker 1996b, 2005b). The Simpson Wickiup (Greubel 2001) is a Group 1B structure. Baker has recently excavated three sites with 1B footprints at Late Contact Period (late 1870s) Ute tepee-sheltered households near Montrose (Baker 2005b). Virtually every archaeologist and cultural resource manager in the state agrees on the high level of significance that needs to be accorded to the rapidly vanishing wickiup architecture of Colorado (Reed and Metcalf 1999). In 2002 such sites were successfully nominated to the statewide list of Colorado's Most Endangered Places (Baker 2002b). This designation should be of help in their conservation and continued study such as currently under way by the Dominguez Archaeological Research Group of Grand Junction (O'Neil et al. 2004), which has launched a project to review all of the known sites and then record and further study them in a long range research effort. By elaborating on Lewis Binford's views (1990) Steve Simms and others (Simms et al. 2005) have cogently pointed out how some form of structures were associated with virtually all manner of foraging activities. They stress that wickiups were once likely associated with most lithic scatters in the old Numic territories and they give good advice about how to go about finding structural evidence at such locations.

Since the sixteenth century the Spanish commonly referred to Indian villages as *rancherías* and distinguished them from the more substantial pueblo ruins that they frequently encountered in southern Colorado. In 1765 Juan Rivera visited and mentioned Ute *rancherías* on Colorado's Western Slope (Baker 1994; Rivera 1968 [1765]; Sánchez 1997). The term *ranchería* is believed to be a special American-Spanish word with its ancestry in the Spanish Colonial period. According to Cobos (1987:144) the term does not translate well into English but refers to semipermanent Indian villages. The modern Spanish dictionary (MacHale 1994) states that the term refers to "settlements made of huts or shanties." Ethnohistorical sources suggest that the word was sometimes also used in reference to the households of individual Indians (Baker 1996b). It was, however, more commonly used in reference to aggregations of residences. These presumably could include both brush- and hide-covered tepees. Unfortunately, the various Spanish observers are not known to have ever described the internal makeup of the *rancherías* that they mention.

Ute sites commonly retain evidence of numbers of standing or downed wickiups or locations of former wickiups, such as at the Broken Blade Wickiup Village (Baker 1996b) or the Schmidt site (Greubel and Cater 2001). These are usually found scattered through groves of piñon and juniper. They would also have once been present in lower riparian environments, on ecotones such as the margins of oak brush stands (Baker 1991b), and those higher in the mountains, such as in aspen, spruce, and fir forests (Huscher and Huscher 1939a). Evidence of wickiup sites no longer appears to be found in these other environments as a result of the obvious issues of differential preservation and ground visibility. It is inappropriate, though, to think that wickiups stood only in the piñon and juniper. When clusters of wickiups are found, one cannot assume that these former households were all occupied at the same time since these localities were likely reoccupied over a number years.

Patterning in the distribution of meat within one late Early Contact Period Ute household has been demonstrated archaeologically at the Roatcap Game Trail site (Baker 1991b). The archaeofauna from the site indicated that this household had, during a summer or fall occupation, consistently received similar lower front-quarter portions of carcasses from no less than nine big game kills, including five mule deer, three elk, and one bison (Rood 1991). These were among the least desirable portions of the animals. This discovery not only suggested that other households were receiving other parts of the carcasses but that they were receiving the better parts. This distribution in turn suggested that this household may have consistently ranked relatively low socially in the distribution ladder and thus in the involved social structure. This ranking would have been at the kin-based level and perhaps in relation to communal hunting practices involving multiple households (Baker 1991b). This manner of distribution appears to have continued on into the Late Contact phase (Baker 2005b:8/25).

In the baseline prehistoric context the commonly noted sites with indications for former clusters of wickiup-sheltered households were likely occupied by only one or a few related households at any one time. It would be inappropriate to assume that such sites evidencing multiple households developed through a simultaneous occupation by many such households in the manner of the large and much later rancherías with tepee-sheltered households. The latter were temporary aggregations that formed in relation to specialized task groupings, such as buffalo hunting on the Plains, or near the agencies on ration days. These are documented photographically during the Ute's Reservation experience but were not the common settlement pattern. In his descriptions of the Southern Numa, John Wesley Powell commented on this aspect of the Numic settlement pattern. His comments are germane to consideration of the traditional Ute settlement pattern.

The camp-ground is generally selected in the vicinity of a spring or stream of water and in a grove which furnishes partial protection from storms and affords fire-wood in abundance . . . It is very rare that a site for a camp is occupied a second time and though they all go again year after year to camp near the same spring or small stream they invariably seek a new site for their bivouacs each time. When they leave a camp their bivouacs are not destroyed and so on coming to a customary camping place of the Utes, it gives the appearance of having been occupied by a very large tribe, and persons are easily led to suppose that thousands have been encamped there when in fact perhaps a small tribe of a dozen families have been the only persons who have occupied the ground for many years. (Fowler and Fowler 1971:53)

In keeping with Powell's observations, such sites as the Broken Blade Ranchería (Baker 1996b), or the Rifle Wickiup Village (O'Neil et al. 2004) most likely grew by accretion over a number of years from repeated occupations by a few households that annually established new houses within the same favored grove of piñon and juniper or along a mountain stream. Such situations are also known among the Navajo of Black Mesa, Arizona, where it is reported that some 2,000 household sites can be ascribed to only nine family lines camping through time (Jeffrey Dean and Ron Towner, personal communication with Steven Baker 2005).

Prehistoric trails commonly followed drainage patterns or ridgelines in rugged canyon country, such as that which characterizes so much of the old Ute territory in western Colorado. There, prehistoric sites have long been known to occur in a linear manner along these old trails (Huscher 1939), particularly where water was available. Hibbets and his colleagues (Hibbets et al. 1979:174) documented this pattern on the Grand Mesa. Baker also found it involved in the prehistoric settlement system on the flanks of Grand Mesa (1991b:118) and in the larger settlement system about Shavetail Wash and the sites involved in the Chandler drilling program in northwestern Colorado (Baker 1995c:8-29 to 31; 1996b:5/14; 1997). The site distribution seemingly associated with the Roatcap Game Trail site on Grand Mesa suggested that multiple related households were likely present. Like the Roatcap site itself, these were likely stretched in a linear fashion along a small mountain stream with an attendant game/pedestrian trail linking them.

Archaeologists have sometimes viewed the prehistoric settlement system in the old Ute territories as one in which the short-term or ephemeral occupations are secondary special-use localities (Baker 1991b:200-201). They see these as somehow tethered to what have commonly been referred to as "base camps" or "residential bases," such as considered by Lewis Binford (1980). This concept does not work well in terms of late prehistoric Ute settlement systems (Baker 1991b:200-205). The authors are unaware of any archaeologically or ethnographically documented Ute residential base or base camp other than the individual ephemeral households as described herein.

Peterson (1977), using Powell's "grand circuit" idea (Fowler and Fowler 1971) and Goss's "fixing [of] the center of the earth" on a mountain (Goss 1972), has implied that there may have been no actual base camps or permanent residential bases in the Ute territory of Colorado. Baker's reevaluation (Baker 1988, 1991b, 2005b) of the ethnohistorical record of the Eastern Ute (Stewart 1973) is entirely in keeping with Peterson's idea (1977). It indicates that Utes recognized territories to which families regularly returned at different seasons. Among these were the nineteenth century Uncompahgre Utes' annual nuclear family dispersals to favored haunts in the high country with an ultimate return to lower elevations in and about the Uncompahgre Valley (Ingersoll 1883:97). There the family households of small kin groups established their

dispersed ephemeral households and spent the winters (Baker 1991b, 1996b, 2005b). Except for Chief Ouray and some of his headmen (Baker 2004c, 2005c) who had adobe or jacal homes, they are nowhere known to have returned to any specific base camp or residential base structure. After they obtained horses they did have to winter where there was forage for the horses but could not typically congregate multiple households for long because of forage scarcity. This issue became very important as they obtained more and more horses later in the historic period. Site locations should show changes from the baseline after the acquisition of the horse.

For the foregoing reasons the concept of "seasonal residential bases" needs to be integrated into the scheme of a regional Ute settlement system. In such a scheme the household, wherever it may be located at any given part of the year, is the residential base. The constantly moving ephemeral household is the only home base there was. The nuclear family households, as they shifted their location throughout the year, were the bases from which all of the subsistence operations emanated for the period of time it was located in a particular area, such as a favored area for obtaining plant foods or hunting. Seasonal residential bases within general home territories are herein suggested to represent the households that were the only primary elements in the traditional and contact-traditional Eastern Ute settlement system. All the available data indicate that these ephemeral seasonal residential bases were wholly untethered to any form of more permanent households. This view would, of course, have to change if someone could demonstrate (perhaps by lithic signatures?) that the pithouses such as those at the Kewclaw site (Conner and Langdon 1987) or the Yarmony site (Metcalf and Black 1991) in the traditional Ute territory are ancestral Ute. It should be noted that this view of the Ute settlement system probably does not apply to all of the Western Ute, such as those who lived near Utah Lake (1991). The latter are a very special case within this broad vision of late Ute prehistory.

Very few late pre-contact Canalla phase sites in the territory of the Eastern Ute have actually been identified as Ute. One may be confident, however, that many of the sites simply identified as late prehistoric may well have been occupied by Ute speakers. Until further markers, such as lithic signatures, are developed it will still be difficult to identify such sites as Ute with any certainty. The tell-tale wickiups that make location and identification much easier have all apparently deteriorated at that considerable time depth as suggested by the data in Table 3, page 43. As discussed, site footprints also offer some potential for learning to identify Ute households with some certainty. It is admittedly often difficult to distinguish between the Late Pre-contact and Early Contact Phase components unless there are trade items or other good dating potentials present. Among the sites that appear to be from the Late Pre-contact Phase, or at least present what seem to be wholly Canalla Phase attributes, are the Broken Blade Wickiup Village and Roatcap Game Trail site excavated by Baker (Baker 1991b; 1996b), the Oak Hill site excavated by John Cater (2001), and Component 2 at the Schmidt site (Greubel and Cater 2001) (Table 3, page 43). Although they may well be somewhat later than the date of A.D. 1540 rather arbitrarily assigned here for the end of the Canalla phase, these sites nevertheless serve as good examples of the Canalla phase profile as summarized by Reed and Metcalf (1999).

## **UTE SUBSISTENCE AND ECONOMICS**

Traditional Ute subsistence and economic strategies were similar to those generally noted for the Great Basin foraging peoples (Fowler 1986). These strategies were rooted in a hunting and gathering lifestyle which may have, at times, been undertaken on a communal basis (Baker 1991b). There are no indications that Utes of the prehistoric period practiced any horticulture as some would come to do in the Late Contact Phase (Baker 2005b). This complex subject cannot be dealt with here in detail and the reader is referred to Fowler (1986) and Reed and Metcalf (1999) for a more detailed discussion. Virtually all edible or usable plants and animals would have been gathered or hunted unless there was some practical or cultural prohibition against using a certain species. Obvious in the archaeological record are fauna typical of the Western Slope, including a variety of small game such as rabbits and rodents, as well as some fish, mule deer, elk, bison, pronghorn, and bighorn sheep. Economic plants used by the Utes included a wide variety of seeds, nuts, roots, and berries, including the piñon nut on which the Ute are believed to have been heavily dependent when they were available (Callaway et al. 1986; Fowler 1986; Reed and Metcalf 1999:154).

## TRADE AND OUTSIDE CONNECTIONS

Little has been written about prehistoric trade in the Great Basin (Hughes and Bennyhoff 1986) and very little is known about such activities among the Eastern Ute. Obsidian is the most obvious item of this kind in the prehistoric artifact inventory and suggests long distance trade. Obsidian has been shown to have come to the Utes of northwestern Colorado from sources as far away as the Mineral Mountains near Milford, Utah, and Wright Creek near Malad, Idaho (Baker 1993b:57; 1995c:7/24; 1996b:3/58-59) (Hughes and Bennyhoff 1986:242). One should expect that the Utes were participating in indigenous patterns of trade in both perishable and nonperishable commodities at the end of the prehistoric period. These would have reached throughout the Great Basin and beyond. From an ethnohistorical basis it is strongly suspected that Utes may have been trading tanned deer and elk hides and perhaps jerked meat to other people since prehistoric times. This subject is considered further from the ethnohistorical record in the consideration of the Early Contact Phase.

Historical data do suggest that Ute bands of west-central Colorado were strategically situated across, and probably controlled, major indigenous trading routes at the end of their protohistoric experience and probably for quite a long time (Baker 1994). Scholars often overlook the fact that there were long-established trade connections among all of the North American Indians, including those of Mexico. These routes and partnerships were not necessarily severed just because the Spanish sustained a ragged little colony in New Mexico in the seventeenth century. They would have gone on at least somewhat as before, perhaps with accelerated activity and new product lines, such as horses and other trade goods. The advent of the colony did not necessarily initiate the demand for horses or other goods from Mexico among the Native Americans north of what is now the U.S.–Mexico border. This is another subject that truly needs much more study and that has the potential to offer huge new insights into the protohistory of the western United States.

## DEMOGRAPHY

There are no reliable ways to generate anything more than rough approximations of the populations of Eastern Ute bands at the end of the prehistoric period. It is sometimes possible to speak with more certainty to prehistoric demographics in areas with more sedentary populations and obvious numbers of prehistoric households that can be archaeologically measured, such as with pithouse villages or Pueblo sites. Native American populations were greatly reduced by the various combinations of epidemic disease, internecine warfare, and the slave trade during early protohistoric times. Epidemics were capable of altering aboriginal populations at exponential rates and were clearly doing so for the Ute bands in the nineteenth century (Baker 2005b). They could have had effect on some Ute bands' populations long before any specific bands had even appeared as minor blips in the documentary radar of the Spanish. By the time that the first actual census information appears in the 1860s, the Ute populations were certainly but shadows of their former selves.

Ute demographics are discussed in some detail by Baker in regard to the Uncompahgre and Tabeguache bands (2004a; Baker 2005b). It does seem safe to say, however, that in comparison with more sedentary peoples, Eastern Ute populations could never have been large or particularly notable on the archaeological landscape. The paucity of data pertaining to the Ute archaeological baseline is evidence of this. This lesser position may not have always been the case among the Western Ute. Reed and Metcalf (1999:162-163) have discussed some of the demographic issues but again have mixed both purely prehistoric data and inferences with those of the protohistoric and historic periods. This situation demands that their conclusions be viewed cautiously. Although some of their suggestions for archaeological study of Ute demography might theoretically have merit, they will prove extremely difficult to implement. Leland (1986:609) suggests that the entire Great Basin might have had an aggregate population of around 40,000 in late pre-contact times. The total pre-contact Ute populations of Colorado and Utah have been estimated to have been as high as one per square mile (Callaway et al. 1986:352). Though some selected areas, such as along the Wasatch Front in Utah, may conceivably have had a high population level, overall such levels are probably nowhere near correct. Dobyns (1966) suggested that there was a hemisphere-wide depopulation of 20 to 1 in the post-contact time frame. This estimate was probably much too high for the Great Basin peoples. By 1878 the government's best estimate of the total Ute population in Colorado was 9,626 (Baker

2005b; U. S. Office of Indian Affairs 1863-1880). Ingersoll (1883:105), states that there were only 3,000 plus Utes in 1874, but he may well have been speaking of those attached to the Los Pinos Agency, where he seems to have made most of his observations. If one applies Dobyns's ratio to the government figures of 1878, then the high population for all of the Eastern Utes might have been an astronomical 200,000. This number is as big as or bigger than the modern population of western Colorado. If one goes with Leland's figures, then there might have been a depopulation ratio of only 3.4 to 1 or somewhat less than 40,000 (Leland 1986:609). Both of these levels seem much too high. Baker (2005b) applied the two cited formulas to the remnant post-removal Uncompahgre/Tabeguache band attached to the Ouray Agency in Utah in 1890. At that time government sources list this specific population as only 1,021 (Leland 1986:611). By way of illustration to provide perspective, if one uses the 20 to 1 formula then there might have once been some 20,000 Utes in their original west-central Colorado territories. With the 3.4 to 1 formula there might have been as few as 3,471 in that area at the end of the pre-contact period. Although difficult to say with any measurable precision, the 20,000 figure seems considerably high, and the population of these two groups was probably closer to the lower numbers.

## IDEOLOGY

Archaeological expressions of the prehistoric Ute ideology and cosmogony are almost unknown except for rock art, decorative items such as beadwork, and burial and mourning practices. Considerations of Ute rock art today depend largely on the work of Buckles (1971) and Cole (1988; 1990), who have dominated the subject in western Colorado. As outlined by Reed and Metcalf (1999:164), Cole utilizes a taxonomy of Ute rock art styles originated by Buckles, who attributed rock art of the Uncompahgre Plateau area to the Ute when historic themes were represented. This practice recognizes two different rock art styles. The first is the Early Historic Ute Indian style, which is said to date between ca. A.D. 1650 and 1830. How the dating was arrived at is unknown. The second is the Late Historic Ute Indian style, which dates ca. A.D. 1830 to 1880. While Buckles observed some degree of continuity in rock art styles from the historic period back into prehistory, he did not venture to suggest how far back in time this continuity extended. Cole (1988:221) does not believe there are sufficient similarities to demonstrate any cultural ties between the rock art of the earlier Uncompahgre Complex and that of the historic Ute. Reed and Metcalf (1999:164) suggest that the distinctions between the two may lend support to the notion that the Ute were not present in the area in the more remote past and only immigrated to the area some time after the Archaic Era. They may well be correct.

Rock art is a notoriously difficult arena of archaeological study that requires considerable experience to do well. At this point in the regional research on rock art, it is critical that any suggestions that the Ute moved into the region at a relatively late point in prehistory be cast from very competent analysis involving steps such as outlined by Reed and Metcalf. It is possible that there are indeed two distinctive traditions involved in the regional rock art, namely one that is Ute and another that is not. It is also possible, though not likely, that the distinctions noted by Cole (1988:221) are only the product of wrenching cultural changes that occurred among the Ute following the end of the prehistoric period. Prehistoric Ute rock art, of course, depicts absolutely no European-derived themes or objects, such as the common horses and guns of post-contact times.

Burial and mourning practices are also obviously expressions of ideology and cosmogony. They can be studied to good effect through archaeology (Fike and Phillips 1984; Nickens 1988b). Thus far it has not been possible to readily identify prehistoric or protohistoric Native American burials from the old Ute territories as being Ute or any other linguistic or ethnic group. Genetic and physical anthropological studies of such issues are improving and are likely to be ultimately capable of being able to differentiate Utes from other peoples. Review of such considerations is, however, outside the scope of this chapter. Paul Nickens (1988b) has summarized what was known of Ute burial and mourning customs. From his information it appears that the typical Ute burial practice of the late prehistoric period was probably of the crevice or a similar type of interment. The typical interment included grave goods or offerings, presumably for use in an afterlife. The lead author of this chapter has assembled a file of unpublished data on Ute burial and mourning practices. These data supplement those assembled by Nickens and, quite predictably, indicate that by the 1870s Ute burial practices were evolving toward the contemporary Christian pattern in use today. Late

Contact phase mourning customs are discussed by Baker (2005c) in relation to the death of Chief Ouray in 1880 and related archaeological evidence from his ranch at 5MN847.

## **Phase II-Ute Early Spanish Contact "Rivera" Phase and Protohistory (ca. 1540 to 1820)**

### **GENERAL PHASE DESCRIPTION**

Traditional Ute culture systems of the Late Pre-contact Canalla phase probably persisted long into Ute protohistory within the Early Contact phase. It is from roughly this point in time that myriad changes unevenly commenced among the Eastern Ute peoples during the seventeenth century after the establishment of the Spanish Colony in New Mexico. The Utes' Early Contact phase was accordingly cast by the regional Spanish presence and related Native American influences up to the time when the Ute territories passed into the jurisdiction of the Mexican government in 1820 (Malouf and Findlay 1986:499). At that time the Early Contact phase gave way to the Middle Contact Robideau phase in their archaeological tradition.

The date of 1820 assigned here for the end of the Early Contact phase is a revision of earlier dates for this (Baker 1988, 1991c, 1993a, 1996b). Previously, a date of 1775 was used for its end. After completing a detailed review of the concept of protohistory and further contemplation on Ute ethnohistory for this chapter, it was realized that the former date actually marked the end of protohistory for most of the Ute groups and was too early for the termination of the Early Contact Phase. There are no precise time lines for the start and end of any of the phases. There were, however, clearly blocks of time when one cultural profile was fading and the other evolving toward the classic attributes that hallmark the next phase of change in Ute culture history and its attendant archaeological culture.

Leacock (1971:vii-x, 11) has given a generalized description of the Early Contact phase as it enfolds both the indirect protohistoric effects and the ones which resulted from face-to-face and documented contacts in the post-contact experience. During this first portion of the contact experience a contact-traditional culture began to develop, often with hostilities involved in the context. Leacock states:

Phase II commences with early contacts, either directly with explorers, missionaries, and traders or indirectly with goods traded through neighboring tribes. The extent to which a reintegration of Indian institutions followed these first contacts has often been underestimated. It has been all too common for anthropologists to assume that the cultural information they were gathering from elders about life styles that stretched back to the beginning of the nineteenth century and even earlier represented pre-Columbian society. (1971:11)

The term *contact-traditional* describes the various adaptations that Native American cultures underwent in response to the myriad new foreign influences that accompanied the contact experience. Core traditions and lifeways survived but were adapted to accommodate foreign influences and material elements, such as the horse and trade goods. The degree to which cultures evolved into contact-traditional ranged greatly. They could and did sometimes persist unchanged for long periods. Key attributes of such cultures are the preservation of many core cultural traditions and particularly the retention of political and economic autonomy. Once these elements were lost, contact-traditional cultures withered and generally faded away (Leacock 1971:viii-ix, 11; Lurie 1971:423-425). Nancy Lurie spoke further about the nature of contact-traditional cultures:

Although some tribes succumbed completely in the course of the white contact, for the majority there was a long period in which to adapt and enjoy material enrichment. The fur trade, beginning before the seventeenth century, spread from the eastern forests across the wooded northern boundary of the Plains into the Plateau country. By the beginning of the nineteenth century it brought new goods by ship to the Indians of the Northwest coast. Eventually, the trade was carried across the Arctic. Meanwhile, Spanish horses entered the Plains area to help produce a complex and highly mobile way of life dependent on the great plants and animals of European origin as well as important material objects became firmly incorporated into varying cultures of the resident Indian groups.

Today, when Indian people look back to a golden age, it is not to the period of pristine aboriginal conditions, but to the contact-traditional cultures. For some Indian groups, precontact conditions are all but forgotten. In only a few remote Eskimo communities were white men first encountered by the grand-parents of living individuals. (Lurie 1971:424-425)

Colorado's Ute people would in time develop a contact-traditional culture that, at its high point, emphasized the horse and the evolution of a very Plains-like equestrian profile (Baker 2003b, 2004b, 2005b; Callaway et al. 1986; Shimkin 1986; Stewart 1966a, 1971, 1973). The attainment of such a cultural profile would eventually bring them into their post-contact "golden age" as considered above by Lurie. Attainment of their contact-traditional equestrian profile was not sudden, painless, or simultaneous for all the Utes. It took many years and dramatic historical events to bring about. Further, it flourished for only a few decades before it was virtually destroyed. Its evolution did, however, begin in the protohistoric portion of their Early Contact phase.

For the Ute generally, the Early Contact phase commences with the first known European *entrada* into the areas south and east of Colorado, namely that of Coronado in 1540 (Bolton 1991 [1949]; Flint and Flint 2003), whose presence on the Plains is generally credited with formally extinguishing the regional prehistory. This influence does not mean that many aboriginal groups did not go on just as before in what was essentially a prehistoric mode. The arrival of the Spanish did set in motion the events that led to the conquest of the Native Americans of New Mexico in particular. New Mexico was subsequently colonized during the seventeenth century and, with the possible exception of the horse, the colony introduced the first alien elements into the regional cultural landscape. At least some horses may well have come to the Indian peoples of the Southern Plains from Mexico prior to the establishment of the colony. The Indian wars and the changes that the Spanish presence initiated in time combined with those that attended the nineteenth century expansion of the United States. These forces together ultimately extinguished nearly all vestiges of the prehistoric and contact-traditional lifeways of Colorado's indigenous Native Americans, including those of the equestrian Ute.

Despite the need to consider which of the Ute bands may have actually been involved in specific post-contact events, it is nevertheless possible to address these matters in a more general vein here. For the Ute generally, the Early Contact Phase includes effects of both a protohistoric and historic nature. The phase wanes by about 1820 with the participation of all bands of the Eastern Ute in a largely equestrian lifestyle and the florescence of the fur trade. These events ushered in their Middle Contact Robideau Phase and more constant face-to-face contacts. Key and complex issues of the protohistoric portion of the Ute's early contact experience can only be touched on herein. The issues are only beginning to be detected and are far from resolution. Critical among these are the nature and constancy of Ute participation in events in and around the Spanish colony of New Mexico in the seventeenth and eighteenth centuries and the advent and role of the horse in Ute culture during this period. Understanding of these two issues is crucial in modeling for the effects of Spanish contact on the Ute as a whole during the Early Contact Phase. Effects directly emanating from the Spanish themselves did not force all the major Ute cultural responses in the early period. The actions of other Native Americans appear to have forced the first significant Ute cultural responses of the protohistoric and historic frames.

Although members of some Ute bands did come into direct contact with the Spanish during the seventeenth century, the references to them are generally fleeting (Richie 1932:18-22) and usually refer only to Utes generically. In addition, these references are commonly made in regard to warfare, depredations, and trade. This implies the presence of special task groups, such as war and slaving parties, and they would have been composed only of adult males. They seldom imply more intimate associations, such as would happen with the movement of the households of entire bands to be near the Spanish settlements. The early references to Utes were not made by people who were actually among them. Until Rivera, and then Domínguez and Escalante, actually entered deep into the Ute dominions, such references appear to relate to such special task groups who were usually far from their home territories. By simply mentioning Utes at all, the record could conceivably be read, and often has been, to indicate that all the Ute people were collectively in a post-contact



historic context in the early seventeenth century. This unanimity is far from the case. The bulk of the Ute bands appear to have remained in a protohistoric mode for quite a long time after the Spanish appearance.

## ETHNOHISTORICAL CONTEXT

A contingent of Utes, which have been said to be Yamparica (or of the Yampa band), appeared on the northeastern borders of the New Mexico colony perhaps as early as 1705. They were accompanied by some Shoshone-speaking Comanche. Seemingly in league together, these two groups had left what were apparently their traditional territories in northwestern Colorado and southwestern Wyoming, respectively (Figure 2, page 35; Figure 4, page 47), probably in order to engage in the escalating internecine conflicts that were by then engulfing the Plains or to escape from hostile threats within that general context (Hafen 1948:55; Richie 1932:19; Schroeder and Stewart 1988:412; Secoy 1953:28-29; Simmons 2000:31; Thomas 1932:57-84; Tyler 1951:132-161). They appeared on the frontier of the Spanish colony early in the eighteenth century but not as a fully mounted equestrian group. They were described as one where dogs were still pulling the tepees and many, such as women and children at least, can reasonably be presumed to still have been walking (Kessell 1987:371).

It has been suggested that they were actually pushed out of their home territories by Siouan pressure and this might or might not have been the case (Hafen 1948:55). This oft-cited and commonly accepted idea of a close relationship of some Utes joining with the Comanche in conducting early eighteenth century depredations has been disputed by M. K. Opler (1971:274) and, even if true, could certainly not have involved all of the various Ute bands. Kessell (1987:370) supports the notion that there was some form of alliance between the Utes and the Comanche and describes how these two specific groups had, by about 1720, so successfully pressured the Jicarilla Apache that they had them "begging for baptism" while the Spaniards were left "cursing their barbarity." Relations between the Comanche and the Spanish routinely alternated between peace and hostility. By about 1730 these newcomers to the region had displaced the Plains Apache and come to dominate their former dominions over a huge area, including the plains of Colorado and New Mexico. They then effectively controlled all trade between the Spanish colony and the peoples of the Great Plains up into the late eighteenth century at least (Kavanagh 2001:886).

It now appears that many of the early references to the Utes were made in relation to those who first appeared out of the far north with the Comanche and the more southern of the Colorado groups who were closest to the colony, particularly likely including the Moache (Simmons 2000:31). For the most part, however, some Colorado Utes were only occasionally making forays southward toward Santa Fe (Beck 1962:27; Richie 1932:51). That pattern seems evident in the records of the period. Thus, there were clearly some Ute speakers who were engaged in interaction with the Spanish in the seventeenth and early eighteenth centuries and were embroiled in the internecine wars that raged about the borders of the colony. There are no indications at all, however, of any large-scale participation by the bulk of the Utes. This absence becomes quite evident in regard to the Pueblo Revolt of 1680.

The Pueblo Revolt is commonly cited as a benchmark in the history of the Ute people. It figured prominently in two early and highly influential articles by Francis Haines, which dealt with the Native American acquisition and spread of horses. These articles were published in the *American Anthropologist* (Haines 1938a, b) and have essentially served as the Bible on the matter to this date. Nearly all modern writings on the subject of horses can eventually be traced to Haines as the primary authority. Haines quite successfully refuted a long-held and naïve assumption that the American Indians obtained their horses from animals that had been lost by the Coronado expedition. In place of that old and untenable assumption Haines advanced a premise wherein the Utes had obtained their horses by participating in the Pueblo Revolt. He believed that Utes had overrun and acquired the Spanish horse herds and thereby significantly bolstered existing herds, which he thought they had been stealing from the Spanish for many years. He believed that by these actions they rapidly became fully equestrian and primary purveyors of horses northward into the Plains and Plateau by means of a horse pipeline that extended along the Western Slope of the Southern Rocky Mountains.

During the Pueblo Revolt nearly all of the Spanish horse herds had indeed been captured by the rebels, which Haines suggested (1938a; 1938b), without documentation of any kind, included Utes. The original documents relating to the revolt, however, do not even mention Utes as being among the major players (Hackett 1942). Those who actually overran the Spanish settlements were primarily Pueblo peoples with some Apache allies. Baker (2003b; 2004b; Baker 2005b) has yet to see or be presented with any primary evidence that, other than perhaps killing a few people in their own territory, Utes played any significant role in the Pueblo Revolt as indicated by Haines (1938a; 1938b) and Schroeder (1965:56), for example. If they did they were a clear minority and did not suddenly inherit all of the Spanish horses. Those horses obviously went first to the Pueblo and their Apache allies. Jack Forbes (1959) presents a compelling case for the presence of horses and equestrian cultures on the Southern Plains well before the Pueblo Revolt. He even suggests that there was a Native American conduit that may have been supplying horses to other Native Americans from various regions of Mexico well before the revolt. The colony was, of course, receiving its own routine replenishments of horses along with other supplies from Mexico every few years. During this time horses were, according to Forbes, being stolen in multitudes by Indians in Mexico, who in turn traded them northward (Forbes 1959).

Omer Stewart (1973) and many others have long accepted Haines's view outright and believed that the role of the Eastern Ute as primary middlemen in the initial northward distribution of horses had been overlooked. Stewart thereafter advocated Haines's view. The ethnohistorical data do not, however, support this notion that the bulk of the Utes were a significantly equestrian culture in the seventeenth century. Nor does it support a view that they were ever deeply involved in any northward horse trade along Colorado's Western Slope, as discussed by both Haines and Stewart (Baker 2003b, 2004b, 2005b). The southerly bands closest to the colony, including the Moache and the immigrant Yampas, may well have acquired some meaningful numbers of horses in the seventeenth century. Although undocumented in this time frame, the Capote may also have done so. These particular bands are most likely among those Utes who were being referred to in the early period and thus may have factored into some initial dispersion of the horses. If so, they were not running them northward along Colorado's Western Slope (Baker 2004b).

The more remote Ute bands, such as the Tabeguache, were clearly not meaningfully equestrian groups even as late as the 1760s and probably later (Baker 1994, 2003b, 2004b). Additionally, several factors suggest that neither western Colorado nor eastern Utah, where there were but two potential routes for even taking horses north, could have been used as primary conduits in the horse trade. These factors are both cultural and geographical. These routes are extraordinarily rugged, dry, and generally without forage. When compared to the plains and the large well-watered mountain parks east of the Continental Divide, they are terrible routes for moving horses. Also, the Indians of west-central Colorado did not even know a route north beyond the Colorado River in 1765 and noted that the area beyond it was inhabited by hostile people with whom they had few contacts. The only northward trade mentioned was the throwing of Spanish bridles and knives across the Colorado River. These items were described as being traded through "nation to nation" (not "Spaniard to nation") until they reached the Colorado. In exchange, the unnamed people on the other side threw back tanned hides (Baker 1994; Rivera 1968 [1765]; Sánchez 1997).

Juan Rivera stated that he had to provide his Ute-speaking guides with horses because they individually had none (Baker 1994, 2003b, 2004b; Rivera 1968 [1765]; Sánchez 1997). Although Domínguez and Escalante did note a band of 80 mounted Utes living in tepees on Grand Mesa in 1776, this is a reference to an exceptional event and these were the only Ute horses noted by Father Escalante (Bolton 1950; Chavez and Warner 1976). It is one which Stewart (1966a; 1973), however, seized on as evidence of an Eastern Ute equestrian profile in the latter eighteenth century. It is also much of the basis on which he differentiated his Eastern and Western Utes. That party was described as a hunting party or possibly a war party sent to intimidate the priests. It was clearly a specialized male task group. Though tepees were mentioned in relation to this group, the fathers also noted numbers of traditional brush houses, and apparently menstrual huts as well, in the same Ute territory where they found the tepees. Like Plains groups, Utes may well have been using tepees carried by dog travois prior to acquiring horses. Tepees do not just automatically appear with equestrianism. They did, however, likely become bigger since a horse could carry or pull more weight.

Outside the close vicinity of the Spanish colony, many, if not most, of the Utes were still apparently walking well into the latter eighteenth century. They were hemmed in by the powerful and hostile Comanche on the Plains to the north, east, and southeast of their territory and by the Navajo Apache on the south. These groups were deeply involved in the slave trade and were actively preying upon the Utes, Paiutes, and others (Schroeder and Stewart 1988) for many years. These latter groups would also have taken Navajos and Comanches as slaves when possible as the balance of power shifted. Although the Utes are believed to have eventually pushed the Navajo to the south well beyond the San Juan River (Brugge 1983b:495; Wilshusen and Towner 1999), there was a virtual war zone that, except for the Pueblos and defensive Genízaro communities such as Abiquiu, was seemingly empty of Indian settlements around the Spanish colony for much of the protohistoric and historic periods as described by Bolton (1950:7-8). With regard to this no man's land, it is noteworthy that neither Rivera in 1765 nor Domínguez and Escalante in 1776 mention any Ute rancherías or Indians at all along the main path that would become the Old Spanish Trail until they had passed well beyond the Animas River (Baker 1994; Bolton 1950; Chavez and Warner 1976; Rivera 1968 [1765]; Sánchez 1997). This is with the exception of two Utes whom the priests met at the start of their trip near Abiquiu. The Animas seems to have marked the easternmost edge of the Ute occupation areas at that time and the point where at least parts of the Moache band were residing in 1765. The late eighteenth century Miera y Pacheco map (Bolton 1950) shows the Ute territory commencing in the vicinity of the Pine River just east of the Animas and north of the San Juan River.

In the late seventeenth century the territory of the Ute "nation" was described by Posada as commencing 70 leagues, or about 180 miles, northwest of Santa Fe (Sánchez 1997:9). The Ute territories thus commenced far to the north and west of Santa Fe during the seventeenth and eighteenth centuries. Although Rivera began encountering his first Ute households in the Animas drainage (Baker 1994; Rivera 1968 [1765]; Sánchez 1997), 11 years later Domínguez and Escalante did not mention even one until they had passed around the San Juans all the way to the San Miguel drainage (Bolton 1950; Chavez and Warner 1976). Does this indicate that Utes were moving deeper into the hinterlands to find security from deprivations by the Comanche and others? It is noteworthy that in October 1765 Rivera encountered Tabeguache Utes in the San Miguel drainage who were mourning the recent loss of three children who had been burned alive, apparently by Comanche raiders. This murder is likely since the Utes were at the same time also dancing in celebration of their taking some Comanche scalps (Baker 1994; Rivera 1968 [1765]; Sánchez 1997). This incident suggests that not even their mountain remoteness could fully protect the Utes from the Comanche and the impacts of the slave trade. There was thus a vast Ute territory well to the north of Santa Fe, which, except for the regions on its extreme south margins, was wholly uncharted and unexplored by the Spaniards until the latter eighteenth century. Because of the Utes' status as heathen Indians, and the fear of escalating hostilities among them, the Crown eventually began to forbid unlicensed trade with or travel to the Utes with official *bandos* (Sánchez 1997:92-93). In 1765 Tabeguache Utes actually told Juan Rivera that he was the first Spaniard to ever enter their lands (Figure 4).

Sánchez (1997:91-95) discusses the illicit Spanish trading ventures to the Ute in the latter eighteenth century after Rivera and the priests had pioneered the path northward toward the Gran Teguayo. Although some Spaniards went to the Ute territories to trade, it is not clear whether they were all actually penetrating into the Ute heartland to the north of the San Juans. Many may simply have been going as far as the frontier where they could trade with the Moache, for instance, as recorded by Rivera in 1765. It was the Moache who had bitterly objected to Rivera's passage on through the Paiute country and into the Ute heartland. The Moache feared it would harm their position as middlemen in the northward nation-to-nation trade (Baker 1994; Rivera 1968 [1765]; Sánchez 1997). By the latter eighteenth century Spaniards were certainly among some of the Ute bands in a face-to-face and documented setting. These experiences essentially ended the protohistory of all of these involved bands, namely the Moache, Paiute, Tabeguache, and Sabaguana.

There is little direct information that Utes ever became key players in the events that swirled about the New Mexico colony until early in the eighteenth century when the Utes of some kind had appeared with the Comanche (Jefferson et al. 1972:91; Swadesh 1974:25). It was not until later that the southern band(s), Moache and perhaps others, had become strong enough, apparently through acquisition of horses and weakened enemies, to force the Navajo south. Prior to that time the Spanish colony had been surrounded by

Comanche, Apache, and Navajo who, along with the Pueblos, were certainly the big players of the period (Hackett 1942; Simmons 2000:29-32; Swadesh 1974:20-25). The Utes are seldom mentioned prior to this period and would seem to have largely been victims in the slave trade (Gálvez 2002; Jefferson et al. 1972:91-92; Schroeder and Stewart 1988). The role of Indians of Ute ancestry among the *Genízaro* communities has apparently never been assessed, but they likely constituted a part of this special social group (Chavez 1979; Horvath 1977, 1979). Richie (1932:86-87) notes that by the early nineteenth century some Utes were reported as living a sedentary lifestyle on the margins of the colony. This may indeed involve *Genízaros*. In 1777 the Utes are not even mentioned in regard to the defense needs of the New Mexico colony by Hugo O'Conner in his report to Teodoro de Croix (Cutter 1993). Of the southern Ute bands, the Moache specifically had become acquainted with the Spanish by at least 1765. As suggested by the Rivera account, the Moache had likely long served as trade brokers between Pueblos and the more northerly Ute and other peoples (Baker 1994; Rivera 1968 [1765]; Sánchez 1997).

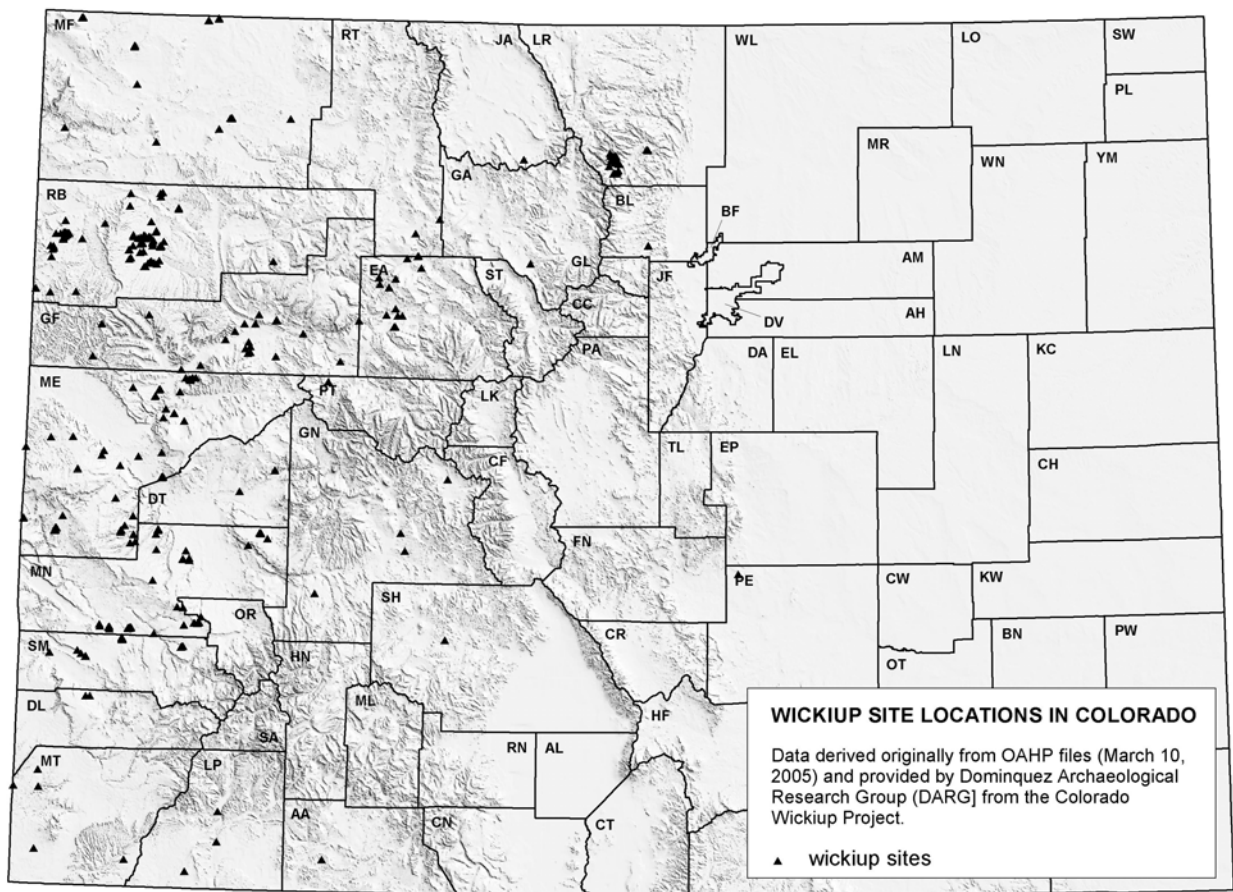
The summary vision that stems from this brief overview is that the bulk of the Eastern Utes remained in a protohistoric composure up until the 1760s at least. Although the most southerly Utes likely had some quantity of horses, most of the Ute were in no way fully equestrian groups and were living in a largely prehistoric manner. Trade goods among them were limited because the Spaniards themselves had little to offer other than foodstuffs, some beads, and a few iron tools, such as awls and knives. The major changes that occurred were certainly a result of the slave trade and, possibly, diseases. The effects of the latter are, however, quite problematic because the Utes were commonly dispersed while following their normal seasonal subsistence rounds as one Tabeguache Indian actually described to Domínguez and Escalante (Bolton 1950:37). The mountains and the Ute habit of widely dispersing in small family groups throughout their home ranges would seem to have offered some security from both disease and slave raids. Any bands who might have attempted to set up housekeeping in the no-man's land along the southern edge of the mountains would certainly have been a very exposed position. Unless they could become mounted equestrian powers, such a strategy would likely have been readily self-defeating.

Dispersal into the remoteness of the mountains far from Sante Fe would appear to have been the most effective strategy to protect themselves from the horrors of the internecine wars and slave trade. These events swirled around the colony in the eighteenth century when so many Indian enemies, other than the Navajo, had become highly equestrian and capable of preying on the Utes if they exposed themselves. Equestrian enemies would have found it difficult to use horses to locate and prey upon Utes in the mountain areas. Once they were significantly mounted, the Ute bands were certainly capable of venturing forth and fully engaging in the internecine frays out on the Plains. As will be seen, this was ultimately a fatal experience for about everyone who got involved. The situation was seemingly similar for the Navajo who utilized the fortified Pueblos of the rugged Dinétah region of New Mexico in order to protect themselves from Utes during this period (Marshall and Hogan 1991; Towner 2003).

Wilshusen and Towner (1999:360-361) have pointed out that there are surprisingly few identified Ute sites, including evidence of wickiups, in southwestern Colorado. None of those excavated in Colorado have been in that area, despite the fact that the region was supposedly once the home of at least three of the primary Ute bands. The authors credit this absence to multiple factors, including the ephemeral nature of Ute occupations, low population levels, and a history of limited interest in such sites by archaeologists. That area, however, has been awash in archaeologists for nearly a century. It is hard to imagine if the sites were at all obvious that they would not have at least been marginally noted. From this perspective it is possible to here posit another possible reason. The presence of surviving wickiup architecture is the one attribute of Ute sites that has commonly led to their discovery (Baker 2003a), as suggested by Reed and Gebauer's data (2004), which is summarized in Table 2 (page 42) and Table 3 (page 43). As indicated in Figure 5, nearly all of the wickiups known in western Colorado are found north of the San Juan Mountains (Richard Ott, personal communication with Steven Baker 2005). Additionally, wickiups have only a limited life span. Table 3 (page 43) suggests this may be no more than about 300 years at best in the piñon and juniper context. Thus, virtually all surviving wickiups are likely products of the late Early Contact and particularly the Middle and Late Contact phases. Is the perception of a virtual absence on the south flank of the San Juans correct? Is it just a result of differential preservation? Or could it be indicative of a far more constrained Ute occupation of

the region during the eighteenth century? Could it be related to the notion that as groups became more equestrian they adopted the tepee more and more to the exclusion of the wickiup? Or could it be related to the obvious difficulty in recognizing and appropriately identifying ephemeral wood structural remains, as Ron Towner suggests (personal communication with Steven Baker 2005)?

Thus, if the southern bands took to the tepee earlier, would this result in comparatively fewer wickiups on the landscape in that region? If so, then the converse should also be true; namely, that in the more remote areas where adoption of the equestrian profile was delayed, wickiup architecture might well have still been commonly in use late enough in time that it survived into recent times. This late use may be evident in what seems to be a more visible "wickiup landscape" that becomes more and more obvious the farther north and away from Santa Fe one goes on the Western Slope. The reality behind this idea seems to be emerging in the distribution of surviving wickiup architecture in Colorado's site records, as illustrated in Figure 5 (Richard Ott, personal communication 2005). The real test will be in actually achieving solid temporal brackets for these sites and placing them into the Baker model.



**Figure 5.** Currently known wickiup architecture on the Western Slope of Colorado.

The protohistoric frame is one in which wickiups would still have been the primary residence because hide tepees were not seemingly in heavy use prior to the advent of a significantly equestrian profile. It is known that Utes were using dogs as beasts of burden in the seventeenth century when they were still not using many horses (Tyler 1951:43). Wickiups were still in common use along with some tepees in this period. It may reasonably be suspected that the Utes were taking advantage of geography and using the mountains as sanctuaries against the warring and slave raids. This practice is actually hinted at in the Rivera diary when one Sabuagana stated that he was hiding from the Spanish (Baker 1994; Rivera 1968 [1765];

Sánchez 1997). In retrospect, instead of one's seeing the Spanish colony as this huge new influence on the Utes, it is perhaps more appropriate to cast a view in which the Spanish were only the instigators, whereas other Indians, and not just the small group of Spaniards, had the most immediate and direct impacts on the bulk of the Utes. Although the colony clearly had a huge and sudden impact on the Pueblo peoples, the role of the colony itself may sometimes be overemphasized in considering some Native American culture change. The colony was, however, a very small and poor little outpost that had little to offer other than horses and livestock, foodstuffs, and a few new and exotic goods, including iron tools. The historical record (Sánchez 1997) suggests that the iron tools were likely quickly accepted by the Utes. The colony did have horses, but as discussed here, so did Mexico. Mexico had many horses, which were coming to the region, not just by way of the colony, but seemingly on a Native American horse pipeline that may have carried other goods as well (Forbes 1959). It is often times far less work to take the easy perspective and view events on what is now the American side of the modern border with Mexico in sort of a vacuum and presume that all started and ended with the little New Mexico colony.

### **PROTOHISTORIC AND OTHER EARLY CONTACT PHASE ALTERATIONS TO THE CANALLA PHASE ARCHAEOLOGICAL CULTURE**

How was the Utes' prehistoric cultural profile altered by the Early Contact experience and particularly by the archaeological culture associated with it? The protohistoric portion of the Early Contact phase should reflect both changes and continuities in its Canalla phase. The following points explicitly *do not*, however, apply to any of the Ute bands that might have attained a fully equestrian profile and might have been ranging far from their original homes or to those, such as the *Genízaros*, who were living in a sedentary manner in and about the colony. The considerations here would also certainly not pertain to those Yamparica Utes. The Yamparica are believed to have moved far south to New Mexico (from their original territory in northwestern Colorado?) with their Comanche allies at an early date. It might also exclude the Capote, who are commonly attributed to original territories in Southern Colorado but who are absent from specific mention from the early Spanish references to this area.

Firm archaeological data are still scarce for this as well as all other Ute archaeological phases. It is still possible to make some assumptions about changes that likely did or did not occur in the Utes' Canalla phase baseline during their protohistory. These changes can be anticipated from Ute and comparative ethnohistory as well as from what we do know of the archaeology. They are offered as a predictive model of this time and frame of culture change, which can be tested archaeologically over the long range. For the most part the traditional Ute technologies would have remained unchanged. Except for a few rare Spanish trade items, particularly foodstuffs and iron knives and awls (Sánchez 1997), the material inventory was that of the Canalla phase. Weapons emphasized the bow and arrow with Desert Side-notched lithic arrow points. There were still flake tools, Uncompahgre Ware pottery, baskets, and ubiquitous expedient stone tools, such as milling stones, manos, and hammerstones. The lithic signatures were likely those of prehistory and the old household plan, and the house type would have remained unaltered from those described earlier for the Canalla phase.

Ute demographics and territorial distributions may well have been altered during this period, conceivably in far more substantial ways than they had been during prehistory. Nothing indicates that even the prehistoric period was static, and it is commonly believed that the Utes moved into the Colorado and Utah areas rather late in time (Madsen and Rhode 1994). During their protohistory there was not any particular pressure upon their political autonomy or territories by either the Spaniards or other Indians. Land was not the issue or the commodity being sought as it one day would be. The severity of territorial shifts would have been proportional to the locations of individual territories and their exposure to the Spaniards and other hostile Indians. In this regard disease and the slave trade may have exacted some significant demographic tolls. The slave trade may well have also forced movement into more remote and inaccessible locations, just as it did for the Navajo. Although horses had begun to be introduced, most of the Ute bands were nowhere near fully equestrian. They had an emerging contact-traditional culture and were living pretty much in keeping with the Canalla phase baseline in terms of sociopolitical structures, subsistence economies, and technologies. New opportunities for trade were developing, including the slave market.

While difficult to gauge, the ideology was probably much like that of the Canalla phase. A limited range of European-derived trade items can be expected to occur in some otherwise traditional Canalla phase burials. Rock art began to show new elements, most typically horses but with only traditional weapons such as bow and arrow or lance and shield. Depictions of Spaniards may begin to appear but Indians with firearms would not be protohistoric. The Ute are not known to have been among the armed equestrian groups of the eighteenth century (Mitchell 2004; Secoy 1953).

The advent of the horse eventually did lead to some larger consolidations of bands, at least on a seasonal basis. For the individual family household that suddenly obtained one or more horses, the animals brought an entirely new set of responsibilities. Horses would have required specific and entirely new responses, such as finding feed and water for them every day and protecting them from predators, including other Indians. Unless one has been a horse owner, the extent of this problem may not be taken too seriously by some scholars. It was, however, an issue of monumental proportions in the semidesert area of western Colorado. Forced changes might entail new settlement patterns that would require tethering the household to environments that could meet the needs of horses over the needs of people. The locations where grass and water were found soon were stressed by overuse as more and more horses were pastured in them. Particularly hard hit were riparian bottom lands, to the extent that in the 1870s Utes were known to stockpile cottonwood bark to feed horses after the local forage had been denuded (Baker 2005a, b).

Households would also have to adopt new technologies to provide the tack necessary to utilize a horse (Malouf and Findlay 1986; see Shimkin 1986). Having a horse even forced new travel routes because many of the old pedestrian trails threading the difficult western Colorado landscape were impassable for horses. As more and more horses were obtained, old pedestrian-only routes would have been abandoned along with their associated settlement systems. The latter would have become focused along the equestrian routes. Rock art galleries associated with the old pedestrian routes may thus have few or no elements from the protohistoric or historic contexts. Depictions of new themes, particularly of horses, would likely indicate equestrian routes. Specialized defensive strategies for protecting the horse would also have been devised. The genesis of equestrianism did occur during some Eastern Utes' protohistory but was not well evolved among all of them until near the end of the historic portion (ca. 1775-1820) of their Early Contact phase. Households would have to learn to take care of one or two of these new animals before they could successfully take on the responsibility for any larger numbers. For the Moache and other more southern groups this occurred earlier in the eighteenth century. Although some bands were likely forming specialized equestrian task groups, such as hunting and raiding parties, most of the households, or at least portions of them, were still walking. They would have been utilizing a traditional pattern of nuclear family households and a combination of seasonal hunting and gathering subsistence rounds.

New economic opportunities and accompanying liabilities came with the slave and horse trade and the emerging trade in Spanish material goods. These things would have introduced an interband or even intraband competitiveness that had likely not been present in the prehistoric context. At its worst, this could have taken the form of internecine hostilities among Ute groups. No documentary evidence of this is known, however. The competitiveness for trade is clearly evident in the Rivera diary when 1) the Moache objected to the Spaniards going forward deeper into the Ute dominions because it would spoil their trade advantages, and 2) what seems to have been a reluctance of a Tabeguache guide to take the Spaniards to the Sabuaganas (Baker 1994; Rivera 1968 [1765]; Sánchez 1997).

Except for the horse, the other goods obtained from the Spaniards were likely integrated into existing cultural systems by simple replacement in a contact-traditional manner, such as an iron knife replacing a stone one. Horn (1999) has drawn upon the useful concept from Rogers's (1990) study of the Arikara contact experience. Rogers refers to a "Maintenance Period" in which the "aboriginal culture system remained intact despite external pressures" and the integration of European trade goods. In addition to the highly desirable horses, tobacco, and foodstuffs were among the most popular trade items of the period. Both the Rivera and the Dominguez-Escalante parties shared food with the Utes. Rivera carried tobacco, pinole or corn meal, flour, and corn with him to help him "win them over" (Rivera 1968 [1765]; Sánchez 1997). The Rivera diary makes it clear that the native pipeline was carrying Spanish goods northward, including bridles and knives,

nation to nation (Baker 1994; Rivera 1968 [1765]; Sánchez 1997). In 1776 Domínguez and Escalante gave gifts of hunting knives, or *belduques*, an iron axe, strings of white glass beads, tobacco, and food, which was probably pinole. They also offered a woolen cloak to one Ute. They traded a few lame horses for sound ones and beads for jerky among the mounted band of Sabuaganas on Grand Mesa. In addition to jerky, Utes offered deer skins and manzanita berries in return. Some of the Domínguez and Escalante party also attempted to trade some undescribed items for Indian weapons as a result of their fear of encountering Comanches. These items were likely bows and arrows (Bolton 1950; Chavez and Warner 1976). Trade goods carried in these early expeditions were obviously quite simple.

Sánchez (1997:94-100) offers an excellent discussion of the very early traders into the Ute country and this discussion is cast from his volume. A very few of these traders followed after Rivera in 1765 and before Domínguez and Escalante in 1776. After the priests' trip, illicit trade developed rather rapidly and soon included trips as far north as the Salt Lake in Utah's ancient land of Teguayo. Inventories of trade goods were documented in regard to the legal cases that the Crown made against illicit traders to the Ute country in the 1780s and 1790s. The face-to-face and documented contacts are the beginning of the post-contact historic portion of the Utes' Early Contact phase. Goods carried at that time included mules and horses to barter for slaves or to ransom captured Spaniards. Corn or wheat could be used to buy a buckskin shirt, and iron knives, both large and small, and awls were items consistently used in trade for pelts. Corn, rolls of tobacco, flour, and probably pinole continued to be mainstays in the trade, along with woven goods. A common item provided by the Utes was tanned buckskins, or *gamuzas*, which were traded for corn.

Because buckskins were such a common item of trade, their production was probably a relic of prehistoric Ute technology and trade with the Pueblos. It found a new market demand in the Spanish colony. This increased demand likely intensified hunting pressure on deer and elk in the old Ute territories and likely placed new demands on Ute women for increased production of finished skins. This demand may also have created a need for more women, children, and Indian slaves among the Utes themselves. Ron Towner notes that the Navajo were also clearly involved in the skin trade and suspects that they may have pressed into the San Juan Mountains from the south for deer and elk and thus increased conflict with the Utes in that region (personal communication with Steven Baker 2005). Overall, however, the goods that seem to have been flowing to the Utes in this early period were not likely to have significantly altered traditional lifeways and cultural institutions to a degree that could be detected with archaeology. Surprisingly, it does not appear that beads were common in the inventories, and certainly no guns were being traded as they were even then quite scarce even among the Spanish (Richie 1932:79). By the latter eighteenth century many of the Utes were essentially in the emerging "post-horse, pre-gun" cultural profile (Secoy 1953). However, a few Ute bands on the margins of the Ute territories may have already achieved meaningful equestrian profiles during the eighteenth century. Writing about his memories from soon after 1800, Zebulon Pike described the Utes as follows:

The Utahs wander on the sources of the Rio del Norte; they are supposed to be 2,000 warriors strong are armed in the same manner, and pursue the same game as the Kyaways [Kioways], but are a little more civilized, having more connection with the Spaniards with whom however they are frequently at war. They are at this time at peace with them but waging war with the Ietans [Comanches]. (Richie 1932:79)

In drawing his comparison of the Utes with the Kiowa in terms of armaments, Pike noted that they were both armed with bows, arrows, and lances while following the buffalo (Richie 1932:79). Unfortunately, it is not known to which Ute band Pike was referring. It might have been the Sabuaganas/Uncompahgres by this time or one of the southern groups.

The last years of the eighteenth and first two decades of the nineteenth century are a blank period for the Utes in terms of documentary references to the specific bands. Even though they were no longer in a protohistoric mode, it remained a period of minimal contacts between the Spaniards and the Utes, just as it was for the more remote peoples in the Great Basin (Malouf and Findlay 1986:499). They were certainly not, however, static as they witnessed the further evolution of the equestrian profile. With the rise of their



equestrian profiles they assumed more of the profile of the classic Plains societies. It was in large measure a time of undocumented "Indian business" as they began to engage heartily in the internecine warfare, often venturing out into the Plains to mix it up with the Comanche and other groups, including the Arapaho and Cheyenne, over horses. What would the stakes have been in these encounters? One can only haul so much booty, but horses, women and children as slaves, specific trade goods such as guns, and pride were likely among the most frequently sought things.

The advent of the equestrian profile would have allowed the start of the annual fall buffalo hunts and raiding eastward onto the Plains, as were documented later in the nineteenth century. All of this activity led shortly to a highly prosperous "golden" period (Leacock and Lurie 1971) for the Utes under the newly installed Mexican government. This prosperity occurred as they developed an equestrian base to their contact-traditional culture and engaged heartily in the fur trade (ca. 1820-1840s) without having particular demands placed on their territories by the Spaniards. Nearly all Native American peoples ended their Early Contact phases with markedly reduced populations and with considerable stress being exerted on core institutions of the contact-traditional cultures.

### **Phase III-The Utes Middle Contact Mexican "Robideau" Phase (ca. A.D. 1820-1860)**

#### **GENERAL PHASE DESCRIPTION**

The Utes' Middle Contact phase would have been hallmarked by a brief cultural florescence between about 1820-1860. This period witnessed the rich economy, as well as the difficulties, attending the fur trade and the high level of development of the equestrian profile. The Utes' role as brokers and middlemen in the Indian trade reached its zenith during this time, trade goods became more common, and core contact-traditional cultural institutions, including economics, began to shift significantly. The phase ended when the Ute bands engaged in their first meaningful dealings with the U.S. government in the 1860s. These led to their first reservation experiences.

#### **ETHNOHISTORICAL CONTEXT**

The settlement of the Louisiana boundary dispute between the United States and France in 1819 brought the United States to the border of Mexico's holdings and the very threshold of the Ute territory (Richie 1932:91). The Ute territories passed into the jurisdiction of the Mexican government when Mexico achieved its independence in 1821. This change "robbed the Yuta nation of a dependable and unencroaching ally on the south" and commenced the Utes' Middle Contact phase of cultural change. The Mexican government enacted sweeping changes with regard to the status and treatment of Indians, and, except for some "who went about shamelessly naked," they were generally granted citizenship (Spicer 1988:103). The Ute dominions were, however, situated at the very outer margins of the Mexican territory, and these new policies had little practical effect on them. There was still little pressure on their political autonomy, economy, and territory. The basic changes in the Ute dominions emanating from New Mexico were the result of an increase in contacts between traders and slavers who ventured northward in ever increasing numbers. The Old Spanish Trail was established through Ute territory in the early nineteenth century and became a major route of commerce between California and New Mexico (Sánchez 1997). This corridor facilitated trade deep into the Great Basin and helped to expand the trade in Indian slaves.

Antoine Robideau obtained a trading license and established a trading factory, Fort Uncompahgre (aka Fort Robideau), near the confluence of the Gunnison and the Uncompahgre rivers in west-central Colorado in about 1828 (Barton 1989; Wallace 1953). This event was a major one and indicated that relations with the Utes were by then friendly enough that such a step was finally feasible as well as permissible by the Mexican government. By about 1830 the more remote Utes to the north had been pacified enough that Robideau could establish yet another trading post, Fort Robideau (aka Fort Uintah), on the Green

River in northeastern Utah (Barton 1989). These establishments brought Utes into more continuous contact with Spanish traders and engaged them in ongoing participation in the fur trade.

As the era of the American fur trade commenced, the Utes were introduced to a host of new influences and modes of Indian-white contact and interaction. In addition to the old Spanish ways of dealing and the types of goods they carried, the Utes began encountering their first Euroamericans within their territories or on their margins. These fur-seeking newcomers to the old Spanish dominions also established various trading posts in the region, including the Robideau posts, Fort Davy Crocket in the boundary area between the Utes and Shoshone in extreme northwest Colorado (Carrillo 1982), and of course Bent's Fort on the Arkansas River east of the Continental Divide (Lavender 1954; Moore 1973). The American traders brought a wider range and a greater quantity of trade goods including guns to the Utes. It also brought them into a much more demanding and competitive market arena in which conflict was common, particularly with other Indians such as the Comanche. The Middle Contact phase generally coincides with the fur trade era and witnessed the dual influences of Mexicans and Euroamericans who pushed into all areas of the old Ute dominions. John Alley (1982) succinctly discusses the Utes and the fur trade. The latter began to pose the first serious environmental threats to the Indian resource base of the region as they explored and laid the groundwork for the eventual Euroamerican settlement and development of the intermountane West (Malouf and Findlay 1986:499).

It was during their Middle Contact phase that the equestrian profile developed to its maximum among the Eastern Ute bands. Along with it came many of the classic trappings of the Plains Equestrian groups (Alley 1982; Callaway et al. 1986; Shimkin 1986; Stewart 1966a, 1971, 1973) as well as a host of newly introduced trade goods, including the first meaningful numbers of firearms to be introduced from Mexico, and particularly by the American trappers. It is conceivable that a few French weapons had made their way into Ute hands from the Central Plains by this time also. English guns initially obtained from the Northwest Company were also seemingly being introduced to the Utes from the north through the Shoshone. These English guns were at first smoothbore flintlocks known as *fusils* (Alley 1982:109). The American trappers also introduced flintlock guns that were expressly built for the Indian trade (Hamilton 1960). After 1820 percussion caps were introduced (Baker 2003a:19; Held 1970) and in time made their way into the Ute arsenal. The arrival of guns during this time frame placed the Utes squarely in the "horse and gun" profile (Secoy 1953) and enabled at least some of them to emerge from their mountain domain and enter the internecine wars of the Plains as significant players (Secoy 1953). Anne Smith (1974:20-21) stressed that none of the Ute bands were ever fully equestrian as were some Plains groups and that some women and children were probably still walking.

During the Middle Contact phase, the contact-traditional culture evolved to best accommodate the Utes' more mobile equestrian profile. With this the use of dogs as beasts of burden was likely diminished. The hide tepee would have been in common use and may have become larger because horses could now transport the heavier loads. Wickiups, while still in use as primary household shelters, would have become less and less conspicuous on the landscape. Although it would be easy to presume that the Ute settlement pattern would have been dramatically altered, this view may not be entirely correct. It certainly was not possible for large numbers of equestrian Utes to congregate for any prolonged periods in their home territories during this time because of the scarcity of forage, particularly in the winter months when snows covered the mountain pasturages. The matter of insufficient forage was serious enough that the U.S. army was unable to support sustained cavalry operations on the Western Slope in the 1870s, as indicated by military intelligence of the period (U.S. Army, Adjutant General's Office, Col. D. B. Mackensie to Adjutant General, June 22, 1880, National Archives Record Group 998, R1). Cavalry units could operate only seasonally in the area because of the shortage of forage and had to camp in the mountain parks far from where they really needed to conduct military activities. Larger band consolidations typical of some Plains groups were never achieved by the Utes. Any larger aggregations were of necessity temporary through the Middle and Late Contact phases. These emphasized specialized task groupings such as for trade, warfare, buffalo hunting out onto the Plains, or perhaps for special ceremonial events (Baker 2005b). These kinds of events attracted attention and were documented. The core of the Ute territories likely witnessed many households, and particularly women, children, and the elderly, staying in their normal ranges while fit male members, perhaps with some family

members, were out traveling about on horseback. Groups of Utes and other Indians would have at times congregated at the trading factories such as Bent's Fort in the valley of the Arkansas on the Plains east of the original Ute territories and at Fort Robideau and Fort Davy Crocket. The entire populations of households were not likely to have been on the move to these locations.

When not temporarily congregated, the Utes would break down again into their smaller family groups and gravitate to their individually favored local territories. There they would maintain some of their traditional subsistence pursuits of hunting and gathering and trapping to feed themselves and to supply the burgeoning market for furs. This behavior would have put stress not only on the target species of fur bearers, such as beaver, but on the deer and elk that had been long sought for their hides to meet the demand for buckskins. Such activities would have stressed the Ute women, who were traditionally the labor force that prepared the furs and hides as well as performed the gathering and other household duties (Baker 1991b; Smith 1974). Just what adaptations this new demand for labor would cause is not clear, but it would certainly have put a premium value on women and created a market for them as slave labor among the Ute. Although this activity is not at all well documented, it is a very likely and predictable response that could have carried through into household demographics. It also might well have caused an intensification of internecine warfare and slave raiding in order to satisfy the demand for furs and competition among households and bands to enable individual household leaders to attain higher status. One thing the horse is commonly known to have brought about is increasing competition for individual, band, or household status.

The increase in face-to-face contacts, higher mobility, and tendency to temporarily congregate allowed for much easier transmission of new diseases to the Utes. This was a relatively new experience for them and, although essentially undocumented for this phase of their history, would certainly have had a devastating impact on them, just as it did in the documented epidemics among the Plains groups. It may safely be presumed that the combination of disease, slave raiding, mobility, and increased warfare would have caused significant attrition to the Ute population. This attrition would have, in turn, begun to place increasingly severe levels of stress on families and the continuity of core cultural institutions, particularly those that were passed on orally and required close and long-term personal associations to continue.

## **MIDDLE CONTACT PHASE ALTERATIONS TO THE CANALLA PHASE ARCHAEOLOGICAL CULTURE**

In terms of archaeological potentials, some things can reasonably be predicted about this very poorly understood period, and these things might be detectable in long-range archaeological studies in the Ute homeland. Although the primary sites would remain the individual households and small clusters of kin-related households, the hide tepee would have been in more common use as more and more households became mounted and more mobile. Despite this shift toward the tepee, traditional brush architecture would have still been used, particularly as dependency structures. Baker (2003a) has discussed this in particular relation to the menstrual huts which were a ubiquitous portion of the Ute household site, as noted by Father Escalante (Bolton 1950; Chavez and Warner 1976). As more and more tepees were moved about the landscape, their brush dependencies would have been left behind at each stop (Baker 2003a).

Remains of small brush huts are still visible on the landscape of western Colorado. It is likely that many of these were menstrual huts that were left behind when the tepee was moved on (Baker 2003a; Buckles 1971; Sanfilippo 1998). Ute tepee sites in western Colorado typically lack the tell-tale rock rings (see Davis 1983; Morris et al. 1983) that characterize such sites on the Plains where they were necessary to help tether the structures in the high winds. Those wickiups still surviving on the landscape are largely from late in the Early Contact phase and the Middle and Late Contact phases (Table 2 page 42; Table 3, page 43) when the tepee was also in common use (Baker 2003a, 2005b). Where once there would have been many of the bigger wickiup houses, the record seems to have become biased toward the smaller structures because of the shift to the tepees.

The larger aggregations of equestrian households would have been temporary and located in places with abundant grass and water. In the warmer seasons these would have been high in the mountain meadows,

and in the cooler seasons they would have been at lower elevations in the canyons and valleys, such as the major river bottoms. These locations could not support prolonged aggregations without being stripped of available forage. This lack of forage would likely have forced bands to break down into individual households or small groups that could exploit more localized environments that could better support them and their horses (Shimkin 1986). This hypothesis is something that could ultimately be tested through archaeology if the sites can be found.

Unfortunately for archaeology, most of the larger equestrian camps would have been located in more moist areas where there has been heavy soil building and/or plowing. Chances of finding intact sites of this kind from the glory days of the Utes' Middle Contact Robideau phase are probably not very good. General household plans probably remained the same, however, just as noted recently from Late Contact phase tepee sites (Baker 2005b) in western Colorado. There the two hearth (Group 1B) household plan was still in use, and historical photos commonly indicate that dependency structures, such as menstrual huts and ramadas, were also still in use (Baker 2003a, 2005b; Sanfilippo 1998).

The portable material culture of the Middle Contact phase would have retained many traditional items while adding a variety and quantity of white-manufactured objects. Unfortunately, the one actual diagnostic Ute attribute, Uncompahgre Ware pottery production, was likely a casualty of the rise of the equestrian profile. Pottery production was a notorious casualty of the equestrian profile among most Native American groups. This eventuality occurred because of pottery's fragility, changing family social structures, and the increasing availability of metal cooking vessels. Basketry production was also probably negatively affected. A basic flaked lithic technology should still be evident, and there was perhaps a wider variety of lithic sources represented because people could travel faster and farther to trade. This proposition needs to be and can be tested. Lithic arrow points as well as metal ones should be present, and some of the latter might have been made specifically for trade to the Indians. Iron knives, hatchets and axes, awls, needles, and tomahawks would in time become commonplace. Flintlock guns, gun parts, gunflints, lead balls, and other related accouterments would be present. Flintlock weapons would eventually start to be supplemented by guns fired by percussion cap but not until well after 1820 (Baker 2003a).

What would absolutely not be apparent in the Middle Contact phase would be weapons that used fixed ammunition. These weapons do not appear in any quantity anywhere until after the Civil War and the start of the Late Contact phase. Other items that ultimately become common in Ute sites, but which would have been lacking in the Middle Contact frame, would be hole-in-cap tin food cans, as well as tin generally. Little, if any, glass from brown beer and spirits bottles or any other kinds of bottles would have been present. Mirrors may have been common, and some items such as hawk bells might have been present. Beads in a fairly wide number of colors and types would also be common and can be dated fairly closely with detailed research. Seed beads or Prosser ceramic buttons would not appear until about the 1840s at the earliest, as demonstrated with the Last Hour Wickiup (Baker 2003a). A common artifact on Ute sites are metal tinkler cones. Any such cones made of tin are probably, though not always, from the Late Contact period when tin became ubiquitous in the Ute inventories. Before that time such items were commonly made of brass or copper. Although one would seldom find archaeological evidence, horse tack would have been common and would be suggested by the presence of such items as rivets, pieces of bridles, and saddle and harness rings and other small European items.

After the Ute bands took on their equestrian profile and veneer of Plains traits, their archaeological cultures began to look more and more like that of the various Plains groups. With the loss of pottery production and traditional lithic signatures, it will be very difficult to differentiate a Ute tepee-sheltered household site from the tepee households of other equestrian peoples. With all of the diagnostics now dropped from Ute material culture, about the only way to determine a Ute affiliation is by a site's simple presence in the old traditional Ute territories (see Hanson 1998). Although other peoples likely moved through the margins of their territories, and occasionally penetrated them, these would again have been specialized task groups and particularly male raiding parties, such as those of the Comanche. These were unlikely to have brought their tepees and families with them into such hostile areas deep in the rugged and remote Ute territory.

Waldo Wedel, the noted Plains archaeologist, spent much of his career trying to find diagnostic artifacts of the historic Comanche and other late Plains Equestrian groups so that he could employ a direct historical approach to their ancestry. Prior to his death he conferred with this author and reported that his search had failed; he had found no such signatures in the material culture that he had examined (Waldo Wedel, personal communication with Steven Baker ca. 1990-1992). He said that he had abandoned all hope of ever being able to differentiate these kinds of sites on an archaeological basis. Thus, in the old Ute haunts of western Colorado, it is reasonable to assign likely Ute associations to sites with reasonable accuracy, based on their nearly exclusive use of this territory. It will not be as easy to do so on the Eastern Slope, where historic equestrian peoples of many ethnic and linguistic backgrounds congregated in the Middle Contact phase during the middle decades of the nineteenth century. Jeffrey Hanson (1998) and Elizabeth Morris and her colleagues (1983) have also discussed the limited potentials for this kind of work with the various Plains groups. This subject is explored more fully herein in relation to the Comanche, Arapaho, and Cheyenne.

There are no estimates of Ute populations during this phase, but it is known that by the 1860s smallpox had reduced them significantly (Baker 2005b). Despite this, the Utes were still considered a strong, viable, and vital people when whites first began to settle in eastern Colorado following the gold strikes of the late 1850s. They were still politically autonomous, independent, and in control of their territories. This image would very rapidly change, however, and within a few years the Ute bands, one after another, became mere ghosts of their former selves and no longer independent political or economic entities (Jorgenson 1964, 1972). Their glory years ended abruptly with the advent of white demand for their lands, loss of their political and economic autonomy, and an array of other new stresses.

In terms of ideology, both horses and guns first appear together in the rock art during this phase. Burials can be expected to remain of the crevice type, but grave goods should commonly be more elaborate, in larger quantities, and in greater diversity (Fike and Phillips 1984). Beads will be present in large numbers and of many kinds. By the 1840s seed beads were entering the inventory (Baker 2003a). When found on garments, such as in burials, they may be present in huge numbers (Fike and Phillips 1984).

During the first half of the nineteenth century, the Utes had been exposed to entirely new forms of cultural influence through contact with American trappers and traders. Before that time virtually all of the Utes' post-contact experience had been with the Spanish colonists of New Mexico. Until their territories became the property of the Mexican government, the Utes' contact-traditional culture had been shaped from traditional Ute, Plains, and Southwestern Indian and Spanish colonial influences. When the American trappers and traders began steady contacts with the Utes, foreign influences and new stresses were placed on an old and well-established post-contact Ute culture. This change had been evolving out of protohistory for well over 100 years and several generations of Indians (Baker 1988, 2004b; Leacock 1971). To gain some understanding of what had been going on with the Utes before the entry of the American trappers and traders to Ute country in the 1820s, it is critical to take into account this long contact with Spanish ways that were still quite evident among the Ute in the 1870s, as well discussed by Pike (Richie 1932) and Ernest Ingersoll (1883).

The archaeological resource base certainly contains many sites from this phase. As shown in Table 2, page 42, there are at least four sites known from the Uncompahgre Plateau that may well date to this time frame. Among these is Component 6 at the Schmidt site (5MN4253). The Last Hour wickiup (5RB3236) is clearly from this time also (Baker 2003a). It is Baker's current view that the Rifle wickiup village (5GF308) also likely contains components from this phase (O'Neil 2005; O'Neil et al. 2004).

## **Phase IV-Ute Late Contact Chief Ouray, Chief Douglas (and Provisional Chief Ignacio) Phases (ca. 1860-1881)**

### **GENERAL PHASE DESCRIPTION**

The Ute cultural florescence of the Middle Contact phase began to wane with the demise of the fur trade in the 1840s. The emerging profile of their Late Contact phase is evident in Ute ethnohistory soon after the establishment of the first mining camps on the Eastern Slope of Colorado after 1859. The Eastern Utes' Late Contact phase technically extends up until the start of the twentieth century or perhaps longer. For practical archaeological purposes, the phase here is terminated as an archaeological interest about 1881. By the end of that year the various Ute bands had either been removed, were in the process of being removed from Colorado, or were on paths that led them to reservations within the state. One could probably conceive historical archaeological projects involving Ute resources that are post-1881. That resource base is, however, considered to be so politically sensitive that it may reasonably be said that there are currently few legitimate interests after this date.

By the end of 1882 all of the Utes north of the San Juan Mountains had been removed from Colorado to new reservation lands in Utah. There is thus no further archaeological record of them in most of their old Colorado territories, with one exception. Known Ute archaeological components in the White River drainage of northwestern Colorado at the survey level seem to postdate 1882. These may be credited to Utes who were crossing back into Colorado from their new reservation in northeastern Utah. The sites include camps in an area historically linked to Chief Ouray's widow, the famous Chipeta (Curtis 1976; Gross 1972; Roper 1940). She and her followers are known to have frequently returned to the area just south of Rangely to hunt. She and her retinue are also known to have made a number of trips back to the old Uncompahgre territory and to have routinely camped near what is now known as the Orvis Hot Springs near present Ridgway (Baker 2000a, 2002d). No sites associated with the latter pilgrimages have been found. Known sites in northwest Colorado dating after the removal are currently thought to include the Last Hunt camp (5RB3520). The Spindle Whorl Camp (5RB3525) (Baker 1996b, 2003a) is also in this area along with the Clay Horse (aka Clay Deer) Camp (5RB3523) and other components in the near vicinity. These sites have been discussed briefly by Baker and Sanburg (1993) and O'Neil and Baker (1992) but have not yet been excavated or recorded in any detail. These late components derived from the post-removal years are referred to as the Fort Duschene phase (Baker 1996b). Though still technically also a part of the Late Contact phase, for purely archaeological purposes these sites have been accorded their own phase designation. These follow the Late Contact Chief Douglas and Chief Ouray phases of the northern and middle sections of the state respectively. No exact end has been assigned to the Fort Duschene phase although it appears that the noted sites do not extend much, if any, past about 1900 (Baker 1996b).

Virtually no historical Ute archaeological data exist for the southern area of the state. Because of its close proximity to the historic Spanish/Mexican culture area, the southern part of the state poses very special archaeological and ethnohistorical problems relating to rates and nature of the acculturation process. Wilshusen and Towner (1999) have discussed the paucity of archaeological data for Ute occupation of this area and suggested the subject was not yet ripe for summation. There must, however, be Late Contact phase sites present in that region. Although portions of this record should be present and accessible on private and public lands, much of it may be on the Southern Ute and Ute Mountain reservations. If and when archaeologists are able to locate late components in that region, they should probably be distinguished from those of the middle and northern portions of the state and assigned to a "Chief Ignacio Phase" out of recognition for this famous leader of the Southern Utes.

The reasons for making three geographical distinctions are partly in the area of theoretical potentials in the Ute archaeological record. They also include recognition of differences in the historical record. They are also made out of respect for the historically documented personalities, which are sometimes known to have been directly responsible for the record. There just might be some attributes that might help to differentiate among the peoples of these areas. These attributes might be lithic signatures or pottery design

elements from earlier times that might be detectable. Rates of acculturation, such as for the equestrian profile, might also be detectable. Because of these potentials, it is appropriate to distinguish Ute components by area. Therefore, if one is working in the Late Contact phase in the northern, middle, or southern areas of the state, one can describe their components as Chief Douglas, Chief Ouray, or Chief Ignacio, respectively, when they date after 1860. Such designations also convey something of a "heritage" distinction that might well be important to the members of the individual Ute bands themselves where family lineages are certainly known and traceable to historical personages and are often sources of pride to their descendants.

## **ETHNOHISTORICAL CONTEXT**

By the Late Contact phase all the Ute bands that Stewart believed made up the Eastern Utes (Callaway et al. 1986; Stewart 1966b, 1971, 1973) were being documented. Most of the band designations and much of their distribution on the landscape outlined in all the cited past writings derive from documents of this period. In the southern area were the Capote and Moache who make up the Southern Ute Tribe today, headquartered at Ignacio, Colorado. The Weeminuche are the Ute Mountain Tribe at Towaoc, Colorado. In the middle area was the combined Uncompahgre/Tabeguache, who have commonly been called Uncompahgre since about 1875 when their agency was moved to the Uncompahgre River. In the northern area were the White Rivers, who may have been composed of remnants of Yampa, Parsunuch, and some Uintahs. The Uncompahgres, White Rivers, and Uintahs today compose the Northern Ute Tribe, headquartered at Fort Duschene, Utah. All of these bands figured in the political and cultural landscape of the Late Contact phase.

When the white settlement of Colorado's Eastern Slope commenced in earnest in the 1860s, previously absent pressures on the land base and political autonomy of the Utes increased rapidly. Such pressures came to hallmark this phase of Eastern Ute cultural history. With the conclusion of the Mexican War in 1848, the Ute homeland had passed to the United States. For the first time in their long post-contact experience, Ute politics would no longer involve dealings with Spanish colonial or Mexican authorities, traders, or even settlers, such as those who settled the San Luis Valley during the mid-nineteenth century (Simmons 2000; Swadesh 1974). Despite the lingering presence of strong Spanish/Mexican cultural traits, Utes would henceforth be doing political business across the council fire with the military and bureaucratic representatives of the United States. For the very first time they would be dealing with an entity that would actually be seeking to dispossess them of their homeland. The cultural profile of the Utes during these years was largely born of this radically changed arena of political dealing. The earlier Spanish and Mexican politics are eloquently discussed by Simmons (2000:29-82), Jefferson et al. (1972:1-23), and in broad stroke by Gibson (1988:96-102) and Spicer (1988:103-109). The Spanish and Mexican influences are considered by Baker (1991c; 2004a; 2004c; 2005b; 2005c), Ingersoll (1883), and to a degree by Jocknick (1913).

Despite Colorado's attainment of territorial status in 1861, it was not until after the Civil War that U.S. political interests began to meaningfully involve the Utes and their homeland under the jurisdiction of the Secretary of the Interior. Although an Indian agency had been established at Tierra Amarillo, New Mexico, soon after the U.S. conquest of the Mexican territories, the first meaningful efforts to establish agencies did not occur until after the war. Agencies were established to further the progress of the U.S. Indian Service's "Peace Plan" among the Utes of Colorado. The philosophical underpinnings of this post-Civil War plan of action were simple. It was cheaper and more humane to feed Indians than to fight them, and diplomats rather than soldiers should be employed to obtain land cessions from them. Baker (Baker 2004a), Covington (1949), and Hagan (1988:41-53) consider these politics and the peace plan in some detail. Under the peace plan, new rounds of treaties provided for distinct reservations. The plan also contained provisions for isolating Indians from whites and for providing for Indian education, gifting of annuities, including clothing and food, and land allotments to individual Indians. A fundamental premise was that the government would feed the Indians until they could become self-supporting through agricultural and ranching pursuits. The government took a position that Indians were bound by treaties just as soon as their leaders signed them even though the United States would not be committed to them until the Senate had ratified them. Both houses of congress were required to appropriate funds to implement treaties. All of these actions took literally years to accomplish. The procedures frustrated those charged with negotiating with the Indians

and implementing agreements. These problems were a clear source of antagonism between Indians, including the Utes, and the government (Baker 2004a; Gibson 1988:53-54).

The Indians, on the other hand, had little understanding of these kinds of politics and were unable to force compliance of their comrades who did not agree to the treaties. Most Utes had no desire to give up their wandering seasonal circulations. The whites were subsequently left with a written legal basis with which to force Indians onto reservations but little more (Hagan 1988:53-54). Treaties written under the peace plan did, however, prepare the way for ultimately forcing many Indian peoples out of their traditional homelands. This would include the Utes of Colorado who were served by the Los Pinos and White River agencies (Baker 2004a).

Chief Ouray and the combined Tabeguache/Uncompaghre bands eventually came to dominate Ute politics in the 1860s and 1870s through the chief's strong personal leadership of the Confederated Ute Bands of Colorado. This appellation was only a political designation invented by the U.S. government and was never a product of free choice or participation among the various bands. The government was looking for a sole touch point on Ute matters in order to simplify their dealings with all of Colorado's Utes. This approach never really worked and the Utes essentially coalesced into three main political blocks, namely: southern (Moache, Capote, and later Weeminuche), middle (Uncompaghre and Tabeguache), and northern (White Rivers). These blocks of Ute speakers were forced to coalesce as political bodies in response to the pressures of dealing with the representatives of the United States. The government was also forced to deal individually with all three of these and finally stabilized them on reservations where they eventually became the true political entities that they are today.

Until recently, Colorado's Southern Ute and Ute Mountain Tribes dominated modern Indian, and particularly Ute, politics in the state. The Northern Ute Tribe has in recent years chosen to participate more fully in Native American political matters in Colorado. Its flag now finally flies with those of the other two tribes from the flagpole at the Ute Indian Museum near Montrose and attests to the progress of their regional reenfranchisement (Baker 1995a, 2002d). Although they did commence to assume some individual political recognition and proprietary interests toward their territories during the Late Contact phase, the bands still were only seasonal amalgamations of family groups. They were much as before in all areas except politics. One must still not consider all the Utes in this time as yet any manner of cohesive political unit as the government then desired to portray them and as many historical writers have inadvertently projected. Ute politics of the period were marked by both inter- and intraband political problems that were brought to a head by the massive political pressures which the United States brought to bear on all of them at the same time.

Decisions of a kind never before put before them had to be made by Ute leaders in order to respond to the overtures and demands of the United States. These usually came down to a peace or war kind of mentality. The Utes soon learned that if they elected to follow the peace route they would probably never see the promises of the United States fulfilled. There would be further encroachments on their lands and the promises to feed them would still lead them to starvation. The Utes were well aware of both the Indian and U.S. army successes and failures during the Indian Wars elsewhere. Chief Ouray, with the encouragement of Carl Schurz, Secretary of the Interior, generally opted for the peace route whenever he had a say. Like most of his counterparts in the other bands, he was well aware that death, starvation, and removal would likely be the ultimate outcome of any decisions for war. He was also paid handsomely for his services. With his geographical territory in the middle, Chief Ouray was instrumental in preventing a linkage between the southern bands and the northern White Rivers in the winter of 1879-1880. At that time there was a very real danger of a very hostile nativistic movement among the more fractious elements of these bands and some of their allies among other regional peoples, including Apache and perhaps Shoshone (Baker 2004a, 2005b). With his untimely death late in 1880, Ouray's influence was immediately missed, and in little over a year the Uncompaghres had been forced to move to Utah. By the end of 1882, all of the White Rivers had also been settled there.

By the late 1870s the Eastern Utes were among the last free roaming Native Americans in the United States. Their economic and political viability was, however, virtually destroyed after only a few years of



dealing with the United States and the increasing pressures from white interlopers onto their extensive Western Slope dominions (Borland 1952, 1961). These people commonly brought destructive influences such as alcohol and disease into the heart of the reservation itself. The archaeological culture had begun to depart very dramatically from that of the Late Pre-contact Canalla phase, and many of the institutions of the contact-traditional culture were placed under great stress as well. Almost immediately after the white settlement of the Eastern Slope the U.S. government began efforts to restrict Ute movements, make them economically dependent, and establish them on reservations as part of the process that Leacock and Lurie (1971) refer to as "Administrative Stabilization." This process was part of the peace policy. In addition to the view that it was easier and less expensive to feed Indians than to fight them, the policy was also imbued with the idea that Indians would all ultimately have to be confined on reservations where they could be taught the civilized and productive values of the very didactic Victorians.

The general course of the political dealings between the Utes and the United States are well detailed in Covington (1949). Baker (2004a) has considered them in some detail in relation to the Uncompahgre and Tabeguache bands specifically and in association with the 2<sup>nd</sup> Los Pinos Agency. Excellent and more easily available works that cover the subject include those of Borland (1952; 1961), Callaway et al. (1986), Look (1972), Simmons (2000), Decker (2003) and Clemmer and Stewart (1986). Marshall Sprague's (1980) classic work is still a highly recommended source as is Jorgenson (1972). The course of Ute political events in the Late Contact phase discussed in these sources are included by simple reference herein and will not be covered in any detail. It is not the actual and oft-repeated historical events themselves that are important to archaeology. What is important is how the general pattern of political relations resulted in the loss of Ute economic and political independence. The end result was the loss of nearly all of their traditional territories, confinement on reservations, and for the White River and Uncompahgre bands, forced removal to Utah.

Major changes certainly occurred in the Ute archaeological culture during this time. These changes are readily seen in the emerging archaeological record and are quite obvious in the historical record as well because it contains photographs for the first time (Jackson 1938). It is during this time that the documentary record really begins to expand and much that is known about the traditional Ute bands, territories, and culture was drawn from observations made during this period. Unfortunately, the contact-traditional Ute culture was by then essentially in its death throes, and much of the original pre-contact Canalla phase culture was long gone. By then the prosperous glory days of the Middle Contact phase would have been only memories among older Utes.

Colorado Territory filled with more and more fortune seekers after the Civil War. These people were in large part ex-soldiers who no longer had anything else to do because the huge armies of the Confederacy and United States were dismantled. By the 1870s agencies had been established in the heart of the Uncompahgre and White River territories. An agency for the southern bands soon followed in the area south of the San Juans. Callaway et al. (1986) provide a succinct review of these events. Sprague (1980) has ably discussed the advent and operation of the White River Agency near current Meeker, Colorado. Baker (2004a) has consolidated the details of the history and development of the second Los Pinos Agency on the Uncompahgre (5OR139) and described the substantial archaeological efforts he directed there in 2002. The final report on the Late Contact Uncompahgre/Tabeguache band and their tepee encampments near the agency is also now available (Baker 2005b). Much of the current discussion is drawn from these two recent volumes. There have been no known detailed historical or archaeological studies of the agency and agency period for the southern groups beyond that of M. K. Opler (1963; 1971) and Richard O. Clemmer (1989; 1992). Jim Goss has considered the oral histories and linguistics of these peoples in particular (1961; 1967; Goss 1995a, b, 1999b).

The Utes' Late Contact phase is of course the best-documented portion of their record. The sites are also rather more visible than those of other periods. Despite these positive aspects of their record, there have been remarkably few archaeological studies of them. Other than the senior author's work, there has been no movement in the archaeologically relevant portions of the ethnohistorical baseline since Stewart last wrote (Callaway et al. 1986; Stewart 1952, 1966a, b, 1971, 1973). This portion of the model is, therefore, predictive and based largely on ethnohistory, and particularly from that of the Uncompahgre and Tabeguache. It is

augmented by inventory and excavation programs conducted largely in the Uncompahgre Valley Ute Project (Baker 1991c, 2002d, 2004a, b, c, 2005b). Other useful work includes that of Horn and his colleagues at the Harris site (Horn 1999; Horn and Greubel 1997) and miscellaneous data presented in the various papers in Nickens (1988a) and the recent site summary of Reed and Gebauer for the Uncompahgre Plateau (2004), which was tabulated in Table 2 and Table 3 (pages 42 and 43).

The basis of the sociopolitical system of the Late Contact phase remained on small groups of related family households. By this time all the Ute groups were very largely equestrian with a very strong veneer of Plains traits as well as some old Spanish and Mexican ones. With this high mobility there was a lot of movement within and, for a short time, outside of the Ute territories. This movement encouraged the oft-mentioned band fluidity discussed by Stewart (1973). With horses it was much easier to go spend time among friends and relatives who lived a long way away and not just remain part of provincialized family groups. It was also a time of consolidation of remnant bands, such as those that came to make up the Uncompahgre and the White River bands. These bands emerge by the Late Contact phase as amalgams of older bands that had been badly reduced by the contact experience. To maintain any kind of political autonomy and viability they simply had to consolidate. Consolidation was a very common and well documented reaction to the destructiveness of the post-contact experience for American Indians throughout North America (Steward 1970:145).

Although sharing some common identities and loyalty to certain leaders, there were both inter- and intraband disagreements among the Ute. These disagreements arose because for the very first time they were all facing one common enemy, that being the U.S. authorities who pressed them all for concessions at the same time. This threat was very different from those that had commonly been posed by Native American enemies that might strike here and there at various Utes but not in concerted force against them all at once. Among the Tabeguache/Uncompahgre in the 1870s deep divisions occurred within the band and between it and both the White Rivers and some of the southern groups. Chief Ouray was largely cooperating with the United States and ceding territory. This action alarmed many of his own people as well as both the southern and northern bands. There were multiple attempts to kill him by members of his own and other bands, and Ouray at times held his position by simple force of arms. The threat became so bad that he slept with bodyguards outside his bedroom door at his ranch on the Uncompahgre (Baker 1991c, 2005c; Saunders ca. 1900).

Eastern Ute politics of the Late Contact phase is a subject where Stewart probably overstated the case for their band political unity and sense of territory in his legal testimony on their behalf. Although the members of the various bands seem to have vigorously resisted intrusions into their home territories, the degree to which they were autonomous political units is very problematic. Stewart viewed them as having evolved to the point where their sociopolitical systems overarched and united the small family groups to a degree that was sufficient to demonstrate that they had concepts of collective territory and property (Ronaasen et al. 1999; Shapiro 1986; Walker 1999). If they were so evolved, it was likely a very loose structure, and the Ute kin groups and bands were at times quite fractious. To outsiders, such as government negotiators, there was only a pretense of such commonality when leaders appeared and stated that they spoke for all their own group or the Utes as a whole. The government, of course, gave gifts to those who showed up and participated in the negotiations. Richard O. Clemmer (1989) has written cogently about leadership patterns among historic Great Basin societies.

In the earlier times the *Genízaros* had constituted a specific social class (Chavez 1979; Horvath 1977, 1979; also see Hurt 1939) in the New Mexico colony. In a simplified explanation, this class consisted of Indians who had been taken from their own peoples and reared among the Spanish where they served as slaves, servants, and herders. These people were often baptized in the Catholic Church and spoke Spanish, their native tongues, and at times multiple other Indian languages. In time they could earn their freedom. Many did and returned to their original peoples while others stayed in residence on the fringes of the Spanish colony in special *Genízaro* communities such as Plaza de Belén or Abiquiu. From these bases they served as mercenaries in defense of the colony, as interpreters, as guides, and so forth. They also had their own sociopolitical structures, including leadership positions within chains of military command (Horvath 1977,

1799). Juan Rivera was accompanied by *Genízaros* when he made his trip north into the Ute country in 1765 (Baker 1994; Rivera 1968 [1765]; Sánchez 1997). Although the social class had technically died away by the early nineteenth century, Ute leaders such as Chiefs Ouray and Shavano and probably others had been reared among the Spaniards and Mexicans and finally returned to the Utes as adults who well understood Spanish traditions and were fluent in Spanish and Ute. Although they spoke little or no English, they were well prepared to rise to, or take over, the top leadership ranks of the Utes. Chief Ouray is certainly the best known of these individuals (Baker 1991c, 2002d, 2004a, c, 2005c; Smith 1986). They not only utilized their knowledge to become political leaders, they used it to settle down to farm and herd. With the help of Mexican retainers, a few built comparatively substantial Mexican-style homes. They also readily assumed and held leadership positions among these Ute groups that needed articulate spokesmen. For the first time they were all facing the same enemy, namely the United States.

The importance of the individual nuclear family and family clusters, sometimes referred to as "camp groups" or "kin cliques" (Fowler 1966; Shapiro 1986; also see Steward 1970:115), appears to have been quite enduring from the prehistoric baseline. These small family units remained the most elementary portion of the sociopolitical structure and can still readily be seen in the historical and archaeological record of the Late Contact phase (Baker 2005b). These households remained the fundamental element in the sociopolitical system, site structure, and settlement system. Larger groupings of these smaller household focused groups, or portions of them, did congregate temporarily for special purposes at certain times of the year. These congregations might include communal hunting expeditions, war parties, annuity and ration distributions, treaty negotiations where gifts were generally offered to everyone, or perhaps for ceremonials, such as the Bear Dance and in time the Sun Dance (Jorgenson 1964, 1972).

In addition to referring to chiefs, the military intelligence and agency records of the period usually speak of the numbers of male heads of households and fighting men. Although women and children are sometimes enumerated, it is the men who appear in the records with regularity and who were the negotiators. With the exception of notable women such as Ouray's wife, Chipeta, or his sister, Shasheen, women are very seldom even named. In an ironic twist it is the presence of women, however, that shows strongest in the archaeology of Ute households of the Late Contact and all other phases of the Ute archaeological tradition (Baker 1991b, 1996b, 2005b). In their correspondence the Indian agents commonly referred to the number of households they were feeding. On September 20, 1877, Agent Danforth of the White River Agency wrote about the size of the individual Ute households and stated that each lodge averaged about 4.5 persons. In allotting rations he suggested that each lodge should be accorded rations for four plus another one-half for each. He commented on this:

Hangers on who have no home or family of their own but who have to live with someone-as an old batchelor, or orphan, young unmarried men who have left their parents...most of these "Board around" as I may call it-for a time with one family and then again with another. (U. S. Office of Indian Affairs 1863-1880)

During the 1860s and 1870s substantial groups of Utes, seemingly including entire households, were moving out onto the Plains to hunt buffalo, raid other Indians, and steal horses, usually in the fall months. They would conduct their business there and then hustle back to the Western Slope with their meat and booty before the mountain passes snowed shut and provided them with a protective fortress. These forays to the Plains ended abruptly in the 1870s as more and more whites poured into eastern Colorado and the agents sought to keep the Utes and whites apart to avoid hostilities. The hostile white presence made continued travel to the East Slope dangerous. This hostility was a primary reason for abandoning the first Los Pinos Agency, which was located high in the mountains south of Gunnison near Cochetopa Pass, a main route to the mining regions of the San Juans (Baker 2004a; Pfertsh et al. 1996). Except for the temporary large aggregations, the small family groups would still break out and move into favored, and likely traditionally visited, family territories. Even the big encampments internally revealed smaller kin-based components (Ingersoll 1883).

Generally speaking, the Utes were still following annual patterns of seasonal circulation. These were no longer the localized affairs that they had once been before the advent of the horse. In the summer months they were up in the higher country hunting and gathering and their winters were spent in the milder climates lower down. This pattern was similar to that which had been followed in prehistoric times except that they could range much farther with horses. They could exploit areas that they had not visited when they were walking, such as heading out onto the Plains for the annual buffalo hunts. Their horses did force them to accommodate the very significant needs of forage and water wherever they chose to stop. This was a relentless cycle and likely required families to stay near well-watered river bottoms, where forage grew naturally in winter, and to stay longer at the higher elevations, where feed was plentiful in warmer months. In prehistoric times forage would simply not have been an issue. This change may mark one likely shift which can, in theory, be tested by archaeology. Where are the sites from this period congregated? Finding them may prove quite difficult.

This pattern of wide seasonal dispersal was intentionally being curtailed by the agents, becoming a thing of the past for many families by the latter 1870s. To operationalize the components of the peace policy, the Utes had to be congregated and tethered closely to the agencies. This was accomplished by offering food on a regular basis and at intervals that were short enough so that the Utes could not stockpile it and range very far away without giving up their rations. This intentional plan was clearly outlined in the letters from the agent at the second Los Pinos Agency (Baker 2004a, 2005b; U. S. Office of Indian Affairs 1863-1880). Increasing white pressure, primarily from the mining sector, on the wild game of the Western Slope (Borland 1952, 1961) and the curtailment of the annual trips to hunt buffalo caused a dramatic shift in the contact-traditional subsistence economy.

Deer and elk populations would certainly have been stressed for over a hundred years as a result of the increased demand for tanned hides. This stress escalated in the Early Contact phase and was still present during the Middle Contact phase when the presence of firearms and fur trappers and traders put even more stress on wild game populations. By the time the mining boom came, even more pressure was placed on this part of the resource base and what was left of the wild game was quickly depleted. The common story told by old timers on the Western Slope is that there were hardly any deer and elk left by about 1900. The end result was that the Utes got desperately hungry. With the Brunot Cession of 1873, the San Juan Mountains were stripped from the reservation, and this former major hunting range was no longer available to the southern groups on its south side and the Uncompahgre/Tabeguache on its north side.

The Utes had no choice but to begin accepting, and becoming increasingly dependent on, the rations provided by the agencies. Accounts of half-starved Utes are commonplace by the latter 1870s. By the mid-1870s the agencies were up and functioning in the very heart of the vast old Ute dominions, and the Utes were becoming increasingly dependent on them for basic sustenance. Although wild game became progressively scarcer, agency rations simply often did not materialize to compensate. At one point in the late 1870s, starvation was so rampant that Chief Ouray took many of his people and some White Rivers to Wyoming in a desperate last and unsuccessful attempt to hunt buffalo (Baker 2004a; U. S. Office of Indian Affairs 1863-1880). White pressures increased against the reservation boundaries (Borland 1952), and for the Uncompahgres in particular, the pressure from the newly formed mining districts and towns such as Ouray grew very intense. The young mining camp of Ouray was only a few miles outside the south boundary of the reservation. Chief Ouray had once maintained a seasonal adobe hunting cabin at the hot springs there (Baker 1991c, 2004c). The community was thus named after him. Despite this tribute to him, the camp nevertheless became an epicenter for the demand that "the Utes must go!" This became a common rallying cry all across Colorado. In response to this demand, the military intervened and became a significant presence in the reservation in the late 1870s (Baker 1991c, 2004a; Borland 1952; Brandes 1973; Buys 1993; Goodykontz 1927; Kaplan 1982; Nankivell 1934; Ronzio 1963).

Troops were stationed at the White River Agency following the unfortunate Meeker affair (the "Meeker Massacre," a term some Utes today find offensive) and the Ute victory at the subsequent Battle of Milk Creek in 1879 (Miller 1997; Sprague 1980). The army also situated itself directly between the whites just south of the reservation and the Uncompahgres and forced them to move northward down the

Uncompahgre Valley and away from the agency. Troops also restricted both their summer and winter ranges, forcing them into a smaller and more tightly congested area. Larger encampments tended to hang around Chief Ouray's ranch and Indian settlement at 5MN847 on the lush meadows about the springs of San Francisco near modern Montrose, Colorado, and on the Robideau Bottoms near present Delta (Baker 1991c, 2002d, 2004a, 2005b). This not only put the military between the whites and the Utes in order to keep the peace, it also began the consolidation that would be necessary for the envisioned removal of the Uncompahgres. Although there were no actual concentration camps involved, the Utes were certainly being concentrated.

Although the details are less clear, the original ranges of the southern groups and the White Rivers were also certainly curtailed as they were increasingly tethered to and dependent on their respective agencies. Thus, though the family unit remained the basis of the social structure, the range in which it operated was increasingly restricted as their traditional territories were denied to them. This action should have resulted in the concentration of archaeological sites into increasingly smaller geographical spaces right up to the time the Utes of the middle and northern areas were removed. This premise is ultimately testable by means of archaeology and, although too early to tell for certain, such a pattern seems to be emerging around the Uncompahgre Valley (Baker 2005b).

In addition to the tendency for the whites to restrict their movement and concentrate and tether the Utes to the agencies, Ute populations were rapidly being reduced in the Late Contact phase. Although falling nutrition levels and rising infant mortality were factors, epidemic disease became more commonplace as the Utes were congregated more and more and exposed to numbers of foreigners. Population data have been acquired for the combined Uncompahgre/Tabeguache band for the period 1874-1890 by the Uncompahgre Valley Ute Project (Baker 2005b). This information is augmented by the agent's reports and comments (U. S. Office of Indian Affairs 1863-1880) and Adjutant General's Office (U. S. Army 1871-1880) records. In 1874 it was estimated that there were 1,200-1,500 people in the combined Uncompahgre/Tabeguache band. The sources are consistent on this estimate, and that number seems relatively accurate. At one time, some of the southern groups were temporarily amalgamated with the Uncompahgres, and a combined population of about 3,000 is given. This is, however, an anomalous number (Baker 2004a, 2005a).

During 1875 smallpox was present in the region and it was reported that the Utes had suffered severely from it in just a few years. Although the amount of attrition is not known, it is obvious that the populations had been drastically reduced in very recent times. Utes were quite rightly afraid of the disease and thus reluctant to concentrate near whites. Smallpox was again active in the region in 1877 and 1878. In 1878 the government's estimate for all the Utes of Colorado was just under 10,000. In ethnohistorical perspective this seems to be about double what it actually was. In 1879 about 1,200 Uncompahgres were receiving rations at Los Pinos. If one applies Agent Danforth's estimate of 4.5 people to each lodge, then there were considerably fewer than 300 Uncompahgre lodges/families. The various records of the Adjutant General's Office, however, suggested that there were fewer than that.

In 1880/1881 Captain Dodge (Dodge 1959) of the Fourth Cavalry, which had been active in Ute matters in western Colorado, estimated that the entire fighting force of the "mountain bands" (White Rivers and Uncompahgres) was not more than 400. If one applies the formula of 4.5 times 400 (presuming that each household had only one fighting man), then there may have been only 1,800 to 2,000 people involved at maximum. Although these numbers are loose, they do indicate the relatively low population levels. This estimate is important in considering just how many household sites might be present on the landscape at any one time during this phase. By 1881 the army believed there were only about 2,700 Uncompahgres, White Rivers, and Uintahs to be removed from Colorado (Baker 2005a) and planned accordingly for handling these numbers. The populations of the southern bands could not have been much higher.

Overall the contact-traditional culture of the Middle Contact phase withered significantly with the loss of political autonomy and the shift to a dependent economy in which the Utes became the wards of the United States. Many of the more traditional subsistence strategies were curtailed when access to their old hunting and gathering territories was denied. Though it is reasonable to suspect that the seeds of the eventual

religious revitalization involving the Sun Dance likely started in this period, it is not apparent in the available documentation. Jorgenson (1964; 1972) has suggested that this revitalization commenced only after the removal. One of the most obvious changes was the commencement of farming by a few Ute families and even more who took up the herding of sheep and goats. The introduction of farming and herding was a conscious policy of the agencies as they sought to teach the Utes the Victorian notion of productive pursuits while simultaneously working to wean them away from their roaming tendencies. One agent reported that most of the Utes were averse to the settled life and chose to roam like the mountain stag (Baker 1988, 1991c, 2004a, 2005c). This behavior was a huge problem for the agents, and the government succeeded in meaningfully altering the lifestyles of only a few Ute families prior to the removal. These Utes tended to hang around the agency and they were not well regarded by many of the Ute traditionalists who found themselves unable to make the jump to the more settled lifestyle. This kind of common schism has remained a factor in Native American politics to the present day.

There were, however, a few Utes who were able to adopt a settled lifestyle, which was of course the goal of the agents. It came down to the difference between classic Jeffersonian and Jacksonian views on Indian policy. With the Jefferson view it was to be hoped that they could become yeoman farmers and remain on their lands engaged in the productive pursuits. Under the Jacksonian view, Indians had to be killed or moved out of the way of the progress of civilization and there were no pretenses about giving them their chance to become productive citizens. That the Utes could become productive was considered impossible because they were not believed capable of rising above their primitive character. A few Utes were already farming in the Uncompahgre and Gunnison river valleys in the 1870s even before the Uncompahgre Agency was moved into that area (Baker 1988, 1991c, 2004a, 2005b).

The Uncompahgre band contained pure blooded Utes as well as mixtures such as Ute and Apache or Ute and Navajo. Women of the latter group were known to have been taken as Ute wives, sometimes as a result of bets made on horse races at Chief Ouray's ranch (Baker 1991c, 2004a). The band also contained "mixed bloods," who were Mexican and Indian. It also contained some Utes who were highly acculturated to Spanish ways. There were some folks described simply as Mexicans who were associated with the band, including some who were Chief Ouray's retainers and who moved to Utah with Chipeta and the Uncompahgres. Chief Ouray, who might legitimately be called one of the "last *Genízaros*," actually had two successive homes, a jacal cabin and later a territorial-style adobe home, on the springs of San Francisco near present-day Montrose at 5MN847. He also had his rammed-earth mountain hunting cabin at 5OR965 at one of the fine hot springs in Ouray, Colorado. Both of these have been investigated archaeologically (Baker 1991c, 2004a, c, 2005c). Though no one has seemingly looked very hard at the subject, it is quite likely that other notable leaders, such as Douglas and Ignacio, were also descended in the old *Genízaro* tradition. Chief Douglas at times lived in a log cabin at the White River Agency (Baker 2003a). Although these people stand in stark contrast to the main body of Utes in the Late Contact period, they are nevertheless part of the overall Ute profile. Their study is almost an archaeological field unto itself and involves study of old New Mexican as well Ute ways (Baker 1991c, 2004b, c, 2005c).

## **LATE CONTACT PHASE ALTERATIONS TO THE CONTACT-TRADITIONAL UTE ARCHAEOLOGICAL CULTURE**

A vast array of material goods that were formerly not present in the Ute archaeological record comes in during the Late Contact phase. These items often provide very good *terminus post quem* markers and at times make it very easy to distinguish components of this phase from earlier ones. These goods include a dramatic increase in metal artifacts, including hole-in-cap cylindrical tin food cans as well as a variety of other tin objects such as drinking cups, skillets, plates, stamped flatware table service, and such things as coffee pots, various buckets, and objects that have sometimes been made into other items. The manufactured tinware is notable from its poor quality, which was a result of government contracts that required the low bid for annuity items and rations (Baker 2004a). The Late Contact phase was a time of much reuse of items and materials that were largely new to the Utes and that were put to entirely new uses (Baker 1988, 2003a, 2005b; Horn 1988, 1999; Horn and Greubel 1997). To whites these were very simple and often discarded items.

Even sherds of white ironstone pottery were being ground into small triangular decorative objects, as noted at Chief Ouray's house (Baker 1991c, 2005c).

Tin items made from used tin include some manner of sifters that seem to be appearing with some regularity in the inventories from Ute tepee sites. They are various shaped flat pieces of tin that are punched full of holes. Also included are a variety of small hand tools, which are commonly broken or barely serviceable, as well as horse tack and harness. Such items were given to the Utes when they were no longer of service to the agencies. The horse tack is often represented in assemblages as little more than scraps of leather, rivets, metal rings, buckles, and miscellaneous bridle and saddle parts. Cut nails of various sizes also appear in the assemblages, and some may have come from wooden packing boxes from the agencies. Utes sometimes broke down tin cans and cut them up or at times folded them flat, perhaps for transport and/or trade. Round tin discs with holes in the center – the filler caps from the cans – are obvious where cans have been broken down. Some of the tin cans have been cut neatly by an unknown method into perfect ¾” strips taken from around the circumference of the cans after they were flattened. In some cases these strips were also taken from cans that were still round with intact bottoms. Some manner of cutting jig must have been employed because there is no distortion at all in the cuts as there would be if scissors or snips had been used. Data from the Jutten Lodges near Montrose (5OR1065) suggest that the resultant strips may then have been cut into small triangles that were perhaps blanks for making tinkler cones (Baker 2005b). These cans were very bright and almost golden in color and contrast sharply with the later and better-known food tins which normally had a silvery brightening. Why these cans appear golden in color has not yet been determined. It may only be part of the natural deterioration process. It also may involve some rarely seen early food tins with unusual brightening. There is also a lesser presence of cast-iron cooking items, such as skillets, Dutch ovens, and, most likely, cooking pots (Baker 1991c, 1996b, 2004a, 2005b; Horn 1988, 1999; Horn and Greubel 1997; Ingersoll 1883).

Prior to the Ute removal, tin food cans were still quite scarce in western Colorado. The Utes likely gleaned these from the middens of the agencies and perhaps the military cantonments. They were not often given canned foods in either their annuities or rations. They could only buy or trade for them, and there were very few places to acquire them. Before the arrival of the railroads food cans are even scarce in the artifact inventories of the mines and mining camps. They were very expensive and still considered a luxury even by whites. They also had to be transported long distances across the mountains by wagon over very poor roads, which added considerable expense. Evidence of tin cans is virtually absent from the second Los Pinos Agency (Baker 2004a), but they are common on the nearby tepee sites that were closely tethered to it (Baker 2005b). It is not known whether this is a bias in recovery, or if they were never really present, or if the Utes picked them all up. From data at the Jutten Lodges it is obvious, however, that they were acquiring one-pound baking powder cans somewhere else, such as at the agency. The cans are on the site but there are no lids. Smaller one-quarter and one-half pound baking powder cans came into the household inventory as rations in the very late 1870s and the entire cans (bodies, bottoms, and friction lids) occur on site at the Jutten Lodges (Baker 2005b). Canned goods in any quantity do not appear to be listed in the supply lists for the agency (U. S. Office of Indian Affairs 1863-1880). Unlike the Paiutes on the Comstock (Hattori 1975), due to the hostile environment, the Utes were not able to approach the white settlements and glean middens. There is no record of their ever associating with the camps and mines of the San Juan Mountains (Duane Smith, personal communication with Steven Baker 2005).

A very wide variety of trade beads and various decorative bangles, common buttons, and other garment fasteners come into the record in this phase as the Utes began to adopt more and more clothing of the whites. Clothing, shoes, and hats were regularly given as rations and annuities (Baker 2005b; U. S. Office of Indian Affairs 1863-1880). The production of buckskin clothing seems to have diminished by the time of the removal and at least temporarily slowed a tradition that had begun in prehistory. A much wider variety of colors in the common seed beads first appears in the 1840s during the Middle Contact phase (Baker 2003a) when a lot of the items now in museums were likely actually produced. There is both documentary and archaeological evidence of annuity and ration goods, such as small friction-top baking powder cans, tobacco cans and tags, and smoking pipes of various kinds. Tobacco and foodstuffs were routinely provided by the agencies. There is little evidence remaining of the foodstuffs except baking powder cans and cattle bones

from the agency beef and some evidence of garden produce. Just as was found at Chief Ouray's ranch, there should also be evidence of sheep and goats in some of the faunal assemblages (Baker 1988, 1991c, 2005b, c; Walker 2004).

The Late Contact phase sites are hallmarked by a variety of what were then very modern and very up-to-date larger bore firearms utilizing fixed ammunition. Various types of ammunition for these weapons occur on the late sites along with powder cans, percussion caps, and bullet molds. There are even military items, such as the brass tip of a bayonet scabbard found at the Jutten Lodges (Baker 2005b). Fixed ammunition is not present at all in the Middle Contact phase but can often provide some of the finest solid *terminus post quem* dates for archaeological components (Deetz 1977a; Noël Hume 1969b; South 1977b). Percussion caps (Table 4, page 44) are themselves good markers for occupations after about 1820 (Baker 2003a). Ingersoll spoke very informatively about changes in the Late Contact phase Ute archaeological assemblage.

Their utensils consist almost entirely of what they have bought [*author's note: or been given as rations and annuity items*] from the whites, iron and tin ware; but some peculiarly Indian manufactures are still in use, as, for instance, gourd-shaped water-jars, holding from two quarts to a gallon, made of close wicker-work, a well pitched, one of which, it is said, it takes a squaw four days to make. They have little paint-pots, too, of black pottery, and stone pestles, but these things are almost entirely superseded by civilized manufactures. The boys practise with bows and arrows, and use them largely in getting small game; but the older ones are all well-armed with Sharp's and Ballard rifles and the latest improved Winchester carbines. They have plenty of cartridges, too, and always wear revolvers, so that a boyish game, something like quoits, is about the only use they find for their arrows. (1883:97)

White ironstone ceramics appear in some of these late sites. These ceramics are apparently among the very first shipments of ceramics to the Western Slope and bear English maker's marks. The same maker's marks – “Alfred Meakin” and “J & G Meakin” in particular – have been found at the second Los Pinos Agency, at Chief Ouray's ranch, and at tepee-sheltered households tethered to the agency (Baker 2004a, c, 2005b, c). These marks and the makers' marks on glass bottles also can serve as effective *terminus post quem* markers but are not as accurate or well understood as the ordnance. There is still evidence of percussion firearms, including powder cans, percussion caps, and lead balls and shot during this time. Hide tepees disappear with the advent of canvas, which was given as annuity goods. Log, jacal, and adobe structures are now combined with traditional brush house architecture in a few instances (Baker 1991c, 2003a, 2004a, 2005b, c).

The same maker's marks, namely, those for the Louisville Glass Co., have been found on brown glass whiskey bottle bases from the second Los Pinos Agency (Baker 2004a), Chief Ouray's mountain house (Baker 2004c) and the Many Bullets Lodge tepee encampment (Baker 2005b). These bottles may well have been among the first shipments of liquor into the Western Slope in the 1870s. Apparently some illicit traders came into the agency during this period who could have introduced such items. The amount and variety of glass increases but commonly includes brown whiskey bottles, which seem to appear about the same time as the tin food cans. There is consistent evidence for the use of broken glass as expedient tools. These show marks of utilization, and there is still some reliance on lithic flake tools, as well as milling stones, manos, and simple cobble percussion tools. There seems to have been no or very little pottery production and likely little basket making as well during this time. One can even sometimes note the reuse of stone tools likely gleaned from older components. This information is drawn from the historical record and by archaeological studies by Baker (1991c; 1996b; 2003a; 2004a; 2004c; 2005b; 2005c; Horn 1988, 1999; Horn and Greubel 1997).

Despite all of the obvious changes and additions in the artifact inventories, the ranchería layout and household plan seem to have remained largely the same as those of the Canalla phase prehistoric baseline. The exception to this would be in the need to set them in areas where horses could be fed and watered. The 1B household footprint (Baker 1996b, 2003a) is still evident in the archaeology at the tepee sites (Baker 2005b) as well as commonly pictured in the photographic record (see Baker 2005b). This footprint with both interior and exterior hearths carried over from the prehistoric Canalla phase (Baker 1996b). The exterior



hearths continue to evidence associated female activity areas. The photo record of the period, such as those of the Colorado Historical Society or the Western History Collections at the Denver Public Library, indicates the continued use of ramadas, menstrual huts, and miscellaneous brush dependency structures as considered by Baker (2003a) and Sanfilippo (1998).

Ernest Ingersoll was one of the only observers from any period of Ute history to provide a written description of the internals of a Ute settlement. Speaking of the important observations he made of the Tabeguache/Uncompahgre Utes encamped near the first Los Pinos Agency, Ingersoll ca. 1874 stated:

For several years the Utes have been supposed to live upon the reservation, which embraces some 14,000,000 acres, in south-western Colorado, and is the largest Indian reservation in the country. But the fact is that they are in its valley only in the winter, roaming during the summer all over the Territory, particularly in the park country. From about the 1<sup>st</sup> of August until it is time for them to retire to their winter-quarters in the Uncompahgre Valley they keep near their respective Agencies, and live on the rations which are dealt out to them by the government. This is the best time to see them at home, for then there are often sixty or eighty lodges in one camp. Their lodges are all nowadays made of cotton cloth furnished by the government, are conical in form, and supported on several slender poles meeting at the top, where the cloth is so disposed as to make a sort of flue or guard, set by the wind, in order to cause a proper draught. A little low opening on one side makes a door, which is usually closed by a flap of hide or an old blanket. The white cloth soon becomes begrimed with smoke at the top, which in time extends downward and deepens, until you have a perfect gradation of color, from the white base through ever deepening smoke-browns to the sooty blackness of the apex, adding greatly to their beauty. Besides this discoloring, for which their owners are not directly responsible, the lodges are often painted in bright colors, particularly about the door-ways, and in a band about the base; and usually there will be one or two blue, yellow, or striped lodges in a camp, giving a picturesque variety to the scene. About each teepee (lodge) or group of teepees-for they cluster together here and there in no sort of order-[authors' note: apparently he is referring to family groups or kin cliques here who were camping together] you will ordinarily find several little huts of evergreen branches, called wickyu-ups [author's note: here he is apparently referring to menstrual huts]; fires, with queer kettles hanging over them; frames hung with skins in process of tanning and softening; buffalo-ropes staked on the ground to dry or to be painted by the squaws at leisure times; piles of all sorts of truck-Indian, Mexican, American, and nondescript-among which papooses play, ponies stroll and entangle long lariats of braided raw-hide, dogs bark, and indifferent warriors in gay suits smoke with stoical laziness. (1883:96-97)

Once a Ute family obtained a horse they needed to build brush corrals if the animal was not tethered. Brush corrals for sheep and goats seem to have first entered the Ute landscape in the 1870s. Examples of such have been recorded in the old Uncompahgre territories (Baker 2005b) and in northwestern Colorado (Baker 1996b, 2003a). In addition to canvas tepees, canvas wall tents of the common "shepherd" variety have been photographically documented in the late preremoval era (Wood and Wood 1977) along with the use of a stove in place of an interior hearth as documented archaeologically at the Many Bullets Lodge (Baker 2005b).

Metal axes were common annuity items and became ubiquitous items in the household inventories during the Late Contact phase. Sites from this phase and the Middle Contact phase commonly show axe cuts in stick architecture as well as in limbing that was carried out around the household sites and sometimes in the collection of fuel wood. Fuel wood piles have been noted to still be present at the old household sites by Baker (2005b) and Huscher and Huscher (1939a). Whenever axe-cut limbs are present, including their dead stubs on living trees, they are often still likely to be closely datable by dendrochronology (Baker 2002b, 2003a, 2005b). In many areas of their old territories, the date of the Ute removals (1881 for the Uncompahgres and 1882 for the last of the White Rivers) provides a clear *terminus ante quem* for Ute occupations of these territories. Tree-ring and artifact dating can very commonly provide *terminus post quem* dates for these occupations. With all of these various tools at the archaeologist's disposal (Table 4, page 44), it is frequently possible to very precisely date components from the Middle Contact phase and the Late Contact phase in particular, as discussed earlier (Baker 1988, 1991c, 2003a, 2005b; Horn 1988, 1999; Horn and Greubel 1997) (also see Fike and Phillips 1984).

During the Late Contact phase it was not only the contact-traditional economic and subsistence strategies that were in large measure lost. Trade with other Native Americans and outside connections with them were more limited as the Utes' and all the other groups' operational ranges were more and more restricted. As Ute political independence was collapsing the ideology was also changing. Burial practices were beginning to change among the more highly acculturated Utes, and some were being buried among the whites in and around cemeteries, such as that at the Los Pinos Agency (Baker 2004a, 2005b; Jocknick 1913). There were some Christian influences among the Utes through the agents and staff of the agencies. Some Utes were baptized Catholics, such as Chiefs Ouray and Shavano, and in the latter case there is clear documentary evidence of the development of religious ideology that drew from both Native American and Catholic religious tenets (Baker 1991c, 2005b; Ingersoll 1883; Jocknick 1913).

Rock art of the Late Contact phase seems to be limited. There has been little formal discussion of it specific to this time frame, but entirely new elements are known to have been introduced. These elements include the train depicted at the well known Mancos Canyon site on the Ute Mountain Ute Reservation, and the train at the Indian Caves in Gunnison County (Patterson 2004). Also notable are what appear to be attempts to write the white man's letters or to copy characters from ration books or other government documents noted at the Robideau (aka Huscher) Rock Art Gallery in Montrose County (Baker 2004d; Blackburn 2004) and at the Clinging Cliff Granaries (Baker 1997) in Rio Blanco County. What seem to be lacking are the older more traditional Ute rock art styles or much from the contact-traditional culture, such as the classic mounted figures or figures with guns that can be clearly dated to the Middle Contact phase or later. It would appear that changes in the Ute ideology were underway during these times, but they cannot now be identified with any more certainty in the rock art than is described here.

With the disruptions to family and demographics such difficult times as those of the Late Contact phase typically have witnessed the loss of many core cultural traditions. These included oral traditions handed down from generation to generation when families were intact and functional and had time to do these things. New stress-related disruptions appear, such as the heavy use of alcohol and shifting gender roles and responsibilities in new economies or simple lack thereof. These issues became a large problem during the Late Contact phase and contributed to the sense of a near hopeless situation wherein the Utes felt powerless to control their destiny. They subsequently adopted the Sun Dance to regain some sense of control and empowerment over their lives (Jorgenson 1964, 1972). This time was the start of a tragic reservation experience, which continued for many years following the removals and only began to improve with the empowerment during the rise of the Phase V or Phase of Emergent Reintegration as considered by Leacock and Lurie (1971) but not further discussed here.

Needless to say, with the loss of so many institutions, including the closeness of family members to share oral traditions and to teach and learn age-old crafts and technologies, much was diminished or actually lost from the contact-traditional profile. These losses included pottery making, flint knapping, basket making, age-old economic and subsistence strategies, and most notably and tragically, much of the oral history of the Ute people. The government's original goals of clearing the Utes from the path of white settlement had been achieved by the early 1880s. The Manifest Destiny of the Americans had prevailed (Decker 2003). Until this point the Eastern Utes had, for over 400 years, shown great resilience and were among the last of the American Indians to be conquered. They had repeatedly evolved new cultural adaptations to the multitude of stresses that began with the internecine warfare of their protohistory and the arrival of the Spaniards in their territories. For the first time since Coronado made his appearance in A.D. 1540 they were a conquered and subjugated people. They had become wards of the United States. It would take many more years before they would regain self-empowerment and the ability to once again control their own destiny and hold political control and ownership of their own land and lives among the other citizens of the United States (Clemmer and Stewart 1986; Jorgenson 1964, 1972).

Only a few archaeological sites from the Late Contact phase have been recorded or investigated to any degree. These include two obvious sites noted in Table 2 (page 42), the Harris site (Horn and Greubel 1997), and the McMillen site (Buckles 1971), along with the other less certainly dated ones also listed in the table. Some Late Contact phase sites appear to be clustered in the Camelback area of the Uncompahgre

Plateau west of Olathe, Colorado. These were briefly reported by Jon Horn (1999). At these sites he and Rich Fike recovered numerous metal artifacts with use of a metal detector on behalf of the BLM (Rich Fike and Jon Horn, personal communications 2004). No excavations, further observations, or reports are known to have been derived from this effort. All of the sites mentioned appear to be Chief Ouray phase sites from the Middle Ute Area. Several sites of the Late Contact Chief Douglas and Fort Duschene phases are noted in northwestern Colorado, including the Spindle Whorl Camp, Clay Horse Camp, and Last Hunt Camp (Baker 1996a, 2003a; Baker and Sanburg 1993; O'Neil and Baker 1992). Several additional Chief Ouray phase tepee encampments associated with the second Los Pinos Agency near Montrose have been inventoried. These include the Many Bullets Lodge and Jutten Lodges, which were excavated (Baker 2005b). Baker has also conducted extensive exploratory excavations at Chief Ouray's adobe ranch complex (5MN847) near Montrose and his rammed earth mountain house in Ouray, Colorado (Baker 1991a; 2004c, 2005c). It is anticipated that more sites from the Late Contact phase will be noted and recorded in the future once archaeologists better learn to recognize their hallmarks described in this report.

## **Representation of Site Types in State Database**

### **SITES WITHIN THE THEME RECORDED IN THE STATE**

A search of the files of the State Archaeologist in 2004 found that there had been no appreciable change in the numbers of protohistoric and historic Native American sites from those listed in the 1999 prehistoric contexts. One cannot rely on those numbers because the multiple authors of each of the various contexts used different definitions and, as discussed herein, Reed and Metcalf (1999) commingled sites from as old as A.D. 1300 with those from up to 1880 under the term protohistoric. In 2004 another search of the site files was made simply by using the designations of protohistoric, historic, and post-contact Native American sites. This search suggested that some 330 sites might be listed under those specific terms. A file search had been made in 2002 of wickiup sites in relation to the successful statewide nomination of arboreal wickiup and tepee sites for the list of Colorado's Most Endangered Places (Baker 2002b). That search showed that there were no more than a few hundred sites so designated statewide. Sanfilippo (1998) noted about 170 sites in the state that contained extant wickiup architecture. The Dominguez Archaeological Group has recently begun compiling a database of wickiup sites. Rich Ott (personal communication with Steven Baker 2005) reports that no less than 278 sites with about 635 wickiups (Figure 5, page 63) have now been noted in the database (also see Martin et al. 2005). This author suspects that some of these sites will turn out to be natural features rather than wickiups, particularly among those reported in the spruce, fir, and aspen woodlands where wind-collapsed trees often fall into triangular masses that have at times been designated as wickiups by the unwary or inexperienced. This problem might have been involved in recording 5MN1519 as read from the data in the site form. It is noteworthy that Ott also reports that the vast majority of the wickiups have been reported in the northwest corner of the state (Figure 5, page 63), which is the northern area of the old Ute territories and where there is no record of Utes having been present in the late eighteenth century.

### **Adequacy of Recordation and Evaluation**

Except for the presence of such things as Uncompahgre Ware pottery, wickiups and Desert Side-notched points within the old Ute territories, there are still few reliable indicators that a site is probably Ute, particularly at the simple surface inventory level. With the possible exception of the pottery, there are as yet no known true diagnostics identifying a former Ute presence. Things will not improve until additional markers are determined. Even then it may never be possible to always identify individual sites as Ute. Recordation of protohistoric and historic Ute sites has generally been inadequate because of the reliance on nonfunctional taxonomic models and the fact that sound historical archaeological methodologies have not been involved in most such efforts. Archaeologists working in the old Ute territories must learn the basics of historical archaeology and implement them in their recording within models such as those employed here or construct even better ones. Any potential Ute household site from any phase of cultural change should be eligible for the National or State register unless it has been significantly degraded.

## Potential for Sites Within Theme to Exist and Be Recognized

Ephemeral Ute household sites, normally involving wickiups or tepees, are the very core of the Ute archaeological tradition from prehistory up until the late nineteenth century (Baker 1996b, 2003a, 2005b). Except for the rare adobe or jacal homes of leaders such as Ouray or Shavano, there is simply no currently known type of a more enduring site derived from the former Ute presence (Baker 1991c, 2004c, 2005c; Reed and Metcalf 1999). How many of these exist is anyone's guess and largely depends on how long Utes have been on the Colorado landscape and in what numbers. There are probably at least thousands. Although they certainly exist hidden below surface, there is good potential for such household sites to be recognized on the basis of the various material attributes of the individual cultural phases outlined herein. The sites are seldom large and do not usually manifest much in the way of obvious landscape alterations or artifact inventories. The latter sometimes have fewer than 100 items, including lithic flakes and food bone within them. The Utes blended well with their environment and were not modifiers of nature. This pattern does change somewhat when one gets into the Late Contact phase. By that time the artifact inventory is pretty heavy and easy to detect even though the sites can sometimes resemble shepherders' camps (Horn 1988). Also, an abundance of iron axes in the Late Contact phase allowed the Utes to alter the arboreal landscape to a degree that can, at times, still be observed.

Once the original wickiup architecture deteriorates, these ephemeral archaeological manifestations become more and more difficult to locate. When buried in alluvial or colluvial environments they are extremely difficult to locate and can be found usually only by excavation or chance discovery. The latter was the case at the Roatcap Game Trail site at 7,000 ft. in the transitional life zone on Grand Mesa (Baker 1991b). That site was one of the most pristine Ute components ever noted, let alone substantially excavated, outside the piñon and juniper woodlands. The distribution of such sites will thus continue to be biased toward dry desert areas with little soil development, such as in eroding piñon and juniper woodlands. Even there locating such sites can be quite difficult (Simms et al. 2005). Additionally, the sparse nature of the artifact returns demands that the old definitions of isolated finds and sites be entirely recast since what are often noted as the former may in fact be the sole markers for the locations of Ute household components. How does one locate these buried components? Overall, the best way to locate such sites will be to: 1) focus on areas where there is good ground visibility; or 2) trench thoroughly through and/or open very large areas via block excavations with the goal of identifying site footprints.

These sites probably will not lend themselves to any manner of remote sensing except for the Late Contact phase sites, which often have a lot of metal in them and where metal detectors can thus at times be useful (Horn 1999; Horn and Greubel 1997). It will, however, be possible to learn where these kinds of sites are commonly located and model for them. As an example, the household at the Roatcap Game Trail site (Baker 1991b) appears to have been but one of several in the close vicinity. This pattern was determined on the basis of faunal analysis (Rood 1991). The settlement pattern for these seemingly related households likely followed the game trail along Roatcap Creek in a linear fashion because the topography was extremely constrained with only limited areas where other households might have been located. Given enough time and money, one could take crews into that area and probably find more localized components from this particular settlement system. This approach is obviously not very efficient, but it is a fact of the aboriginal landscape that these kinds of sites often follow a linear pattern along streams and old trails. Unless there are surface indications, such sites are not easily recoverable. Steve Simms and his colleagues (2005) recently spoke eloquently to this very subject from a Utah perspective. Their "Observations and Opinions" from a poster presentation bear repeating here because they relate to finding structural evidence and thus the footprint by which a template for Ute sites might ultimately be obtained.

We compare two wickiup sites; One where structures are evident and another where they had to be found through excavation. One of the values of sites with remnant structures is how they inform us of the potential for structures at sites where they are not evident on the surface.

When should you expect wickiups and some tips for finding them:

- Picture the site in your mind to prioritize possible trees for investigation. It is important to eliminate young trees from your mental image. If a tree looked like it could have harbored a structure, it may well have. Don't ignore [the] possibility of freestanding wickiups.
- Sites with structures usually have "household" artifacts: hammerstones, discarded ground stone, discarded point bases, and general purpose tools such as graters, scrapers, and drills. In my experience with wickiups in the American West and in ethnoarchaeology with Bedouin in Jordan suggests the single best weathervane of structures is the presence of *hammerstones*.
- Dig under trees. Don't be fooled by trees with dense, ground hugging branches, or by lots of duff. The crew resisted the decision to place a trench under the tree at Orr Springs. They got over it when structure 1 was found. Often, however, these are "dry holes."
- Use trenches, not shovel tests, or isolated pock marks called "units." Trenches provide contiguous context instead of the isolated samples. The latter is fine for sampling artifacts, and finding small features, but [are] not as useful for finding larger features that only become apparent over several meters. All trenches do not have to be a meter wide. Sometimes 50cm is adequate for a linear preview since exposure of contiguous sediments is often important to finding structures.
- Do not get bogged down in artifact detail, laser point plotting and such. Track quantity as you go, but rely mainly on sediment contacts, evidence of slight depressions, and the relationship to the nearby tree. Small samples with a lot of precise measurements are not valuable as larger samples at a coarse scale of resolution. *For the purpose of testing for ephemeral structure[s]-more dirt!* Once a structure is located, the remainder can and should be excavated with more fine grained techniques and measurements.
- Finding structures is a sampling game, but one that is fundamentally different than finding buried artifacts. Archaeological methods need to recognize the difference between these contrasting types of research. (Simms et al. 2005)

When construction activities are planned in areas with soil cover, it might be wise to develop appropriate search strategies emphasizing likely site locations. Baker noted this consistently during the road building program of Chandler and Associates near Rangely. All the new gas field roads followed very constrained routes, which were often old prehistoric trails. Both Fremont and Ute sites were found one after another along these routes (Baker 1995c). The largest part of the resource base will, however, never be recognized even if heavy site testing is undertaken. Many will still be serendipitous discoveries.

Beyond the individual household sites and household clusters that make up the bulk of the Ute archaeological record, their material cultural record also includes rock art sites, burials, and miscellaneous sites, including the possibility of game drives (Baker 1991b) or lithic quarries. There are probably millions of Ute lithic scatters created by lithic reduction, and these are likely one of the few records (other than rock art?) of Ute men on the landscape. At present there is simply no way to identify these as Ute although there seems to be potential for developing lithic signatures for the Ute archaeological record.

Potentials for identification of Ute sites will be enhanced when archaeologists develop the ability to recognize the Ute signatures from prehistoric, protohistoric, and early historic times when there was still a lithic assemblage. Once the lithic signatures are identified and their capability demonstrated, there may be something to rely on besides Uncompahgre Ware pottery. Site footprints also offer potential for differentiating Ute sites from others, as considered by Wilson (1997), and should be rigorously recorded. The architectural remains of wickiups will never be particularly revealing as any kind of diagnostic, and they do not survive from prehistory. Rather, their importance lies in their usefulness in leading archaeologists to the buried site footprints and material culture. It is essential to conduct enough excavation to soundly correlate the above-ground evidence with buried evidence. Unless this step is undertaken simultaneously with recordation of structures, only half the package will be recovered and surely not enough to obtain the data that will be needed to learn to read these kinds of sites that no longer have any surface evidence (Baker 2005a).

Archaeologists should not count on components with surviving stick architecture being available for additional study in the future. Many simply won't be there. Thousands and thousands of such Ute household sites are already buried and lost to archaeology except for chance discoveries. Although the ephemeral Ute structures still survive, there is an opportunity to learn to identify this part of the Ute record as well as differentiate it from those of other peoples. To believe that investigators must not at this time meaningfully excavate at these sites is nonsense. These are not the kinds of sites that one must plan to curate for the archaeologists of the future. Today's archaeologists will do themselves and those of the future no good at all if they do not use these sites now to obtain the interpretive templates that will be needed by those who follow.

## **Interrelatedness of Theme with Other Topics or Themes**

The protohistoric and historic Ute archaeological record is critical to maximizing understanding of the prehistoric Ute record. If a better understanding of the prehistoric Ute archaeological record can be gained by attacking the currently obvious historic Ute record, it might help in the long run to better understand the more ephemeral aspects of the Fremont or even the Anasazi presence on the Colorado landscape. There is still some dialogue as to how the Ute and Navajo occupations of southern Colorado were or were not related through time. Even in this dialogue the critical need is to learn to identify Ute sites from various phases and to differentiate them from those of other groups, such as the Navajo (Reed and Horn 1990; Sanfilippo 1998; Wilshusen and Towner 1999), Shoshone (Reed and Metcalf 1999), or the Fremont (Baker 1995c; 1996b), or even conceivably the "Hogan Builders" of the Huschers (Huscher and Huscher 1943). As Buckles (1988) stressed, the great need is to learn to identify all of these in the archaeological record, and the best way to do it is to learn from what is in hand – a protohistoric and historic Ute record that is still visible and accessible. This point cannot be stressed enough!

## **THE APACHE AND THE DISMAL RIVER ASPECT**

### **General Phase Description**

Archaeologists and ethnologists have for quite some time generally held that the Plains of Colorado east of the Continental Divide were occupied by Apachean speakers when the first Spaniards entered the region in the 1540s. These people, however, disappeared from Colorado in their Early Contact phase before they could enter face-to-face contact with the Spaniards and be historically documented. They thus disappeared from the state's cultural landscape while they were still in their protohistory. How long they may have been in residence in Colorado is really not known. Based on many writings of archaeologist James Gunnerson, the protohistoric Apachean-speaking occupants of eastern Colorado have been equated with the Dismal River Aspect, which is an archaeological culture originally defined from western Nebraska (Gunnerson 1960). Even though his equation has long been generally accepted (Clark 1999a:312-322; Foster and McCollough 2001:926-938; Gulley 2002:45-51; Nelson et al. 2001:111-120; Tucker Jr. et al. 2005), Gunnerson's equation that the Dismal River Aspect represented an occupation by Plains Apache is not as well supported as some other identifications made on the Plains through the direct historical approach (Gunnerson 1960:141, 227-235; 1979; 1987:97-117; 2001:239-242). Gunnerson's equation is questionable in large part because the Dismal River occupation did not survive long enough to be decently documented historically and particularly not at a site-specific level. Strong challenges to the equation have been issued by both Cara Gulley (2002) and M. E. Opler (1983). Because the entire issue is still rather unsettled, the authors have elected to rely on the traditional view that the Dismal River Aspect does reflect a very late prehistoric and protohistoric Colorado occupation by the Plains Apache. Within regional prehistoric cultural chronologies the presumed time frame for the Dismal River Aspect falls within the Late Ceramic period ca. A.D. 1500 to 1750 – from roughly the initial contact between the Spanish and the Plains Indians to the initiation of regular contact between the Native Americans, primarily of the Arkansas River drainage, and the Spanish colonists in New Mexico.

## Ethnohistorical Context

Gunnerson (1987; Gunnerson and Gunnerson 1988) recites the complex ethnohistory on which he bases his equating of the Plains Apache with the Dismal River Aspect archaeological culture. This line of documentation commences with the account of the Coronado *entrada* of 1541 and extends into the eighteenth century. As with many of the older tenants regarding the equation of archaeological cultures with specific peoples, it is appropriate to take a hard look at the evidence that Gunnerson used to make his equation. Fortunately, Cara Gulley, while a graduate student at the University of Colorado, recently conducted just such an evaluation of the Gunnerson data (Gulley 2002). The few comments herein are taken from her compelling master's thesis in which she rigorously reviews both the ethnohistorical and archaeological data behind the Dismal River concept. She notes (2002:52) that "most of Gunnerson's evidence for an Apache authorship for Dismal River was extrapolated from translations of Spanish documents from the sixteenth and seventeenth centuries." Although the reader is referred directly to her thesis, here is Gulley's summary of her findings:

The cultural affiliation of the Querechos, whoever they were, is very important for most of the arguments for a Plains Apache ascription to Dismal River archaeological remains. In the following section, I describe how the Querechos have entered the Dismal River argument for an Apachean ascription, and discuss how well this fits the archaeology. It is shown that, while Athapaskans were undoubtedly present on the Plains in the 16<sup>th</sup> and 17<sup>th</sup> centuries, the lines of evidence used by Dismal River researchers (specifically J. Gunnerson 1960, 1968, 1987) to tie Dismal River archaeologically to the newcomers can be called into question (Opler 1983). This is especially clear when information regarding groups on the Southern Plains is extrapolated to cover archaeological remains in Nebraska, northeastern Colorado, southeastern Wyoming, and southwestern South Dakota. As stated in the introduction to this chapter, the question of whether Dismal River archaeological sites may be more indicative of a Plains lifeway has not been addressed. It is suggested that the lifeway option must be considered, and that all of the reported Dismal River sites..., many of which are tenuously ascribed to Dismal River, need not be restricted to Apaches. (2002:62)

While the Spanish had records of the Plains Apache dating to Coronado's 1541 expedition, it was not until the turn of the eighteenth century that the Euroamericans observed the maximum expansion of the range of the Southern Athapaskans on the Great Plains. The Apache ranged from north of the Black Hills southward between the Front Range of the Rockies and the central High Plains to central Texas and westward across the Rio Grande near the Big Bend area into northern Mexico (Weber 1990). Early in the eighteenth century, however, the fortunes of the Plains Apache declined quickly as a result of several factors, which included both the Comanche advance and the infiltration of the southern and central Plains by French traders. The expansion of French traders had of course helped lead to a colonial struggle between Spain and France, which lasted until 1763, when France ceded Louisiana to Spain in the Peace of Paris.

The net effect of these events was the retraction of the Apache from the northern and eastern parts of their territories and their migration south and southwest into New Mexico, Texas, and Mexico. By at least 1706, Colorado Apaches joined in a defensive posture to protect themselves from Comanche and Ute attacks (Kenner 1969:28). In 1719 Valverde "found the settlements of the former Colorado Apache concentrated in the area of the Cimarron and Ponil Creeks [New Mexico]" situated "at the Plains entrance of the Taos trail" (Schleiser 1972:116) and the Apaches had left their original settlements in Colorado and Kansas by about 1750 (Weber 1990).

Soon after 1700, two Spanish expeditions came into southern Colorado. Juan de Ulibarri came through the Purgatoire River valley in 1706, and Antonio Valverde Cosio came through in 1719. Documentation from these expeditions illustrates two major historic patterns for this period. This valley was in the midst of Apache territory, which extended from at least central New Mexico to the western Kansas plains and presumably much farther to the north. Although documentation of Native American presence in the Purgatoire area itself is limited to the single case cited earlier, it seems fair to assume that the general area was used, if not inhabited, by Apaches during the period up to approximately 1720. Secondly, the expeditions document the increasing pressure exerted by the Ute and Comanche that led to the subsequent retreat of the Apache from the southern Colorado plains and foothills areas. This pressure, coupled with

pressure on the Cuartelejos (sedentary Apaches along the Arkansas River) from the Pawnee and the Jumano, led to the abandonment of previous Apache territory in western Kansas and adjoining parts of Colorado by about 1750 (Weber 1990).

## **The Protohistoric Dismal River Archaeological Aspect of the Early Contact Phase Plains Apache**

Dismal River Aspect sites currently appear to date between A.D. 1675 and A.D. 1725 and are located in southwestern South Dakota, southeastern Wyoming, eastern Colorado, western Kansas, western Nebraska, and possibly the Oklahoma Panhandle and northeastern New Mexico (Gulley 2002; Gunnerson 1960:144; 1987:102-110; Wood 1971). The Dismal River economy was based primarily on bison, deer, and beaver hunting and secondarily on the cultivation of corn and squash (Gunnerson 1960:245; 1987:103). Settlements consisted of small clusters or scattered houses, which had unprepared floors and pole-and-earth roofs supported by five center posts. Irregular trash-filled pits are common in most Dismal River village sites, but cache pits are absent. Also present in many villages in southern Nebraska and Kansas are bell-shaped baking pits (Gunnerson 1960:248-250).

Dismal River Aspect pottery is a thin, sand-tempered, gray-black plain ware, which may also reflect the surface decorations used by the nearest adjacent group. Micaceous sherds, probably trade wares from northeastern New Mexico, are in the minority at Dismal River sites (Gunnerson 1960:246-248; 1987:105; Wood 1971). Other characteristic Dismal River artifacts include small, triangular unnotched arrow points, plano-convex end scrapers, and a variety of bone implements including bison scapula hoes (Wedel 1959:594-597). Although not commonly present, Euroamerican trade goods include iron, brass, glass beads, iron axes and scrapers, and copper and brass conical tubular objects (Gunnerson 1960:251; Wedel 1959:596). Trade with other indigenous groups is indicated by the presence of Ocate Micaceous pottery, Puebloan painted pottery, obsidian, turquoise, and various other lithic materials (Gunnerson 1960:251; 1987:105). The Dismal River Aspect has been associated with Plains Apachean groups, who are thought to have migrated south across the Plains, some arriving in the Southwest around A.D. 1525 (Gunnerson 1974:5).

A number of other archaeological sites in the region that are not part of the Dismal River Aspect have also been attributed to the Plains Apache. Most Plains Apache sites in southeastern Colorado have been identified by the presence of spaced stone circles (tepee rings), earth rings (Campbell 1969:404, 407, 419; Hand et al. 1977:65-67), and micaceous tempered pottery (Ocate Micaceous and Cimarron Micaceous), some of which may be attributable to Taos-Picuris Puebloans rather than to Apachean peoples (Wedel 1959:593; Wood and Bair 1980:21-22). The assumption that these traits are Apachean has not been tested.

Within southeastern Colorado, a number of supposed Apachean sites have been reported. The Loudon site is a roughly circular mound of fire-cracked rock containing a 3.5 m diameter central depression filled with ash. The site, dated A.D. 1435, has been attributed to the Apache (Greer 1966). Several tepee-ring sites, a date of A.D. 1350, and the presence of micaceous and San Lazaro Glaze Polychrome pottery (dated A.D. 1440-A.D. 1515) suggest that eastern Apachean peoples were present in the Carrizo Creek area of southeastern Colorado by A.D. 1400. This information also suggests trade with the Puebloans as early as the late fifteenth century (Kingsbury and Gabel 1983:319-325). Cimarron Micaceous pottery has been reported from three sites on the Apishapa Highlands and is attributed to the period dating A.D. 1550-1750, although Cimarron Micaceous ceramics have been dated elsewhere between A.D. 1750-1900 (Gunnerson 1987:107; Lutz and Hunt 1979:136; Wood and Bair 1980:21). Two other sites on the Apishapa Highlands are tentatively assigned an Apachean affiliation based on the presence of Taos Incised pottery (Lutz and Hunt 1979:136). Site 5LA1411, in the Trinidad Reservoir area, contains two tepee rings and Ocate Micaceous pottery and is attributed to the Carlana phase, a putative Jicarilla Apache manifestation dating between A.D. 1525 and A.D. 1750 in the Upper Purgatoire Valley (Hand et al. 1977:vii, 65). The Plains Apache may have been on the Chaquaqua Plateau as early as A.D. 1435, and earth and stone rings of the fifteenth century are associated with Dismal River Aspect (Campbell 1969:407, 419).



In summary, the Ceramic stage in eastern Colorado can be divided into three periods. The first is characterized by the introduction of the bow and arrow, ceramics, widespread architecture, and horticulture. According to current interpretations of the ethnohistoric and linguistic evidence, the Apache migrated rapidly from west central Canada, with the southern branch (Jicarilla, Lipan, Mescalero) arriving in the Southwest in A.D. 1525. Initially, they were a nomadic, dog travois-using, bison-hunting, non-ceramic people (Gunnerson 1974:5; Schleiser 1972; Wilcox 1981). No archaeological or linguistic evidence supports an Apachean entrance into the Southwest prior to A.D. 1525, and some argue that the earliest date for resident Athapaskan groups in the Southwest is A.D. 1690 (Gunnerson 1987:108-110; Wilcox 1981:227). No prepottery Apachean sites have been identified on the Plains, perhaps because diagnostic materials of the aceramic Apachean groups are unknown (Gunnerson 1983:275). Gradual change occurred until the latter part of the Middle Ceramic period, when the character of sites changed and their number decreased. At that time, the people may have partially or completely abandoned the area. New groups also may have entered the area, a pattern that continued into the historic times. By the beginning of the Late Ceramic period in the Early Contact phase, the Spanish began to explore the region and document the presence of Apachean peoples. The Comanches joined the Apachean peoples by the early part of the eighteenth century. After that time the Apache effectively disappear from the Colorado landscape, apparently by moving southward where they became involved in the classic internecine struggles of the post-horse times, which particularly characterize the culture history of the Plains in the Early and Middle Contact phases of the involved peoples. As will be discussed, the emergence of the equestrian profiles of the various Plains peoples of these times virtually eradicated those attributes of their archaeological cultures, such as pottery production, that are typically used to determine ethnic identities. Thus, despite a rich and very complex culture history and the certain presence of archaeological sites associated with these various peoples, their lack of any diagnostic attributes makes it no longer possible to trace individual archaeological traditions (Hanson 1998; Waldo Wedel, personal communication with Steven Baker ca. 1992; W. Raymond Wood, personal communication with Steven Baker 2005).

## **Protohistoric Changes to the Late Pre-contact Phase Dismal River Aspect Archaeological Culture**

Because of the totally unsettled state of knowledge regarding manifestations of the Dismal River Aspect in Colorado, it is not possible to comment on how external influences of their protohistory affected the Apachean peoples. It currently appears that there was introduction of some basic European-derived trade items, such as iron tools and glass beads into the archaeological culture. These would likely have been integrated by way of the simple concepts of maintenance and replacement (Rogers 1990:105-106). It was certainly a time of intense pressure from hostile forces (Secoy 1953) as indicated in some of the regional rock art as discussed by Mitchell (2004). This pressure would have certainly involved these people in the post-horse/pre-gun military profile (Secoy 1953) as well as the slave trade, overt warfare and accompanying postures of defensiveness/elusiveness. These things also apparently forced their movement away from Colorado. Until the entire Dismal River Aspect is reevaluated along the lines recommended by Cara Gulley (2002), it is simply not possible to say anything more about the Dismal River Aspect and the presumed Apachean speakers associated with it.

## **Representation of Site Types in State Database**

### **NUMBERS OF SITES WITHIN THE THEME RECORDED IN THE STATE**

In reference to the known Dismal River sites, Gulley summed up the situation well:

Dismal River initially referred to what were interpreted as fairly substantial village sites in Nebraska, but has become a catch-all for *any* site-campsite, tipi-ring, rockshelter, or surface scatter-that has ceramics (sometimes only *one* sherd) that cannot be immediately identified as Woodland, Upper Republican, or Puebloan. For example, I have shown that Cedar Point Village (5EL8) was attributed to the Dismal River Aspect because the investigators had no alternative cultural aspects to choose from. I believe that many sites called Dismal River are amorphous and cannot be distinctly affiliated

with any culture (refer to Appendix A). With so much archaeological variability, the term "Dismal River" has become largely meaningless in site definitions, *unless* the use of the term is couched in a detailed and descriptive site inventory. (2002:50)

Gulley conducted her own search of the various site files and tabulated the known Dismal River sites from all the involved states. Her summary (Gulley 2002) indicated that there were about 60 such sites identified and recorded within Colorado as Dismal River. It is quite obvious that there are actually very few such sites known in the state.

## **ADEQUACY OF RECORDATION AND EVALUATION**

It is very obvious from Gulley's reevaluation (2002) of the entire Dismal River Aspect that the term has become something of a catch-all and that recordation and evaluation have routinely been inadequate. As she points out, the term is commonly used to fit anything that does not fit into other defined archaeological cultures. Although it involves some actual protohistory, the crux of this entire matter is essentially one for prehistorians to resolve with Gulley's insightful admonitions in mind together with the data from the pertinent CCPA prehistoric contexts (Gilmore et al. 1999; Martorano et al. 1999; Zier and Kalasz 1999).

### **Potential for Sites Within Theme to Exist and Be Recognizable**

It is obvious that there must be many protohistoric Dismal River and Apachean sites throughout the eastern portion of Colorado. There is no reason to presume that there may not be some in the mountains as well as on the Plains. Until the problems outlined by Gulley (2002) are effectively dealt with, there will likely be little positive movement in recognizing them. At this point it is not even certain just how useful the concept of Dismal River is in understanding the nature of the archaeological resource base.

### **Interrelatedness of Theme with Other Topic or Themes**

Again, the entire concept of the Dismal River and protohistoric Apachean presence in Colorado has been effectively called into question from a sound scholarly basis by Cara Gulley (2002). Her excellent thesis must now cause Colorado's archaeological community to rethink every aspect of these issues and the topic cannot be further considered here.

## **PLAINS EQUESTRIAN TRIBES**

### **General Phase Description**

During the eighteenth and nineteenth centuries the area that would become Colorado witnessed the immigration of some Native American peoples who had been displaced from distant homelands during much earlier times. These peoples included Comanche, Cheyenne, and Arapaho. By the time of their arrivals in the region, these three peoples were well along in the repetitive patterns of culture change within the Leacock and Lurie model (1971) and had long ago shed nearly all vestiges of their traditional cultures. The Comanche appear in the region in the late seventeenth or early eighteenth centuries. They rapidly assimilated the horse and became an equestrian people in the eighteenth century during their Middle Contact phase. This phase was marked by much competition and conflict with other Native Americans during the internecine wars that characterized the Great Plains from at least the seventeenth century through to the latter nineteenth century. It also in time involved conflict over invasions of their territories by westward-bound Euroamericans along the major emigrant routes. This difficult and typically hostile context was compounded by the appearance of the U.S. government during the period of the Indian Wars of the 1860s and 1870s. The Arapaho and Cheyenne do not appear in the area that would become Colorado until well into the nineteenth century. By the time of their arrivals they too were already equestrian groups that were well into their individual Middle Contact phases and fully participating in the internecine Plains wars.

As rather late immigrants, all of these groups evolved into the classic cultural profiles of the equestrian Plains hunting groups (Hanson 1998) of the latter nineteenth century. By the time of their arrivals none of them seem to have carried any archaeologically detectable attributes that might allow for differentiating them one from the other. For archaeological purposes, and despite the rich and complex ethnohistory of the times, they all, archaeologically speaking, seem bound by the commonality of the classic Plains-type equestrian hunting cultures of this general time frame, as Hanson (1998) discussed. These groups did evidence vibrant individual identities in their ethnology and ethnohistories.

The stereotypical Plains Equestrian hunting groups of the northwestern Plains are the Siouan Lakota and Crow and the Algonquian Cheyenne and Arapaho. Also present in eastern Colorado, but perhaps less "classic" equestrian cultures, are the Apache, Kiowa, Comanche, and Pawnee. In the Anglo-American stereotypes, the Apache, Kiowa, and Comanche, while ultimately also highly equestrian, are more closely associated with the Southwest. The classic Plains Equestrian groups will probably not be distinguishable from one another archaeologically because they share many social and economic patterns, as well as material culture, as Jones (2002) discusses. Cultural and technological traditions that may have distinguished them as ethnic or political groups a few decades earlier were replaced or influenced by European trade goods (Hanson 1998).

Plains Equestrian groups were transformed and integrated into the international market economy. They cannot be viewed as marginal hunter-gatherers. The wholesale destruction of the bison herds after the Civil War was devastating to these groups, not only because it was their direct source of food, clothing, and shelter but because it was also their economic access to trade goods that they relied upon for survival and social status. Plains Equestrian traditions figure prominently in historical traditions and in our image of Plains cultures. At the same time, this historical period was brief, and there are remarkably few archaeological sites identified to this tradition. The only known systematic studies of such resources in the region were the reconnaissance studies of Scott and others at the Sand Creek site (5KW28) in Kiowa County, Colorado (Greene and Scott 2004; Scott 2000), and the more substantive yet still limited work at the 1867 Cheyenne camp of Black Kettle in Ness County, Kansas (Jones 2002). In the latter case there were formal though limited excavations. At Sand Creek the emphasis was on locating and evaluating the site, and there were no formal excavations. There reportedly has also been some informal collection made from the Summit Springs battleground in Logan County, Colorado, where Tall Bull and his Cheyenne followers were defeated by Colorado troops. No site report has been prepared for Summit Springs. The site has received interpretive commemoration and has its own website under that name.

The nature and time depth of the arrival of nomadic Athapaskan groups in Colorado is an active topic of research. Of the groups that emerged as notable Plains Equestrian cultures, the Athapaskan predecessors of the Apache appear to have the greatest time depth in the region. Among the archaeological traditions that have been associated with the Apache is the previously discussed Dismal River. In contrast, the arrival of the Tanoan Kiowa and the Shoshonean Comanche from the northwest is thought to have taken place in the late seventeenth and early eighteenth centuries. According to tradition and linguistic affiliations, the Kiowa may have been related to the Kootenai of the Plateau. The Comanche are closely related to Eastern Shoshone. These groups interacted with the Spanish frontier and were among the first native tribes to incorporate the horse into their society. A traditional interpretation of historic movements has been that the Northern Plains groups pushed the Apache, Kiowa, and Comanche south. If these more southerly groups were more closely tied to Spanish trade, they may have been drawn south actively with the Spanish sphere of influence rather than retreating from the Northern Plains tribes.

There are historical accounts and native traditions that provide approximate dates for the emergence or arrival of equestrian groups identified as Arapaho, Cheyenne, Crow, Lakota, and Pawnee in the region. According to tradition the Crow split from the Hidatsa in the late 1700s. There are traditional stories of a dispute between two powerful leaders that ended in the Crow leaving the Hidatsa villages. In effect, the Crow left and became nomadic hunters to profit from the fur trade. The Pawnee were not nomadic, but lived in large villages along the Platte and Loup rivers. Nonetheless, they kept many horses and seasonally sent out hunting parties for bison hides and meat. The Cheyenne and Arapaho were historically affiliated with one

another and speak related Algonquian languages. The Arapaho moved west from the Great Lakes region in the early 1700s. By the 1730s they had obtained horses, apparently from the Comanche, and were involved in the trade of bison hides and meat. The Cheyenne were a related Algonquian group from the Great Lakes region. According to their own traditions, they had moved west to the Sheyenne and Red rivers of North Dakota in late 1600s and lived there in settled villages. In the mid-1700s they moved again to hunt bison in the Plains, often in the company of the Arapaho. The Lakota expanded into the region from the eastern woodlands of Minnesota in the 1750s and 1760s. The Lakota expansion was active and successful, not a retreat or withdrawal from eastern competition (White 1978). Acquisition of the horse improved their competitive advantage in the fur and hides trade and accelerated their expansion. All of these Plains groups were more strongly influenced by the northern fur trade than by the Spanish frontier, but the Spanish frontier had been a source of horses.

The early influences of European presence are virtually invisible in the archaeology of the Northern and Central Plains. Even as the fur trade expanded westward and the Spanish expanded northward, physical evidence of European presence is sparse. But by the early eighteenth century recognizable trade goods had spread into areas that no European is known to have visited. Virtually all Native American cultures were directly or indirectly affected by the fur trade or Spanish missions, and Old World diseases had crept across the continent. Soon firearms would reach the Plains from fur-trading forts, large numbers of horses would be available in the region, and European traders would begin visiting native villages, establishing trading posts and thus ending these groups' protohistory.

The early influence of the gun on the Plains was not as great as it had been in the eastern woodlands. The early smoothbore trade guns were loud, but no great advantage to the nomadic tribes. They were inaccurate and took a long time to reload. The long-barreled smoothbore trade gun was definitely not a preferred weapon for a mounted bison hunter. Mass-produced trade guns are readily recognizable but were manufactured or available for trade for decades. Guns and cartridge casings are more sensitive temporal markers for the later periods of conflict between the westward expansion of the United States and the resident Native American groups. Firearms were undergoing significant innovations during and after the Civil War, and many technological attributes, such as firing mechanisms and cartridge casings, had brief periods of popularity. The horse was firmly established in Plains Indian culture before the breach-loading rifle was available. The Spaniards had tightly controlled their herds in the early 1600s, but by the end of the century native groups had control of viable herds. In the Pueblo Revolt of 1680 at least some quantities of new breeding stock were obtained by the insurgents and likely dispersed to other groups. These animals were added to existing stocks that had been acquired from purely Native American trade channels and Spanish sources.

Plains Equestrian society should not be viewed as mounted in the same sense as their Euroamerican contemporaries. The horse was not a mundane vehicle for travel or a beast of burden. The concept that a wealth in or sufficient number of horses would mean that everyone would be able to ride is inconsistent with the use of the horse. The horse was a tangible item of wealth, and a fast horse for warfare, bison hunting, or racing could be a very important status symbol. A prized warhorse, hunting horse, or racing horse would not be used for mundane riding or for transporting belongings. To allow a woman to ride such a horse signaled very special status and a very special event. Along with this, the horse changed Native American patterns of settlement not just because it allowed them to travel farther and faster and to hunt market-prized game more efficiently but also because it could be a liability. Horses, particularly large herds of horses, required quantities of fresh forage and water that restricted where camps could be established. Horses were also sought after by rival groups and required extra measures for protection. Prized horses required a great deal of care and attention, and large herds were a significant stress on the environment.

There has actually been surprisingly little archaeology undertaken at sites associated with any of these late equestrian peoples anywhere (Hanson 1998). Despite this, and the surmised similarities of their archaeological cultures, sites associated with them still should be considered potentially important in the archaeological heritage of the Centennial State. Since these people had long before been displaced from their traditional territories, it is not possible to conduct any manner of direct historical approach in regard to

them (Hanson 1998). Within Colorado their archaeological cultures can only be viewed as that of the fully equestrian profiles. These following summaries are but snippets of their overall culture histories, which were frozen in a brief span of time. Because there is no archaeological baseline, about all that can be done is recite their ethnohistories (1998). None of these peoples remained in Colorado for much of their individual Late Contact phases. By the latter nineteenth century they were all conquered peoples who had been administratively stabilized and settled on reservations far from Colorado. Although they shared in the repetitive patterns of historic culture change outlined in the Leacock and Lurie model (1971), they had, unlike the indigenous Utes, not witnessed these within the area which became Colorado. Despite the rich tapestry of ethnohistory that surrounds the Comanche, Arapaho, and Cheyenne presence in Colorado, it does not, due to its transitory, ephemeral, and homogeneous archaeological culture, translate directly into any manner of readily investigated archaeological record. Noted Plains archaeologist Waldo Wedel discussed this problem with the lead author (personal communication with Steven Baker ca. 1992) in his last years and emphasized how he had spent much of his career unsuccessfully trying to find some way to archaeologically identify these groups and particularly the former Comanche presence in the region. He just did not think it would ever be possible to differentiate among these kinds of peoples in the archaeological record. Raymond Wood, another prominent Plains archaeologist, also echoes Wedel's sentiments (personal communication with Steven Baker 2005), which are well expressed by Hanson (1998).

## **Summary Ethnohistorical Backgrounds**

### **COMANCHE**

The early years of the eighteenth century saw the Apache populations of the Colorado and Kansas Plains give way before the aggressive, invading Comanche. The Comanche, of Shoshonean linguistic stock, were first recorded in 1705 when the Spanish reported them trading in Taos. In the next year Ulibarri reported that the Comanche and some allied Ute were about to attack that community. The Ute-Comanche alliance was discussed herein in particular reference to Ute ethnohistory. At that time their home territory was thought to be in the valleys around the headwaters of the Arkansas River. In an earlier period the Comanche probably resided with the closely related Shoshone in western Wyoming, southern Idaho, northern Utah, and just perhaps in extreme northwestern Colorado. From their ancestral homelands the Comanche supposedly spread in two directions: east onto the Plains and to the southeast. The Comanche are thought to have originally been a hunting and gathering, mountain-based people who later became highly mobile Plains bison hunters and raiders (Hyde 1959:64-65; Kenner 1969:28; Shimkin 1986:40; Weber 1990; Wedel 1959:75-76).

By 1706 the Comanche were raiding in southeastern Colorado. Ulibarri reported Penxaye Apache in the area between the present-day towns of Pueblo and Trinidad retreating from expected attacks by Comanche and Ute. During the following years, attacks by combined Ute and Comanche groups ranged along the Spanish frontier in northern New Mexico, and southern Colorado. By 1719 the Penxaye and Carlana Apache had been driven from the lands fronting the Spanish Peaks and by mid-century the Apache previously inhabiting the Colorado-Kansas plains had been pushed into west-central Texas and eastern New Mexico (Hyde 1959:66-105; Kenner 1969:28-36; Weber 1990).

By this date the mounting Comanche depredations, which included a destructive raid on Taos and interference with the barter between New Mexico and Plains Apaches, compelled Governor Valverde to lead 600 men in an expedition against the Comanches in northeastern New Mexico and southeastern Colorado. Valverde did not find the Comanches but did locate numerous trails, camps, and habitation sites along his looping route through much of southeastern Colorado. Kenner described Carlana Apaches in this area as "shattered remnants of a once powerful tribe, in full retreat before the Ute and Comanches" (Campbell 1969:30). Even after retreating to the La Jicarilla area along the Cimarron and Ponil creeks in northern New Mexico, the Apache were not safe and continued to attract Comanche raiders (Weber 1990). By this period, "the High Plains, from the upper Colorado River of Texas northward to the Platte in Nebraska, and the Colorado Piedmont fronting the Rockies, were firmly in the hands of the Comanche" (Wedel 1959:76).

By 1750 the Comanche and Ute had parted as allies. The breakup of the Comanche-Ute alliance in 1748 may have been a result of successes in Comanche-French trading. The Ute found themselves subject to Comanche attack in the area south of the Arkansas River and east of the Rockies, and Comanche raiders appear to have been committing depredations against the Ute in western Colorado by at least the 1760s (Baker 1994; Rivera 1968 [1765]; Sánchez 1997). In the following year some Ute people ceased their raids on northern New Mexico settlements and requested Spanish protection from the Comanche (Hyde 1959:107). The Comanche were still posing a threat to the combined Uncompahgre/Tabeguache Ute band in the 1860s. Chief Ouray explained that the latter were reluctant to be settled by the government in one place because it would make them too vulnerable to Comanche depredations (LROIA in Baker 2004a).

Perhaps the single most important success of the Spaniards during the years of Comanche raiding was Governor Juan Bautista de Anza's 1779 expedition against the Comanche chief, Cuerno Verde (Green Horn). With Pueblo, Ute, and Jicarilla allies, Anza marched north through the San Luis Valley, crossed the Front Range near present-day Colorado Springs, and, while his warriors were away on a raid, captured Cuerno Verde's camp near present-day Pueblo. A short distance to the south at the foot of Greenhorn Mountain Cuerno Verde stumbled into Anza's trap and along with many of his warriors was killed. Following this battle, Spanish-Comanche relations along the far northeastern frontier of New Mexico were generally quiet (Kenner 1969:50-51). The Comanche continued their southern and southeastern expansion during the latter half of the eighteenth century. The dissolution of the still formidable Apache barrier east of Pecos by voluntary removal allowed the Colorado Comanche to expand unchecked south and southeast. Until 1758 their winter camps stood on the Arkansas, but by 1761 they had extended southeast to the Canadian River of the Texas Panhandle (Weber 1990). During this period, Comanche territory extended from the Arkansas River above the Huerfano on the northwest, south along the Pecos River to near the Big Bend country of Texas, east to the present-day Austin area, and north to the Great Bend of the Arkansas in Kansas. Comanche raiding extended far beyond these boundaries, well into Old Mexico on the south and against the Pawnee and Arikara villages on the north (Wallace and Hoebel 1952:7-8; Weber 1990; Wedel 1959:76-77).

Spanish attempts to "civilize" some Comanche bands included the construction in 1787 of a fixed village on the Arkansas River near present-day Pueblo, Colorado, in hopes that they would take up horticulture and stock raising. The Comanche abandoned the settlement the following spring, which Thomas surprisingly attributes to a fear of living in Jicarilla territory (1974:41). A much more plausible explanation is the death of a headman's favored wife – the Comanche were not comfortable remaining where someone had died – and a general distaste for the confinement of a settled life (Moorhead 1968:161-163; Weber 1990).

Although at the northwestern margins of their territory, Comanches continued to live in southeastern Colorado and on the upper Arkansas into the early nineteenth century. In 1806, Zebulon Pike saw traces of Native Americans he suspected were Comanche on the upper Arkansas. He suggested erecting a trading post for them "near the mountains on the Arkansas" (cited in Wedel 1959:76). By 1825, when Jacob Fowler traveled along the Arkansas, the area reflected more of a frontier beyond the core area of any single group. On the Arkansas River, just west of the present-day Otero County line, Fowler found a large camp of Kiowa Indians. Over the course of the next several weeks the camp was joined by large numbers of Comanche, Arapaho, Cheyenne, and at least two other less well identified groups. This total encampment, Fowler estimated, reached an astonishingly large population of between 10,000 and 18,000 persons. The status of the area as a peripheral or transitional zone is further attested to by the contemporaneous presence of Crow and Taos Pueblo Indians (Coues 1970:53-68; Weber 1990).

In 1833, Bent, St. Vrain and Company began the construction of their famed trading post, Bent's Fort, just north of the Arkansas and east of La Junta (Lavender 1972; Moore 1973). The local ethnohistoric importance of Bent's Fort is dealt with more completely in the following section addressing the Cheyenne and Arapaho, but it should be stressed that Comanche, as well as other tribes of the Southern Plains, traded at this post. The fort became the economic and communications center for the southwestern Plains and adjoining mountain areas. In 1835, Colonel Dodge met with large numbers of Cheyenne, Arapaho, Gros Ventre, Comanche, Pawnee, Arikara, and some Blackfoot visiting the post. At this time he passed out peace medals, advocating peace (Lavender 1972:170-174). Some five years later an even larger peace parley was held 4.8

kilometers (3 miles) downstream from Bent's Fort and was attended by thousands of Cheyenne, Arapaho, Kiowa, Comanche, and Prairie Apache (Kiowa-Apache). After several days of dancing, gifting, feasting, and purchasing provisions from the fort, these traditional enemies from opposite sides of the Arkansas declared a peace among themselves and with the traders so that commerce would continue (Lavender 1972:201-203). In 1843 a trader at Bent's Fort observed that "some thousands" of Comanche were in the vicinity of the fort, although for the most part posts to the south, nearer to the center of their territory, were the focus of Comanche trade (Richardson 1933:180; Weber 1990).

The Comanche also were noted in Pope's report during his 1854 government-sponsored exploration for proposed railroad construction. He noted that "Comanches ranged into the upper Arkansas in the summer along with Kiowas." Of the Kiowas he wrote "portions of them, even during the winter months, occupy the valley of the upper Arkansas, and of its tributary, the Purgatory River" (Schroeder 1974:428; Weber 1990).

Settled in an area bordering both the Union and Confederacy during the Civil War, the Comanche were offered agreements by both. In the winter of 1861-1862 Comanche, with over 600 lodges, camped at Fort Wise (later renamed Fort Lyon) and awaited annuity goods and items promised in an agreement signed the previous fall. The government's goal was to ease tensions brought about by increased Anglo-American transit and settlement pressures and to free soldiers for duty in the East (Richardson 1933:275-278). As a result of increasing pressures from the Anglo-Americans, the year 1864 saw widespread Native American disturbances in the western Plains and in eastern Colorado. The Cheyenne and Arapaho were the primary groups involved in the Colorado hostilities along the Arkansas and farther south, but as Richardson (1933:284) wrote, "the Kiowas and Comanches were not guiltless." The vast majority of the Comanche military activity took place to the south on the New Mexico plains and in Texas. In 1867, a congressionally authorized commission was sent to secure a lasting peace with the Native Americans of the southwestern Plains (the Comanche, Cheyenne, Arapaho, Kiowa, and Kiowa-Apache), and in Barber County, Kansas, a treaty was signed. In return for peace and the right to build military posts, roads, and railroads through their territory, the Comanche were promised annuity goods, an agency, schools, farms, seeds, implements, a physician, and a carpenter. They were also confined to a reservation in what became western Oklahoma (Wallace and Hoebel 1952:309-310; Weber 1990).

## **CHEYENNE AND ARAPAHO**

As Hyde (1959) observed, the general drift of the Comanche to the south brought, and perhaps was in part encouraged by, the movement of new groups into the Colorado High Plains and Front Range country. Primary among these groups were the Cheyenne and Arapaho. Although the early history of these two tribes is not well detailed, it is known that these Algonquian-speaking groups were previously horticultural village people who entered the Plains from the shores of the Great Lakes and the upper Mississippi Valley. Like the Ute, the Arapaho traveled in small groups rather than as "tribal" units. They came from the valley of the Red River and entered the Plains before the Cheyenne, who arrived later and entered from somewhat farther south (Weber 1990).

Archaeological data suggest that Cheyenne residence on the upper Missouri River extended for at least one and possibly two centuries, ending by about 1840 (Wood 1971:71). The Arapaho, long neighbors of the Cheyenne, were pushed onto the Plains ahead of the Cheyenne and by about 1816 some Cheyenne and Arapaho were hunting together between the sources of the North and South Plate rivers. Pike did not mention either of these groups in his journey up the Arkansas in 1806, but by at least 1811 the Cheyenne were reported to be among the tribes making predatory excursions into Mexico to steal horses from the Spanish (Berthrong 1963:18). The horses were then traded to the Arikaras (Weber 1990).

Chouteau and DeMun, French traders from St. Louis, met a large winter encampment of Kiowa, Arapaho, and Cheyenne on Cherry Creek, near present-day Denver, on their trading expedition in 1816-1817. In 1820, Captain Bell, leading one contingent of Stephen H. Long's party, encountered "Arrapahoes" on the north bank of the Arkansas River below the mouth of the Purgatoire River. Fowler, as previously noted, camped with a large number of Cheyenne and Arapaho tribesmen at a sizable winter encampment in Pueblo

County in 1821. "During the mid-1820s," as Berthrong (1963:21) summarized, "the Cheyenne were widely scattered from the Missouri River to the Arkansas." This, however, is not meant to suggest that the area was used exclusively by the Cheyenne and Arapaho (Berthrong 1963:4-26; Schroeder 1974:393; Weber 1990; Wedel 1959:80-81). These initial contacts foreshadowed an increasing amount of Anglo-Native American contact along the Arkansas River in the late 1820s and early 1830s. This was a period when interest in the southern Rocky Mountain area became increasingly focused on trading rather than just trapping, including trade with New Mexico, and later Mexico itself. Trade was becoming increasingly profitable as a result of changes in policy following Mexico's independence from Spain and the amount of traffic on the Santa Fe Trail was increasing. It was during this time that the Bent brothers arrived in the Arkansas River valley (Weber 1990).

After several years of trapping and trading in the Southwest, William Bent built a trading stockade a few kilometers east of the mouth of Fountain Creek near Pueblo to tap into the local Native American trade. Returning to Missouri in 1832, the four Bent brothers camped at the confluence of the Purgatoire and Arkansas rivers, and were joined shortly by a number of Cheyenne, returning from a successful horse raid against the Comanche to the south. Charles and William Bent explained to the Cheyenne their idea of a large trading post to be built along Fountain Creek. The Cheyenne, reportedly, were greatly impressed but argued for a site at Big Timbers, a location some 40 kilometers (25 miles) downstream from the mouth of the Purgatoire and a favorite Cheyenne camping site. In the following spring, construction was begun on Bent's Fort at a location below the Fountain but about 19 kilometers (12 miles) above the mouth of the Purgatoire. The Cheyenne, as promised, provided a ready clientele for the fort, and additional Cheyenne and Arapaho were attracted to the area (Moore 1973).

The fort was located on the Arkansas River along what had become the boundary between the Cheyenne and Arapaho and various other southern tribes (Comanche, Kiowa, and Kiowa-Apache). It was also near tribes to the west and southwest (Ute and Pueblo) and, therefore, had a large and varied potential market. The river became the political boundary between the United States and Spain, and later Mexico, after the Louisiana Purchase in 1803. The Bents' trading permit granted them trading rights with the Cheyenne, Arapaho, Snake (the Wyoming Shoshone and probably the Comanche), Kiowa, Sioux, and Arikara. At the height of the firm's power, their territory ranged from the Texas Panhandle on the southeast, to the Green River area in western Wyoming on the northwest and from the Black Hills, South Dakota, to the northeast, to just across the Arizona line on the southwest (Weber 1990).

Shortly after completion of the fort, a group of Cheyenne drifted from the north toward the Arkansas River, with some 350 lodges representing probably more than 2,500 persons, and thus made permanent the division of the Cheyenne into northern and southern branches. As the predominant trading enterprise in this vast region, much of nineteenth century history of the southwestern Plains is linked with that of Bent's Fort (Lavender 1972:6-7, 138-154; Weber 1990). In addition to the established and regular commerce Bent's Fort enjoyed with the various tribes of the region, it also served as a major communications hub and meeting place. Major parleys between Native American groups and government representatives were held at or near Bent's Fort in 1835, 1840, 1848, and 1850. These attracted Cheyenne, Arapaho, Gros Ventre, Pawnee, Arikara, Kiowa, Comanche, Kiowa-Apache, and, occasionally, members of other visiting tribes. Intertribal and Native American-Anglo peace prospects were common topics of these gatherings, which also served as dispersal points for the distribution of goods from the government (Weber 1990).

These parleys reflected the shifting military and political domination of the Plains from Native American to Anglo control. By 1851, the government felt it was both necessary and strong enough to demarcate tribal territories for High Plains aboriginal groups from southern Colorado and western Kansas through Montana. Such was the intent of the representatives of the Sioux, Cheyenne, Arapaho, Crow, Assiniboine, Gros Ventre, Mandan, and Arikara, and members of the U.S. government assembled at Fort Laramie in 1851. The Treaty of Fort Laramie was signed by members of these delegations and the fifth article of the treaty defined the territory of the Cheyenne and Arapaho as follows:



commencing at the Red Bute [sic], or the place where the road leaves the north fork of the Plate River to its source; thence along the main range of the Rocky Mountains to the head-waters of the Arkansas River; thence down the Arkansas River to the crossing of the Santa Fe road; thence in a northwesterly direction to the forks of the Plate River, and thence up the Plate River to the place of beginning. (Van Hook 1933:45)

This treaty thus recognized the area north of the Arkansas and east of the Continental Divide in Colorado as Cheyenne and Arapaho territory. It is important to note that all parties to this treaty, Native American and Anglo, recognized this territorial delimitation. The treaty also recognized the right of the United States to establish roads and military posts in the area. The treaty was ratified with amendments by the U.S. Senate (Van Hook 1933:45; Weber 1990). The area south of the Arkansas was not a part of the Treaty of Fort Laramie but was included in the Treaty of Fort Atkinson, which was signed in 1853 and ratified in 1854 and recognized the Comanche, Kiowa, and Apache tribes as the inhabitants of this area. In addition, the treaty acknowledged the right of the U.S. government to build roads and posts and also gave reciprocal guarantees against depredations. Together the two treaties recognized and delineated aboriginal territorial areas in eastern Colorado and established certain limited governmental rights, but these did not include the right of American citizens to settle in this territory (Van Hook 1933:45-46; Weber 1990).

In 1861, the next treaty affecting the Native Americans of the Upper Arkansas Valley, the Cheyenne and Arapaho, was written and ratified at Fort Wise (previously Bent's New Fort). This treaty reserved for these tribes the area:

Beginning at the mouth of the Sandy Fork of the Arkansas River and extending westwardly along the said river to the mouth of the Purgatory River; thence along up the west bank of the Purgatory River to the northern boundary of the Territory of New Mexico; thence west along said boundary to a point where a line drawn due south from a point on the Arkansas River, five miles [8 kilometers] east of the mouth of the Huerfano River, would intersect said northern boundary of New Mexico; thence due north from that point to said boundary to the Sandy Fork to the place of beginning. (Kappler 1904:807; Van Hook 1933:63-64)

All other lands owned or claimed by these two tribes were ceded to the United States. In addition to a number of other conditions, the treaty stipulated that no white persons other than employees of the United States "shall be allowed to reside or go upon any portion of said reservation without the written permission of the superintendent of the central superintendency, or the agent of the tribes" (Kappler 1904; Van Hook 1933:64-65). However, the territorial exclusivity provisions of the treaty were not adhered to by Native Americans or Anglos, and the treaty provisions were not enforced during the Civil War years (Van Hook 1933:64-65; Weber 1990).

The lack of success of these treaties in establishing Native American rights and ending conflict was made manifest in Chivington's attack on the Cheyenne and Arapaho camp at Sand Creek in 1864 (Greene and Scott 2004; Scott 2000), along with the hostilities that followed. Many of the Anglo residents of Colorado subsequently mounted increasing pressure for the removal of all Native Americans from the eastern part of the state. After retaliations and counter-retaliations, representatives of the United States signed a treaty of peace in 1865 with the Cheyenne and Arapaho on the Little Arkansas River in Kansas and it was ratified in the following year. This treaty effectively removed the Cheyenne and Arapaho from Colorado. The Apache chose to adhere to this treaty by confederation, and they too were removed from Colorado. A parallel treaty with the Comanche and Kiowa, negotiated at the same site in 1865, removed these tribes from Colorado. Although these new reservations were located at some distance from the Bent's Fort area, the reservation boundaries were not impervious, and a limited number of raiding forays continued. In the late summer and fall of 1868, the lower Purgatoire valley properties of Kit Carson, John W. Prowers, Thomas O. Boggs, William Bent, and E. R. Sizer were among those raided. No raids, however, occurred after 1868 (Kappler 1904:887-891; Van Hook 1933:69-71, 76; Weber 1990).

Thus, in the approximate life span of Bent's Fort, these High Plains Native American groups passed from the "golden years" florescence of their Middle Contact phase and into the administrative stabilization,

which ultimately attended the Late Contact phase for virtually all North American Indians as considered in the Leacock and Lurie model (1971). These people went from dynamic, independent, and autonomous units to greatly weakened groups. Their territories, which they had themselves but only recently conquered, were delimited by an outside political power and whose economies were linked and subordinate to national and international markets. By 1853 the economic destiny of these groups had already become apparent. In that year Indian Agent Fitzpatrick wrote in his final report that

they are in abject want of food half of the year....The travel upon the road drives [the buffalo] off or else confines them to a narrow path during the period of emigration, and the different tribes are forced to contend with hostile nations in seeking support for their villages. Their women are pinched with want and their children constantly crying with hunger....Already, under pressure of such hardships they are beginning to gather around the few licensed hunters....acting as herdsman, runners, and interpreters, living on their bounty; while others accept most immoral methods with their families to eke out an existence. (Lavender 1972:349)

## **Representation of Site Types in State Database**

### **SITES WITHIN THEME RECORDED IN STATE**

It has not been possible to learn how many such sites have been recorded within Colorado because of an obvious lack of focus on them. In addition, it is perhaps difficult to identify them for what they are.

### **ADEQUACY OF RECORDING AND EVALUATION**

It seems quite obvious that there should be literally thousands upon thousands of such sites, mainly tepee encampments, out on the landscape. It is also obvious that there are great disparities in what numbers have been recorded even though the records for these were not all examined individually. It appears that there has never been any concerted effort to systematically inventory much of the resource base of the old Comanche, Cheyenne, and Arapaho areas. The National Park Service work at the Sand Creek site is one obvious exception to this general rule (Greene and Scott 2004; Scott 2000).

## **Potential for Sites Within Theme to Exist and Be Recognizable**

There are certainly sites out there deriving from the Comanche, Cheyenne, and Arapaho. As primarily tepee-based ephemeral households, which are presumed to all look alike, they will not only be quite hard to discover but it seems that it will not be possible to differentiate among them as the nineteenth century Indians and frontiersmen could do (Hanson 1998; Wilson 1997). This does not mean that after concerted effort, which to date has never been undertaken, that some means of distinguishing among them might not be found. Unlike the arid western portion of the state, however, sites will not now be visible on the surface in the Plains environment unless plowing or other ground-disturbing activities expose them to view. At this time, however, too little is known to say much more. The work (Jones 2002) at the Cheyenne camp of Black Kettle, just over the state line in Ness County, Kansas, has demonstrated that there is archaeological potential in some of these sites, even if the direct historical approach to early cultural stages or differentiating ethnic identities are not pertinent. Black Kettle's camp was both documented and burned by the army, thus providing one of the best possible archaeological contexts. It was an exceptional case, just as the Sand Creek site presents. Many of the bigger and longer-occupied encampments that would offer good archaeological potentials were likely situated at favorable locations that were then overbuilt by Anglo settlements, which destroyed them. Still, it appears that the locations and size of a number of such encampments were recorded. It would be quite enlightening and perhaps a great contribution if someone were to comb the literature for information about them and then try to relocate them in a formal archaeological survey. Until that is done, not much more can be said. Archaeologist Michael Nowack of Colorado College reports (personal communication with Steven Baker 2005) that his department did try to locate and undertake some archaeology at tepee sites of this type some years ago (Kingsbury and Gabel 1983). This effort seems, however, to have encountered prehistoric Apachaen sites and was not continued. Nowack further noted that

obvious sites in eastern Colorado are being extensively looted by relic hunters seemingly in a manner similar to the Summit Springs battleground. This looting has been so widespread and continuous that the known archaeological sites have been largely compromised if not destroyed, in Nowack's view.

## **Interrelatedness of Theme with Other Topics and Themes**

The archaeology of nonsedentary tepee-using equestrian societies of the Plains involves a little known resource base that has never been investigated to any extent in Colorado or even on the Great Plains generally (Hanson 1998). Tepee sites on the Great Plains were the focus of one particular set of papers (Davis 1983) in which Colorado archaeologists actually addressed sites in Colorado (Kingsbury and Gabel 1983; Morris et al. 1983). These sites, however, were mostly prehistoric, and there is no obvious case among the many papers that seems to deal with the late equestrian groups. Jones's paper (2002) is the best case study to date completed in the region for this context but his report is very difficult to obtain. The late Comanche, Arapaho, and Cheyenne cultures do relate contextually with many other very similar groups across the western United States, including the Late Contact phase Ute of Colorado as considered earlier herein and by Baker (2005b). Beyond this generalization little more can be said since the topic is in no way yet suitable for summarization.

## **THE NAVAJO, SHOSHONE, AND RELIC FREMONT**

### **The Navajo**

As discussed earlier in relation to the Ute peoples, in the eighteenth century the San Juan River Valley in northern New Mexico was recognized by the Spanish as the boundary between the Navajo and Ute territories (Figure 4, page 47). There are some unsettled interpretive difficulties with this interpretation. One is the assumption that the Spanish were observing comparatively stable territories, and another is the assumption that different Spanish observers were using group names uniformly. Observations of the time should be read carefully, and in Spanish, with the realization that group names were not standardized. The most uniform distinction of the time was between untamed and Christian groups. Rather than viewing the river as some kind of firm line of demarcation between two groups, it is more useful to think of the area along it as an overlapping use area within which one might expect to find evidence of both Navajo and Ute occupations that may well have shifted somewhat over the centuries. Wilshusen and Towner (1999) have considered the very limited amount of information for such occupations in their discussion of the post-Pueblo occupation of the San Juan River drainage. They have addressed the salient points and stressed that there is currently so little good data in hand that the subject is "not yet ripe for summation" (Wilshusen and Towner 1999). A problem for the archaeologist is that the archaeological markers of the Ute and Navajo have many similarities. Some sites can be distinguished as one or the other, but many others could be either. Based on what is currently known, one should probably anticipate very limited evidence for a former protohistoric or early historic Navajo occupation of Colorado. Towner (1996) carefully details the archaeology of Navajo origins.

Although there has been very little archaeological study of Navajo sites in Colorado, a great deal of research regarding such archaeological remains has been accomplished in New Mexico and Arizona. A vast body of professional literature is thus available from these states that describes Navajo archaeological sites from the sixteenth through the twentieth centuries. Good sources for specifying a comparative "footprint" for Navajo sites are those by David Brugge relating to activity areas and Navajo ethnohistory (1981; 1983a; 1983b; 1986). Brugge, a noted authority on Navajo archaeology and ethnology, reviewed an early draft of this chapter. He drew upon his extensive knowledge of Navajo matters and contributed the following summary of some core aspects of Navajo archaeology (David Brugge, personal communication with the HAC Grant Advisory Board 2006). These are pertinent to this discussion and in a comparative manner to that of the Ute given in this chapter.

The typical Navajo dwelling is the Hogan, which has a round, oval or polygonal ground plan, walls and roof being made of wood, poles and posts covered with earth, stone masonry and in more recent times, various modern materials. The entry orientation is solar, facing sunrise at the time of construction. This may be a point of comparative difference between Navajo and Ute structures. Thus a northeasterly orientation indicates a late spring – early summer construction, a southeasterly late fall – early winter while a more easterly orientation suggests construction closer to the equinoxes. The hearth or stove location is off center toward the entry. The ash heap is usually to the left of a line outward from the entry, but may (rarely) be found to the right. The distance to the ash heap varies through time, at least from about 1700 on. From 1700 to 1800 it is usually 20' to 30' from the entry, from 1800 to about 1870 normally less than 20', and from about 1870 into the 20th century more than 30'. Beginning about 1980 some hogans had butane stoves and thus no ash heap.

Additional features in front of the hogan may include small hearths, small earth oven pits for cooking “kneel-down bread” and perhaps other family dishes, and large earth-oven pits for the “sunrise cake” prepared to serve all attending a pubescent girl’s kinaaldá ceremony. Late 19th and 20th century hogans may have a wood pile indicated by an area of wood chips; these seem to indicate use of a wagon or truck to haul logs that require chopping for firewood. The most common associated features in post-1800 homesites would be corrals and lamb pens, which in some early sites were built contiguous to the hogan itself, although corrals especially are more commonly separate structures.

Pueblitos (“little pueblos”) of stone masonry are common in the Largo-Gobernador region from about 1712 to the 1750s and appear to the south and east from the 1750s for an undetermined period. Those are not likely to appear in Colorado, however. Rectangular houses of stone or lumber do not appear until after 1868 and do not become common until considerably later.

Sweathouses, small conical structures with an interior pit on the north side for hot rocks, have a solar orientation, but ceremonial reversals can occur. A hearth for heating the rocks is in front of the sweathouse, again most frequently to the left looking out from the entry. A discard pile of used rocks is adjacent to the north side of the structure. Another pile of rocks for use may be close to the hearth. A stick or pole, often with a forked end, used to move the hot rocks into the structure, may be found at the site. Sweathouses are rarely near the Hogan, but usually some distance removed in a location that provides some privacy. If several homesites of related families are close together, one sweathouse may serve all.

Ramadas and shelters of various sorts may be near the hogans. At more distant locations of hunting camps, pinyon pickers’ camps, for travel and lambing camps, windbreaks were formerly used. These were circles of brush, branches and/or logs with an easterly opening. The logs in a hunting windbreak had ceremonially specific butt-tip orientation, usually with tips pointed clockwise or toward the rear center. The hearth was located close inside the entry. If occupied for an extended period, an ash heap might be found. Tents were used in late 19th and 20th century sheep camps, although windbreaks or hogans might also be found.

The situation changes in the Late Contact phase. In the early 1860s, many of the Navajo were removed to Bosque Redondo in eastern New Mexico and others dispersed north of the San Juan. Although generally considered a hiatus in Navajo occupation, this period is referred to by many as the Bosque Redondo phase in adjacent portions of New Mexico (York 1983:237). The northern refugees of this transitional period may have blended with the Ute. However, with the removal or confinement of the Ute in the 1880s, Navajo were able to reenter the region as herders and hired hands. In this period the Navajo continued to leave their mark on the landscape. Hogans and sweat lodges are scattered on the landscape, many containing Euroamerican market items in addition to traditional items. These need to be distinguished from earlier and contemporary Ute sites (Horn 2004a). Navajo sites of the Late Contact phase, identified by Navajo structural features or oral tradition are dominated by Euroamerican commercial artifacts (Wosniak 1983). These are dominated by metal and glass food and beverage containers, ceramic food preparation or service vessels, and modified materials or containers. Navajo settlement and reoccupation of the region is well-documented in the Chaco area and the upper San Juan area of the Four Corners. Nevertheless, the characteristics of these sites should be carefully considered, and historical Native American sites in southwest Colorado should not be identified as Ute simply on the assumption that they were the only historical group in the region.

## The Eastern Shoshone

Northwestern Colorado was along a less direct path between the northern Spanish frontier and the northern fur trade than the eastern Plains, but it was still within the spheres of influence of both areas. The Spaniards did not, however, leave any obvious records about the Shoshone. The late prehistoric inhabitants of western Colorado were Numic groups. Within this language group, the Ute are generally believed to have dominated the region in these times. Early 1800s historic accounts, however, indicate that Shoshone also used portions of northwest Colorado to the northwest of the Yampa River. The Comanche, also a Shoshonean speaking group, had expanded into eastern Colorado in the early 1700s. Except for the close similarities in the languages of the Eastern Shoshone and the Comanche, there is little evidence of the nature of the relationship or shared origin of these groups.

Historic accounts of the Shoshone commenced with Lewis and Clark when these explorers entered Shoshone territories in 1805. Contact was sustained with their direct participation in the northern fur trade beginning with the entry of the Northwest Company and the Rocky Mountain trade in the early 1800s. When the Eastern Shoshone actually began using horses is not clear, but it was probably not until well into the eighteenth century. The Comanche were expanding onto the Plains with horses, seemingly by the mid-1700s.

In the early 1800s, the historic Eastern Shoshone were a dynamic coalition of bands and families involved as free trappers in the trade economy of the Rocky Mountains. It is possible that ethnic Shoshone were the most numerous members of this fluid group, but the names used by historical observers cannot be used to confirm this. The name *Shoshone* was apparently applied to any mounted band of Indians in this region that could not be identified as Crow or Blackfeet (Murphy and Murphy 1960:228-229). It is not until government treaties attempted to define discrete tribal territories that names like Shoshone began to refer to any sort of coherent, or at least recognizable, political group. The group that would be called the Eastern Shoshone had roved in small bands, gathering together briefly for cooperative hunts and trading. They did not begin to amalgamate under influential leaders, such as Washakie, until faced with the competitive and military pressure of the Crow, Cheyenne, Arapaho, and Lakota (Siebert 1961). These mounted bison eaters (Kucundika) appeared periodically at Fort Bridger or at trappers' rendezvous, such as those held on the Green or Snake rivers. These groups included relatives of sheep eaters (Tucudika) of the mountains, dust eaters (Hukandika) of the arid basins, fish eaters (Pongwidika) of the salt lakes and playas, and dove eaters (Haivodika) of Blacks Fork and the Bridger Basin, Plateau Shoshone, Bannock, Flathead, Néz Percés, Lemhi, and Northern Paiute. After the adoption of the horse, not only were the bison quickly eradicated in the arid interior basins, but the sparse grass and water of this region was not adequate for large horse herds.

Among the early accounts that mention the Eastern Shoshone in southwest Wyoming are accounts by William Ashley (Dale 1941; Morgan 1964) and several fur trappers working for Ashley in the early 1820s, including Jedediah Smith, James Clyman, and James Beckwourth. Although these early accounts often use the term *Shoshone*, they also refer to the Snake (equestrian Shoshone involved in the fur trade), and the Diggers (impoverished, pedestrian Shoshone who dug for roots). In the mountains to the north, there were also Sheepeater Shoshone. The habitations of all the Shoshone groups were described as shelters made of poles bent over into domes and covered with juniper bark or hides. At the first Fort Laramie Treaty in 1851, the more successful leaders and hunters had adopted the plains tepee. John C. Fremont, in the account of his 1843 to 1844 expedition, states that the Yampah River Valley was a favorite annual collecting ground for yampah root among the Shoshone (Jackson and Spence 1970:458). The historic Eastern Shoshone are partially descended from or related to a band referred to as the Green River Snake but also include families of Shoshone, Bannock, and Flathead from Idaho. By the time that William Ashley introduced the rendezvous system to the Rocky Mountain fur trade, this mounted tribe was deeply involved in the fur and hide trade. How directly they can be compared to the Late Prehistoric and pre-Contact Protohistoric Shoshone of the region is problematic. Cultural patterns such as the biannual bison hunt on the Plains were recent equestrian adaptations to the hide trade and cannot be viewed as adaptive patterns with great time depth.

Archaeological cultural markers of the Late Prehistoric and Protohistoric Shoshone in Wyoming and far northwestern Colorado include tri-notched Sierran style of Desert Side-notched projectile points, flat-

bottomed brown or grayware ceramics, and flat-bottomed carved steatite vessels. Much of the rest of the material culture of these Shoshone groups is archaeologically very similar to the Ute to the south. Reed and Metcalf (1999:152) in their discussion of Ute archaeology of the Northern Colorado River basin suggest that examples of flat-bottomed Intermountain ceramics "are too widely distributed and sparse to clearly indicate Shoshone occupation of the study area." Reed and Metcalf (1999) and Haspel (1984) provide useful comparative discussion of Shoshonean pottery and provide good references to some of the early literature on that ceramic type. Larson and Kornfeld (1994) as well as Frison (1978) also discuss these issues. Shoshone groups that adopted the horse and became dependent on Euroamerican trade goods would presumably have favored more durable metal pots and tools and would have abandoned pottery manufacture.

Gill (1991) compares a number of different burials from Wyoming, including several that are interpreted as Shoshone. Gill (1991:436) notes a trend in protohistoric and historic burials to an increase in abundance of Euroamerican items, including household items, and a corresponding decrease in bone, shell and juniper beads and bone and shell pendants. Recovered grave items associated with the Marbleton Mummy included beads, buttons, an elk-tooth necklace, an 1870's Whitney pistol, 45-70 cartridges, and a beaded moccasin (Gill 1991:436). Identification of this historic burial as Shoshone was based primarily on the beadwork pattern on the moccasin and on craniofacial metrics. Most of the materials associated with the latter burials, if recovered from a nonfunerary setting, would most likely be interpreted simply as trade goods, or possibly even as a Euroamerican component mixed with Native American materials.

## **The Relic Fremont**

There is currently no known direct documentary or firm archaeological evidence that Fremont people survived past the late Pre-contact period in Colorado. Based on recent radiocarbon dates from Fremont sites in northwestern Colorado (Baker 1995c; Creasman and Scott 1987), it appears that some small relic populations may well have survived for a time into the sixteenth or even the seventeenth centuries while still in protohistoric composites. Reed and Metcalf (1999) have discussed the Formative Era Fremont and this little understood but potentially significant idea that they may have survived in Colorado longer than traditionally thought. The subject certainly needs further study and will be better understood when the magnitude of the old-wood problem in regional radiocarbon dating is determined.

## **EVALUATIONS OF SIGNIFICANCE**

Protohistoric and historic Native American sites should be regarded as among Colorado's rarest and most fragile Native American sites. If identified and found to retain any archaeological integrity at all, they are most certainly eligible for the National Register of Historic Places and Colorado's State Register of Historic Properties. These sites may be eligible under any of the criteria for eligibility and should not be evaluated narrowly under Criterion D. Native American arboreal-associated wickiup and tepee sites were successfully nominated on a statewide basis to the list of Colorado's Most Endangered Places (Baker 2002b). This listing accorded a high level of prominence, including the National Register eligibility, to this category of resources. In addition to the core resource base of nuclear family households, there are other types of sites associated with these contexts. These include rock art sites, burials, game drives, and battlegrounds. These sites are, when not degraded, also very likely to be eligible for the National Register.

Many protohistoric and post-contact sites have not been identified as such because the investigators have assumed that the co-occurrence of Euroamerican and Native American artifacts indicated a mixed prehistoric and historical site or because we have not yet developed an understanding of the artifactual and structural indicators of Contact period sites. Partially because relatively few of these sites have been identified, any site that is identified as representing one or more phases of contact should be considered eligible, potentially under any of the criteria. Sites may be associated with a specific event important in history or may represent or be associated with broad patterns important in history (Criterion A). They may be associated with the life and contributions of persons or beings important in written or traditional history

(Criterion B) such as the famous Ute Chief, Ouray, for example (Baker 1991c, 2002d, 2004c, 2005c). They may contain traditional art important for its artistic qualities or traditional importance to Native American culture, or they may contain structures or features that represent classes of vernacular structures that are important in history, but whose individual elements lack distinction (Criterion C). The latter sites may include rare surviving examples of once-common types. And, of course, sites that can be identified as representing this period of dynamic and far-reaching changes may have the potential to yield information important in history (Criterion D). An additional criterion of the state register is that the site may be a location or natural feature that is important in history or tradition. Some Contact period sites may also be eligible as Traditional Cultural Properties (TCPs) (Parker and King 1998) because of their ongoing importance to living communities. However, the identification and evaluation of sites as TCPs is largely a sociocultural or ethnographic exercise.

The site must retain a minimal level of integrity to be eligible for the State or National registers. This integrity must be assessed in terms of the criteria under which the site may be considered important, the historic context of the site, and the site's period or periods/phases of significance. The aspects of integrity are location, design, setting, materials, workmanship, feeling, and association. The relative importance of the aspects of integrity may vary with the criteria under which the site is being evaluated. The subject of site integrity is considered in detail in a National Park Service Bulletin (National Park Service 1991a).

Integrity of association is probably the most important aspect of integrity for a historical archaeological site. Integrity of association involves the strength of the link between the resource and important events or patterns of events and its relationship with other sites or features representing that period and theme. In essence, integrity of association is the confidence with which the elements of a site can be associated with an event, pattern of events, or period of time, and the confidence with which those elements can be identified as related to one another. Historical and traditional information may be important in identifying a site and its integrity of association. Integrity of association is important in the consideration of all of the criteria for eligibility.

Unlike most prehistoric sites, historical sites have the potential of being identified with known historic events or historical patterns (Criterion A). Historical archaeological sites may also have the potential of association with the historic contributions of persons important in history or tradition (Criterion B). These interpretations, associations, and evaluations must use other lines of evidence in addition to the archaeological analysis of artifacts, past environment, and landscape patterns. These other lines of evidence may include written descriptions, memoirs, or compiled histories, or oral traditions. Examination of traditional knowledge about a site or the patterns of events associated with that site may reveal the need to evaluate the site as a potential TCP. Sites retaining structures, structural features, objects or art, may be important under Criterion C. Almost any site that can be identified as representing one or more phases of Native American cultural contact, that has a sufficient diversity of materials to convey activities and patterns, and that retains minimal integrity of location, materials, and association, will likely be eligible because of its potential to yield information important in history (Criterion D).

## **RESEARCH NEEDS**

Improvement of the database, consistent recording and description, and asking the most fundamental of research questions are what are currently needed most in regard to the archaeology of all of Colorado's protohistoric and historic Native Americans. We must learn to locate, identify, and distinguish among all of the archaeological cultures in the state from these contexts while working within models that can effectively order archaeological data. Such models must be generated from detailed understandings of historical, archaeological, and ethnographic data, as discussed herein concerning the Ute peoples. Meeting these simple goals and generating solid and tested baselines of the involved cultures are currently the most critical research needs for all of the involved archaeological cultures considered herein. Attainment of these basic goals will take many years of systematic and committed research by many archaeologists. Once a suitable database of

well-recorded and excavated site case studies is developed, it will be possible to build research designs of more and more depth and complexity while structuring and testing appropriate models. It is noteworthy that progress in just such directions is evident for the Ute peoples. For the other late equestrian Plains hunting groups (Hanson 1998), the immediate need is to conduct systematic documentary research to learn where known encampments were located as was done for Sand Creek (Greene and Scott 2004; Scott 2000) and Black Kettle's camp at the Village on Pawnee Fork in Kansas (Jones 2002). Fieldwork should then be conducted in order to locate, ground truth, and explore such sites. Once this kind of fundamental work is accomplished and some baseline information is acquired, it should be possible to begin to poise questions and develop research designs for this category of resource.



## **CHAPTER 3. SETTLEMENTS**

**Bonnie J. Clark and Kathleen Corbett**

### **DESCRIPTION AND BACKGROUND**

The theme of this chapter, at its core, is about people coming together and figuring out how to live in groups; sites related to settlements help us address various elements of life in those groups. Investigation of these sites may revolve around the negotiations that made such groupings possible or the conflicts that tore them apart, particularly as those are affected (or not) by some kind of central authority. Sometimes such sites manifest the unintended consequences of behavior in groups, as when waterways are poisoned with industrial or household trash. Settlements reveal the spatial strategies of people of different positions: workers and companies, citizens and governments. By studying settlements as a whole, we can often then contextualize the decisions made by individual households, such as choices about consumption and display. As with much of historical archaeology, the greatest promise of the archaeology of settlements is in documenting largely unwritten or unknown history, such as the lives of the working poor or the strategies of women and children.

Perhaps the lion's share of historical archaeological sites in Colorado can potentially tell us something about settlements. It is quite clear that linear features – roads and railroads, irrigation features and water lines, telegraph and electric lines – all shape settlements in very important ways. As the authors of Chapter 10 on Government suggest, one of the most important influences of the government on the historic archaeology of the state is how it structured the course of settlement. In fact, the archaeology of settlements is a theme that overlaps with each of the other chapters in the context. This chapter begins with background on the history of settlement in Colorado, then in the discussion of the archaeological record, the focus shifts to the tangible remains of settlements.

### **A Synopsis of Settlement History in Colorado**

Archaeologists often use the metaphor of the palimpsest to talk about archaeology, a concept also sometimes employed by scholars from other disciplines who write about the history of settlement in the American West (cf. White 1994). By this they mean that cultural landscapes can be read as documents on which layers of text have been written over other layers, each layer of place visible beneath the one atop it, until it can be read as one piece. To understand the history of settlement in Colorado is to understand the state's landscape and archaeological record as documents of human endeavor in place – documents that have been written, and written over, again and again.

Most non-native settlers came to Colorado after the gold rush of 1858, but prior to that, the state had been occupied by Native Americans for at least 12,000 years. As tribes like the Comanche, Ute, Cheyenne, and Arapaho met European, Mexican, and American explorers, their lives were drastically transformed. Not only did the explorers open the door to trade with the tribes, but they also opened the door to diseases such as smallpox, measles, and cholera, to which the Native Americans had less resistance than Old World populations. Also, the increased mobility brought about by the acquisition of horses changed the Native Americans' modes of subsistence, social organization, and warfare, particularly for the Plains tribes. Even

some of those who were once agriculturalists, like the Cheyenne, adopted a nomadic way of life once they acquired horses.

A detailed discussion of protohistoric and historic period Native American sites can be found in the preceding Chapter 2. Readers with a specific interest in such sites should refer to that chapter. However, any discussion of historic settlement sites in Colorado should begin with a consideration of Native American settlement sites. In fact many sites thought of as primarily nonaboriginal, such as Denver, began with paired settlements. Early photographs and accounts of Denver indicate a sizeable population of Ute and Arapaho, who often camped on the bluffs to the west of the Platte River (Nelson et al. 2001). Like many of the historic aboriginal settlements on the Plains and in the foothills, these sites were encampments of tepees, often visible in the archaeological record as a series of stone circles and related artifacts (Clark 1999a).

Some groups known from historic records to have spent time in Colorado, such as the Navajo and the Shoshone, resided primarily outside of the state. The Ute made the Western Slope, the Rocky Mountains, and associated foothills their home. Early historic Ute settlement sites are often marked by wickiups or the stone circles that evidence tepee locations. The extent to which early Apachean settlement sites are marked by permanent architecture is still unclear (Cassells 1997), but most of the many historically known Plains groups, including the Comanche, Arapaho, and Cheyenne, lived in tepees or other transportable or temporary structures. In a continuation of prehistoric practices, aboriginal groups throughout Colorado made occasional use of rock shelters in the protohistoric and historic periods. Because of mobile settlement patterns, and the similarity of much of the suite of material culture to that in prehistoric sites, historic Native American settlement sites are likely underrepresented in the site database. Settlement sites associated with agencies, reservations, or post-Dawes Act land claims should be easier to identify because of accompanying documentation. It is important to remember, however, that even those groups whose reservations were established outside of the state, such as the Southern Cheyenne, occasionally returned to Colorado to gather, hunt, and fish in traditional territories (Church 1999; Clark 1997a). Colorado archaeologists should make the identification, study, and protection of protohistoric and historic Native American settlement sites a priority, in particular because such sites have sometimes fallen through the cracks between our subdisciplinary boundaries (Wilkie 2005).

## **Overlapping Hinterlands**

Over the seventeenth and eighteenth centuries, contact between non-natives and the Native American tribes increased, but Colorado remained isolated and largely devoid of non-native settlement for many reasons. One obstacle to early settlement was the Rocky Mountains, which prevented easy passage westward. Another obstacle was the Native Americans themselves, who were understandably hostile to incursion and often prevented non-native settlement and migration. Another reason was political: Colorado was at that time a geographic nexus in which European political powers established shifting dominance. The Spanish were the first non-natives to claim the area in the mid-1600s, establishing the southern part of what is now Colorado as the northern frontier of New Spain. By the end of the seventeenth century, however, French trappers and traders came into the area from French Louisiana at least as far as the Platte River, and although they did not venture often or officially into Spanish territory, their sphere of influence began to overlap with Spain's, as those they traded with came from farther and farther upriver in the Arkansas Valley. To further complicate the picture of the Plains of Eastern Colorado as a site of political intersection, British traders in 1763 followed the French into the area.

Colorado remained peripheral to the Spanish and French empires until 1803, when the Louisiana Purchase spurred American exploration of the region. Zebulon Pike, in 1806, was one of the earliest Americans to arrive and also one of the first to write of the possibility that gold lay in the foothills along the Front Range (West 1998:98). Although the report from his expedition depicted the Plains as a desert, which was not really true, it can be argued that his trip was a powerful tool in the assertion of American control in the region. Subsequent exploration and commercial travel by American fur trappers and traders in the region furthered American influence, and the establishment of the Santa Fe Trail along already established Mexican trade routes (cf. Boyle 1994) set in motion important trade connections between the United States and

Mexico. After 1820, commercial trade in the region led to settlement in the Arkansas Valley. Bent's Fort, built in 1833 along the Mountain Branch of the Santa Fe Trail near present-day La Junta, was an important signal of the permanence of American presence in the region. However, the Mexican government attempted to maintain control of trade in its Arkansas Valley hinterland, most notably by establishing the Nolan, the Vigil, and St. Vrain land grants in 1843, which precluded other legal settlement in the region. A few other small settlements dotted the Arkansas Valley prior to 1850, including Hardscrabble, near what is now Florence.

From about 1820 until the mid 1840s, a series of trading posts occupied the site of what is now Pueblo, at the confluence of Fountain Creek and the Arkansas River, and they served to facilitate trade between the Missouri Valley and Santa Fe and Taos. The site became a nexus of cultural interaction, the Arkansas serving as the border between territory governed ineffectively by the United States on the north bank and territory just as neglected by Mexico on the south bank. The white settlers were most often traders and drifters who established, as Barth notes, a *modus vivendi* with the wilderness and Native Americans, living largely free of law and marrying women from various Native American tribes (Barth 1988:104-5). In 1854, Ute and Jicarilla Apache Indians attacked the residents of El Pueblo, the settlement established there in 1842 (Buckles 1998:32), and nearby Huerfano, causing their abandonment as well as the abandonment of most of the other white settlement along the Upper Arkansas. By 1860, though, Pueblo was once again growing, and in the late 1860s the town attracted cattlemen and ultimately the railroad as it became an important center of commerce and mining-related industry in southern Colorado.

Outside of the Arkansas Valley, commercial enterprise and the fur trade in particular was making its mark elsewhere in Colorado. To the north, from 1835 to 1837, three small trading posts – Fort Vasquez, Fort Lupton, and Fort Jackson – were built along the South Platte between what are now Greeley and Denver. In response to the challenge this represented to their economic interests in the region, the Bent-St. Vrain company built Fort Lookout, later called Fort St. Vrain just a few miles to the northwest (Ubbelohde et al. 1995:39). None of these, however, lasted more than a few years. In the mountains, the first attempts at permanent commercial settlement west of the Continental Divide were marginally more successful. Fort Robidoux, on the Gunnison River, was an important outpost of the fur trade through the 1830s, and a second trading post, Fort Davy Crockett, was built about the same time along the Green River in northwestern Colorado and was briefly connected to Bent-St. Vrain interests. These forts were active into the 1840s, when they fell victim to the decline in consumer demand for fur (Wyckoff 1999:37-39).

Another zone of early nonindigenous occupation in the 1830s and 1840s was the San Luis Valley, which was covered by the Conejos Land Grant (see Chapter 5, Ethnicity). Although threat of Indian attack prevented stable settlement until after 1851, Hispanic sheep and cattle herders often drove their stock seasonally into the region to take advantage of the pastureland along the Rio Grande and its tributary creeks. After the early 1850s, when much of the area became part of the U.S.'s New Mexico Territory, Hispanic stockmen and farmers migrating from the south settled in the area, building their dwellings in plaza or *placita* groupings conducive to protecting their families and livestock from raids. By the time Anglo-American gold prospectors arrived along the Front Range in the late 1850s, the New Mexican migrants populating the San Luis Valley numbered between 1,000 and 2,000 (Wyckoff 1999:41).

## **Gold and Silver Mining Settlement**

In the first half of the nineteenth century, the word that most described the U.S. economy was growth. Westward-moving settlers had turned the prairie of the Midwest to fertile farmland, and the black glacial soil was ideal for growing the crops that provided the nation's staple foods. But what goes up must come down, and in 1857 the U.S. economy, thriving on what Elliott West called "an investment in an imagined future" (West 1998:7), took a decided downturn. The influx of California gold into American banks had caused dramatic inflation, and advances in manufacturing technology, fed by the raw materials harvested from forests and waterways of the expanding nation, resulted in far more goods being produced than the American public could consume. The result was a nationwide depression that left thousands of men unemployed.

The Depression's impact varied regionally. The South felt little impact, but the mid-Atlantic and the northeastern states suffered greatly. Hardest hit was the Midwest, because it was a transition region; states such as Iowa, Missouri, and Kansas were in the business of absorbing growth and passing it on. When the financial centers of the East pulled back, the new American citizens in the Midwest, many of them farmers who lived on credit, were the ones most left hanging. So, when the cry went out that gold was to be had in the Front Range of the Colorado Rockies, there were plenty of men with time on their hands to answer the call.

The first settlements related to gold mining were prospector's camps centered around claims. Systems of placer mining camps followed boom/bust cycles and often folded quickly. Towns that held out for the long term had common characteristics: capital flowed in as well as out; ore processing was at least somewhat accessible; and eventually the railroad stopped there. Gold strikes were the impetus for developed settlement along Clear Creek (Central City) and Boulder Creek (Boulder). Within a few years, silver strikes brought even more hopeful miners to the mountains. But one ragtag collection of miners' tents and cabins at the confluence of Cherry Creek and the South Platte was to achieve regional dominance as the center of the urban core of the Colorado Piedmont, and a major urban center for the American West.

## **DENVER**

Denver's history, like so much of that of the American West, is written in the languages of cultural intersection and competition for connection. In the fall of 1858, a small amount of gold in Cherry Creek led to the establishment of two settlements across the creek from one other at the confluence of Cherry Creek and the South Platte River, a site that had long been a favorite campsite of the Arapaho. On the east side of the creek, Indian traders William McGaa and John Simpson Smith founded St. Charles. On the west side, a group of miners from Georgia and Kansas, led by William Russell, founded Auraria, a name derived from the Latin word for gold. All recognized the need for a transition point, a place at which incoming prospectors could buy supplies, and a place for them to return to spend their (most often meager) earnings.

Simpson and McGaa were not to last long as town founders. After only a couple of months, a booster from Kansas, William Larimer, jumped their claim and renamed St. Charles "Denver City," after the governor of the Kansas Territory, with whom he was attempting to curry favor. Larimer also platted Highland, across the South Platte from Denver City. Unlike earlier settlers, who saw political and economic advantages in good relations with Native American tribes, Larimer discredited men like McGaa, who were married to Native American women. With the arrival of this attitude, the stage was truly set for cultural collision.

According to Wyckoff (1999:106), three key conflicts were resolved in the next few years in ways that led to Denver's centrality in the urban core of the Colorado Piedmont. First, the 1861 Treaty of Fort Wise removed the Arapaho and Cheyenne, giving the U.S. government control over the area. Second, William Larimer was able to procure a stage connection for Denver City, and, because Auraria's founders had returned to Georgia to enlist in the Confederate Army, its citizens voted to merge with their neighbor across the creek. Third, Denver ultimately won the position of the seat of government for the new Colorado Territory, wresting the job from nearby Golden in 1867.

Denver's population growth in the 1860s was a disappointment to boosters. Unlucky prospectors, dubbed "go-backers," moved on or returned to their eastern homes. But Denver's early elite held firm to their belief that it could be a city of great importance. The tide turned when territorial governor John Evans and his supporters were able to convince Denver voters to fund the Denver Pacific Railroad line, connecting Denver to the Union Pacific in Cheyenne. When the line was completed, in June of 1870, the town truly took its first step toward becoming the major node of connection for all of Colorado. The Kansas Pacific Railroad completed a line to Denver few months later, and a web of track soon laced the state, transporting goods and products to and from myriad points in the Colorado hinterlands. As historian Tom Noel notes, "This rail network enabled Denver to establish its metropolitan sway over Coloradans" (1997:44). As the railroad allowed ores to be transported greater distances for processing, smelters became central to Denver's economic

picture. By the 1890s, the Argo, Globe, and Grant smelters had more Denver residents on their payrolls than any other employer (Noel 1997:44).

As its population grew – the city swelled from only 4,759 residents in 1870 to over 35,000 by 1880 – Denver, as well as other permanent settlements along the Front Range and elsewhere in Colorado, underwent what Wyckoff (1999:112) calls “processes of landscape intensification”. As the railroad brought previously unavailable building materials, the face of the city changed. Many new buildings had multiple stories, and in general the architecture became, as was the style of the Victorian period, self-consciously ornamental, announcing itself as symbolic of the city’s growth and dominance in the region. (See Chapter 4 for a detailed discussion of communities during this era.) Improvements in infrastructure helped make the city more livable: streets were paved, trees were planted, and sewer systems installed. Electric lights lit the night’s dark streets. In time, the public sector made a strong visual statement on the city’s landscape. The white stone, neoclassical designs of the City Beautiful movement, which had so strongly affected the country’s sensibilities at the Columbian Exposition of 1893, made a solid impact on Denver’s civic architecture.

As the Denver area became more and more connected to the world beyond it, it also became more connected within. Horse-drawn streetcars provided public transport beginning in 1871, and by the late 1880s, these were replaced by electric streetcars. Early developers used streetcar lines to lure residents to outlying “streetcar suburbs,” such as Curtis Park, Park Hill, Montclair, and South Denver. Industrial zones such as Globeville, Argo, and Swansea were also fed by streetcar systems transporting laborers to and from their jobs. Indeed, it was the long reach of streetcar lines shooting from the city’s center in so many directions that gave Denver its form; even politically distinct suburbs that are now commonly associated with automobile-based commuting, such as Englewood, Lakewood, and Aurora, were originally connected to Denver’s heart by streetcar.

Historian Gunther Barth (1988:121) defines Denver as an “instant city,” one in which “eclectic individuals pursue diverse economic ends.” The ethnic makeup of the new city reflected the diversity of its citizens’ desires and ambitions, and as in other cities, ethnic groups clustered in neighborhoods, banding together by country of origin. Some, like early Denver’s Chinese community, landed in Denver after having been part of the vast pools of labor required to build the railroads. Denver’s Chinese residents, who numbered almost 1,000 in 1890, dwindled in number after violence and discrimination caused many of them to flee the city (Wyckoff 1999:122). Germans composed the largest and probably the most entrenched of the early ethnic groups, dominating one of the city’s early successful economic endeavors, the brewing of beer. Scots, Irish, and English immigrants were also represented in fairly large numbers and brought substantial capital. African-American, Italian, and Slavic peoples made up much of early Denver’s working class, and like the Chinese, they lived with the repercussions of Anglo-American dominance (cf. Wyckoff 1999:122-123).

As Denver moved into the twentieth century, its status as the dominant urban center not only for Colorado but for the entire Rocky Mountain region became unquestionable, and the city still holds that status today. As with other major U.S. cities, it bears the stamp of its history on its face. The City Beautiful movement, social reformers, the Ku Klux Klan, the wartime military, a seemingly ever-changing industrial scene, and the migrations of groups of people of many ethnicities have all left indelible inscriptions on the landscape of the Queen City. As Wyckoff (1999:268) notes, “By 1940 almost 60 percent of the West’s population lived in cities, suggesting that the region’s character was increasingly bound to its urban experience”.

## **EXPANSION AND INTENSIFICATION OF MOUNTAIN MINING SETTLEMENT**

Mountain mining towns were ephemeral by nature. Prospectors, for the most part, did not mean to stay in the places where they hoped to find riches. The pattern was for the most part consistent: when the discovery of gold or silver “summoned population into the wilderness” (Ubbelohde et al. 1995:110), the ensuing period of prosperity was just as certainly followed by a period of decline, as the more easily accessible mineral reserves were depleted. Although gold brought the initial influx of hopeful prospectors

and miners to Colorado, silver strikes brought even more. The first notable silver discovery, in Georgetown in 1864, was eclipsed not long after by Leadville, which could arguably be called the poster child for the mountain mining boomtown, appearing almost overnight in 1878 as a chaotic collection of claims and mining cabins and within a little more than a year swelling to a small city 25,000 strong (Wyckoff 1999:48).

Silver mining settlements sprang up during the 1870s and 1880s along a roughly southwest axis, bisecting the state from Boulder County to Dolores County (Ubbelohde et al. 1995:114). In the San Juan Mountains west of the Continental Divide, miners made increasing illegal incursions into Ute territory, until in 1873 the Brunot Treaty removed the Utes from the area (Wyckoff 1999:223-234). With the San Juan Mountains now open to settlement, silver and gold mining towns such as Summitville, Rico, and Telluride took hold. These, in turn, created settlements that served them, either as smelting and processing points, like Durango, or as supply points, such as Del Norte and Saguache in the San Luis Valley, and Montrose in the Uncompaghe Valley, from which farmers and ranchers could ship their goods along the newly created toll roads and soon after by rail.

## **COAL MINING SETTLEMENT**

As rail lines and industry expanded in the late nineteenth century, not only in Colorado but in the rest of the United States, the demand for coal skyrocketed. By 1893, Colorado was the nation's leading coal producer (Wyckoff 1999:207). By the turn of the twentieth century, a network of settlements founded on coal mining and production lay across the southern part of the state, and coal mining had profoundly altered other areas of Colorado as well. Coal production took off in the northwest part of the state in the 1880s, booming off and on in the Yampa Valley from 1900 to 1930 (Wyckoff 1999:249-250). Coal fields resulted in new settlement and changes in existing settlement in Boulder, Weld, and Jefferson counties, and also in Fremont, Park, and El Paso counties (Ubbelohde et al. 1995:196). The largest coal field in the state, however, and the most significant to the coal mining industry, was the Raton Coal Field, which underlay much of Las Animas and Huerfano counties. There coal mining was not only the impetus for settlement but it had a profound impact on existing settlement in that region.

The Colorado Coal and Iron Company, later known as the Colorado Fuel and Iron Company (CF&I), established numerous company towns in southern Colorado. Engle, the initial coal mining town, sat south of the CF&I-created railhead at El Moro, and served as a model for subsequent company towns such as Starkville and Sopris. As is discussed later in this chapter, the company town was unique in that corporate influence on housing, commerce, and education was direct. American migrants and especially European immigrants flocked to the area to meet the mines' labor demands. Coal mining also had a massive impact on existing Hispanic plaza settlements, as men left plaza towns to work in the mines, and the plaza towns, in fact, often became company towns as the mining corporations tightened their holds on the plazas' economies. Trinidad, founded in the early 1860s by Hispanic farmers migrating north from New Mexico, had become the major market town for the area as well as the Las Animas County seat. With the coal boom, its population mushroomed from only a few hundred to nearly 6,000. To the north, Pueblo's ascendancy as the "Pittsburgh of the West" came to fruition, as the steel plants and smelters drew laborers and their families from a wide range of ethnicities.

On the Western Slope, settlements related to coal production, as well as those founded around oil and oil shale, began to appear as developers such as David Moffat took advantage of the region's mineral potential. New Castle, whose proximity to rail connections offered a commercial advantage compared to other Western Slope coal fields, was platted in the late nineteenth century and drew such major players as the CF&I Company and the Santa Fe Coal Company. Later, the Moffat road drew coal-production settlement to the upper Yampa Valley (Wyckoff 1999:249-250).

## **Agricultural Settlement**

As gold and silver mining interests entrenched in the state in the 1860s, zones of ranching and farming settlements also formed, growing in population and intensity of endeavor until agriculture was

arguably as important to the young state's economy as mining was. Dry farming was initially unsuccessful, and in the 1860s cattle and sheep ranching was the dominant form of agriculture. Nevertheless, the 1860s saw the beginnings of irrigated farming, and boosters felt few qualms about exaggerating the number of acres under irrigation in order to draw settlement.

## RANCHING SETTLEMENTS

Agriculture on the Plains was, for incoming settlers, a proposition that required constant adaptation to factors that stemmed from both the unfamiliar environment and ever-shifting commercial and legal realities. Open-range cattle ranching was, perhaps, a logical response to these factors. The "origin myth" of open-range ranching goes that westward-bound drovers, traversing Wyoming, were forced to abandon their team of oxen in a severe winter blizzard. Returning to the area in the spring, they were astounded to see their team was not only still alive but well fed and in good condition. Whether or not this is true, settlers discovered that the native grasses of the Plains were the ideal diet for cattle and soon began to pursue "open-range" patterns of cattle ranching, influenced by large cattle operations already established in Texas. Denver grocer John Wesley Iliff began his cattle operation modestly, buying trail-weary cattle from westward-bound travelers, fattening them up, and selling the beef to protein-hungry miners. In 1859, Iliff moved his operation to a ranch on the eastern Plains, running his herd on the vast expanse of unclaimed land. Open-range ranching became a more entrenched commercial proposition following the Civil War. Ranchers became adept at subverting the Homestead Act to preserve their access to the vast acreage required to support their livelihood. They would "lock up" water sources by patenting those sections that had water and make free use of the surrounding dry range. The patented sections were also the sites for the ranch steads, which, under the open-range system, tended to be large, multiresidence affairs with numerous outbuildings. Geographer Richard White notes that, by using water to control public lands, ranchers in effect turned the egalitarian settlement idea that was the Homestead Act into corporate control of the land (White 1994:31).

Early open-range ranching was fraught with conflict and sometimes chaos, as cattle herds intermingled, marked by brands that were easily and often altered. Cattle had to be driven long distances to market, which was often a counterproductive enterprise. In the late 1860s, Texas cattlemen, anxious to more efficiently reach the northern markets where beef fetched higher prices, began to ship cattle by rail. So it was, after the railroad began to lace the eastern Plains of Colorado, that "cow towns" – settlements built around the shipping points to eastern markets – sprang up along the rail lines. Julesburg, Sterling, and Brush began as shipping points along the spur of the Union Pacific that ran through the northeastern Plains. In the Arkansas Valley, Hugo, Kit Carson, and Cheyenne Wells were situated along the Kansas Pacific line, and La Junta, Las Animas, Lamar, Grenada, and Holly appeared along the Atchison Topeka and Santa Fe line.

Cattle ranching on the Western Slope was, like other forms of agriculture there, slower to establish. Non-native settlement on Colorado's Western Slope took hold 10 to 20 years later than settlement in other parts of the state. Barriers to settlement were considerable, and the daunting spine of the Continental Divide was not the least significant. Until 1880, most of the state west of the Continental Divide was ceded to the Ute tribe, although encroachment by non-native gold-seekers and cattlemen was common. In the northwest corner of the state, settlement was inexorably linked to that of southern Wyoming and established slowly after the Transcontinental Railroad was completed in 1869. With the discovery of gold at Hahn's Peak in 1872, cattle companies in southern Wyoming found new markets in the mining settlements, and many of them expanded their operations into northwestern Colorado, using the open range as winter feeding grounds for their herds.

Wyckoff (1999:160) notes that, as the Homestead Act and competition for rangeland from other types of stock-raising and farming endeavored intensified settlement, another pattern of cattle ranching emerged, influenced by Midwestern and British modes of stock farming. Centered around smaller, family-occupied ranch steads, "stock farming" was less dependent on the open range, and more reliant on the rancher's access to leased lands and irrigated pastures. With its emphasis on efficient land management, this practice proved to be sustainable, whereas open-range ranching fell victim to drought, hard winters, overgrazing,

overproduction, and competition for land by farmers. By the late 1880s, this more sedentary mode of stock raising became dominant, and open-range ranching soon became a larger-than-life, romantic memory.

## COMMUNITARIAN/UTOPIAN FARMING SETTLEMENT

The nineteenth-century United States saw hundreds of experiments in collective or communitarian living. Ralph Waldo Emerson commented in 1840 that “we are all a little wild here with numberless projects of social reform....Not a reading man but has a draft of a new community in his waistcoat pocket.” Communities such as the Shakers, Oneida, Mormons, and the Fourierists founded strictly organized social units based on strong religious or social ideals. Their agendas were many, but the citizens of these colonies had in common their desire to organize and construct ideal communities and to duplicate these models across the country (Hayden 1976:9).

Attempts at communitarian living failed more often than not. Causes for dissolution were many, and both economic and social at their roots. But often a settlement that began as a colony became entrenched enough that, even though the utopian ideals and communitarian impulses evaporated, the settlement itself still remained strong. One prominent example of this type of settlement in Colorado is Greeley, which was founded by the Union Colony in 1869. Organized by newspaperman Nathan Meeker, the Union Colony had no particular agenda other than emphasizing the single-family dwelling and encouraging temperance among its members. Meeker welcomed the idea of agricultural settlement on land that would have to be irrigated. He hearkened to the words of another newspaperman, *Rocky Mountain News* editor and railroad booster William Byers, who wrote that the land was “a savings bank crammed with riches since Noah’s flood – and therefore ready to honor drafts for an unlimited amount; for irrigated land never wears out” (Hayden 1976:266).

Meeker chose lands along the confluence of the Cache la Poudre and South Platte rivers, most of it purchased from the Denver Pacific Railroad. Access to water, good land, and the railroad served the colonists well. Although the communitarian underpinnings of the settlement lasted only about four years, the town was by then strongly in place, and after the dissolution of the colony it was largely indistinguishable in nature from other agricultural towns on the frontier.

Although the Union Colony is the best-known example of communitarian settlement in the state, it was not alone, nor was it the first. In fact, as early as 1854, a group of New Mexicans founded the Guadalupe Colony in the San Luis Valley, a region that was also, in the 1870s, the site of a handful of Mormon colonies near Conejos (Brosnan 2002; Ubbelohde et al. 1995). Mormons also settled near Mancos, on the Western Slope. The residents of Colfax, in the Wet Mountain Valley, were bonded primarily by their German ethnicity. Another example of a colony whose members had ethnicity in common was Cotopaxi, which was for a short time settled by a number of Jewish refugees lured by the false promise of irrigable land. Still other colony settlements in the state were not bound by any social or religious principle but were formed from the efforts of boosters and outside promoters who often exploited the appeal of the word *colony* to draw settlers to land they had purchased and platted. Green City, on the South Platte River, is a good example of one such settlement (Ubbelohde et al. 1995:129). Fort Collins was founded as an agricultural colony almost immediately after the fort for which it was named was abandoned by the War Department. Some groups were simply drawn together by the idea that successful farming on the Plains was possible only as a collective endeavor, because, as Brosnan observes, “Community settlement...provided in this arid climate the practical means for irrigation, the expensive basis of Plains agriculture” (2002:74).

## IRRIGATED FARMING SETTLEMENT

Irrigation was critical to any farmer who, like the communitarian settlers, came to Colorado with tool kits full of practices learned in the fertile fields of the East and Midwest. The daunting lack of water in the far eastern reaches of the South Platte Valley and the Arkansas Valley meant that settlements formed naturally where water was available, along the South Platte and Arkansas rivers. The railroads, avid boosters to settlement on the Plains, provided the connections farmers needed to market the crops they raised on their



newly homesteaded lands. From the 1870s on, settlement intensified in towns such as Sterling and Fort Morgan along the South Platte, and Lamar and Las Animas along the Arkansas, towns that had primarily been economically oriented around cattle ranching. Hay and alfalfa were key, as open-range ranching practices gave way to an increased reliance on feed crops. Although irrigation began on a small scale in both valleys, the construction of ditches and reservoirs made it possible to introduce a wider variety of crops, including sugar beets. Soon settlements specific to farming agriculture were established. Company towns along the Arkansas, such as Holly and Sugar City, served the sugar beet industry, which created a landscape Wyckoff calls Colorado's "most obvious expression of agricultural modernity" (1999:170).

Although mining settlements were established in the San Juans in the early-to-mid 1870s, the Western Slope's arid climate and its continued occupation by the Utes made the region less conducive to agricultural settlement than other parts of the state. It was not until after the Ute cession of 1880 that settlement came, as Wyckoff notes, "in trickles and bursts" (1999:220). The initial burst brought the railroads, farmers, and ranchers poised to enter the area following the Ute cession. The Denver and Rio Grande Railroad, which maintained a hold on Western Slope rail activity until the late 1880s, was an important booster in the area. Promoting the longer growing season, the lower elevation, and the generally milder climate west of the Continental Divide, the Denver and Rio Grande, and subsequently other railroad companies as well, were able to provide market access, both regionally and nationally, for cattlemen and farmers.

As with the Piedmont and Eastern Plains, irrigation transformed the Western Slope, but here fruit crops were the core of the agricultural industry. Prior to the opening of the Western Slope to farm settlement, Gunnison had been the center of trade for the region. After the Utes were removed and farm settlement spread west, the network of canals and ditches became more and more extensive in the last two decades of the nineteenth century, and farm settlements grew in size and number. Towns platted by the Denver and Rio Grande railroad boosters in the early-to-mid 1880s became, as irrigation intensified, a system of agricultural centers (Wyckoff 1999:234). Grand Junction, situated at the confluence of the Colorado and Gunnison rivers, began life as a railroad town and within a few years fulfilled the optimistic visions of the railroad's boosters, becoming a headquarters for agricultural production in the Grand Valley. To the south in the Uncompahgre Valley, Montrose and Delta were other significant settlements that became, like Grand Junction, urban centers serving the farmers and cattlemen who needed to connect with their markets, both in the mountain mining towns and farther to the east. Smaller towns like Fruita, Clifton, and Palisade in the Grand Valley and Paonia and Hotchkiss along the North Fork of the Gunnison River served as secondary shipping points (Wyckoff 1999:236).

Wyckoff notes that the Western Slope was a "zone of cultural replication rather than innovation" (1999:236). By this he means that the cultural landscape, as it did in the irrigated areas on Colorado's Eastern Plains, borrowed heavily from the Midwestern origins of its settlers. The grid patterns of the towns, the types of commercial enterprises, and commercial and residential architecture gave them much in common with the agricultural towns in such states as Iowa, Kansas, and Missouri.

## **DRYLAND FARMING SETTLEMENT**

Boosters, especially those associated with railroads, seized on another way of promoting farming in eastern Colorado as a way to increase population (and, subsequently, rail traffic). "Rain follows the plow" promoted the pseudoscientific notion that irrigation agriculture had increased humidity and created a "rain belt" across the High Plains. Wet years from 1884 to 1890 seemed to give credence to the idea, and dry farming soon centered around small towns such as Akron, Yuma, Burlington, and Cheyenne Wells. Sadly for the farmers, the 1890s were a much drier decade: the land dried up and so did the settlements with dry farming as their economic base. Some towns, such as Akron, revived in the years between 1906 and World War I. This next round of settlement was made possible by technological advances and better knowledge of scientific techniques in farming, as well as increased rainfall, which lasted into the early 1920s. Boosters in these years, especially those connected with the railroads, touted the possibilities inherent in growing small grains in the northwestern part of the state, and during this time dryland farming was especially successful near Steamboat Springs (Wyckoff 1999:248-249). Even this was unsustainable, however, and by the late

1920s many dryland farming settlements in this area had been abandoned. As is noted in the Rural Agriculture chapter of this context (Chapter 6), dryland farming was also important to agriculture in the Cortez – Dove Creek area of southwestern Colorado, and continued successfully into the 1970s (Horn 2004a).

## **Recreation and Tourism Settlement**

As settlement in Colorado intensified, some of the state's new citizens began to understand that the rugged-but-beautiful landscape surrounding them was, in fact, a marketable commodity. Nationally, the emergent middle class – a product of sporadic industrial prosperity – was hungry for new leisure experiences, and the growing web of rail connections in the United States made possible their search for the sublime through wilderness experiences. Conversely, many of Colorado's emigrant citizens wanted to "tame" nature, desiring enclaves of gentility that insulated them from the dangers and uncertainty of frontier life and mimicked the urban experiences they had left behind when they migrated west. Certain of Colorado's entrepreneurs, in particular William Jackson Palmer, were poised to take full advantage of the opportunity presented to those who might scratch either itch.

Founded in 1870, twelve years after Denver, at the site of the gold-rush trading town of Colorado City, Colorado Springs became emblematic of Palmer's "vision of regional empire" (Brosnan 2002:93). Palmer, through his Denver and Rio Grande Railroad, chose the location at the foot of Pike's Peak based on its natural springs and scenic impact. Palmer and other of Colorado Springs's founders advertised Colorado abroad as a tourist destination, comparing it in some literature to the Swiss Alps (Brosnan 2002:95-96). Their targeting a higher class of Europeans led to an influx of British immigrants to the new city. Colorado Springs became a destination health spa, resort, and an upper-class enclave, as Palmer built opulent hotels, a sanatorium, and planned Colorado College. Railroad connections allowed merchants there to attract larger businesses looking for an accessible, convenient, and attractive location to establish headquarters. Although Colorado Springs never rivaled Denver for regional dominance, it did become a strong supplement and, for many members of the upper class, a residential alternative.

Within a few decades, other settlements such as Glenwood Springs and Idaho Springs were founded on the Colorado Springs model. After 1890, as automobile travel became more and more common, camping, fishing, and climbing attracted an ever-increasing number of seasonal travelers. The establishment of Rocky Mountain National Park in 1915 gave rise to tourist-related service settlements, such as nearby Grand Lake and Estes Park. Skiing, popular as early as the 1880s (Wyckoff 1999:87) in some of the mountain mining towns, became an established recreational industry after about 1910 and was to radically alter the economic base of many mountain mining settlements such as Aspen, Georgetown, Steamboat Springs, and Telluride.

## **MANIFESTATION OF SETTLEMENTS IN COLORADO'S ARCHAEOLOGICAL RECORD**

This chapter began with a discussion of the processes of settlement in Colorado, as well as the history of different types and examples of settlements. It is important to reiterate that our focus in this chapter is not *settlement* in the singular, which would include every domestic site in the database, but *settlements* in the plural. Settlements are manifestations of habitation that move beyond the household scale and represent larger groups of people who live in proximity to one another. These sites range from camps to greater metropolitan areas. It is at different scales that these sites contribute to our knowledge of settlements in Colorado.

To make clear the schema behind this chapter, we have created a site matrix that ranges from the scale of a single household to a region, differentiated by urban and rural manifestations. Table 5 presents this matrix, along with site types and examples from Colorado's archaeological site database. We have included the scale of the single household in this matrix because such sites often provide the building blocks for investigating a larger, suprahousehold scale. This phenomenon is particularly true in an urban setting, where

each household holds the potential to tell us not just about the people who lived there but also about their relationship to neighborhood and city, not to mention the nation and the world. In a rural setting, particularly the case of isolated homesteads or mining cabins, a single household site contributes to our study of settlements only inasmuch as it is part of a larger, more regional study. These sites are more likely to contribute to our knowledge of other themes, particularly rural agriculture or industry.

**Table 5.** Settlements site matrix.

Scale	Urban		Rural	
	Site Types	Examples	Site types	Examples
Single Household	House/house lot	Baca House	Cabin, ranch, farm	See other chapters
Multiple Individual	Residence hotel	Tremont House	Camp	Cherry Creek Construction
	Boardinghouse	[Architectural sites only]	Boardinghouse	Sunnyside/Chandler
	Other commercial	5DV4167, drug store	Trading post	El Pueblo, Bent's Old Fort
	Institutional	[Architectural sites only]	Other commercial	Silver Springs Store
Multi-household/ Informal settlement			Institutional	San Juan Bautista
	Duplex/triplex	Berwind	Informal settlements	Boggsville
	Apartment complexes	[Architectural sites only]	Plaza settlements	La Placita, Madrid Plaza
			Large ranches/Farms	Medano Ranch
Elements of formal settlements/ Rural districts			Temporary occupations	Ludlow tent colony
	Residential district	Five Points	Truck farm district	Rocky Mountain Arsenal
	Business district	Manitou Springs	Elements of mining districts	Little Rome
	Industrial district	Elitch Gardens Project	Recreation areas for urbanites	Squirrel Creek Camp
	Mixed use	Broadway		
Formal Settlements	Suburbs	[Architectural sites only]		
	City	Denver, Pueblo	Town	Old Las Animas City
	Dump	Mill Street dump, Boulder dump	Company town	Berwind, Carbonera
	Cemetery	Ralston	Utopian community	Dearfield
			Military installation	Amache, Fort Garland
Region			Cemetery	El Carnero Cemetario
	Greater metro areas	Denver, Pueblo	Mining districts	Cripple Creek

Typologies are one of archaeology's most venerable tools. They serve to create order out of disorder, and they help us to see patterns. However, typologies by their nature are always open to contention. The goal in presenting this site matrix is to organize a wide range of phenomena. This is particularly important in that settlement-related research questions that can be addressed through archaeology range widely, depending on the scale of the settlement and of the investigation. So this typology is useful inasmuch as archaeologists find it useful, but it is not a holy writ. Many sites could be classified in more than one way. This variability does not mean the typology needs to be scrapped but merely that it falls prey to the problems that beset all exercises in categorization; phenomena generally exist on a spectrum and trying divide that spectrum into segments always leaves little scraps behind.

## Archaeological Characteristics That Make Sites in the Theme Identifiable

### HABITATION

As reflected in the settlements site matrix, almost any site that gives an indication of habitation can possibly fall under this theme. Domestic architecture is an important clue to the presence of such sites. However, as is clear when comparing historic architecture and archaeology databases, a historic house by itself does not an archaeological site make. Many historic houses have been recorded with no concern whatsoever for the archaeological potential the site may hold. Often that potential is held in below-ground portions of the structure itself, such as basements or cellars. Indeed, a continuously occupied structure may still hold archaeological potential if portions of the structure are abandoned or remodeled. More commonly, however, the true archaeological potential lies in associated features, be they cisterns, wells, privies, trash pits, or sheet refuse. Other associated features may have to do with landscaping, the raising or processing of plants and animals, food storage, and transportation (e.g., carriage houses or garages). Work, such as laundry, child care, and cooking, often takes place in the exterior spaces of houses or house lots, as does small equipment and vehicle repair, animal care, and household maintenance. In areas where architectural remains are scanty, the variety of artifactual remains is perhaps the best clue of habitation. If people have occupied a site for any period of time, the artifacts found there will reflect the range of activities suggested above and include personal items and a variety of food remains reflecting production, consumption, and storage. In particular, remnants of furniture and fragile items are a good clue that people intended to stay put in this location, as does remnant landscaping.

In identifying domestic sites, archaeologists should attempt to differentiate the residences of single households from either the households of multiple individuals, such as group homes or residential hotels, or multiple households, as found in apartment buildings and tenements. Such a differentiation will likely require more than one line of evidence. Architectural evidence can be found in specially built structures, such as duplexes, apartment buildings, and structures designed to be rooming houses or boardinghouses. Often, however, houses originally designed as single-household dwellings were pressed into service as rooming or boardinghouses (Groth 1994). Architectural evidence of this change may remain, as is the case of the Chandler/Sunnyside Boardinghouse (5RN548) at Summitville, where the larger rooms of a two-and-a-half-story single-family dwelling were divided and an additional staircase added for access to the attic (Clark 1998a). When architectural evidence is lacking, identification may come from historic documentation. Archaeological evidence, however, may suggest the presence of boarders, as when food preparation and consumption remains exceed that needed for a single family.

Several of the habitation sites found under the settlements theme are hybrids, in that their function includes, but extends beyond, habitation. Prime examples are the trading posts discussed previously that make up some of Colorado's earliest historic sites. Places like Bent's Old Fort (5BN548) were not only locales of commerce, but they also housed a collection of individuals and households, some of them permanent caretakers and others traders and travelers. Such resources are usually first identified in the historic record, but archaeological signatures of habitation, in conjunction with signatures of trade, and particularly fortified site enclosures make such resources visible in the material record. Large ranches and farms serve as the centers of agricultural enterprise, but they housed collections of individuals, some related, and some not. Ranches and farms that contain multiple habitation structures, especially bunkhouses, are settlements in microcosm, often housing individuals of widely varying class and ethnic backgrounds. Indications of a bunkhouse on such sites are likely to come either from the architecture itself or historic documentation or both.

Other habitation sites are more ephemeral in nature. Camps are a common form of temporary residence, and such sites may represent anything from a single night's stay to occupations of over a year. At the most ephemeral level, camps are represented by only a trash scatter indicative of food preparation or consumption. If a site is occupied for any length of time, landscape modification often occurs, as when the ground is leveled out to create tent platforms. More developed camps may exhibit greater modifications such as water-control features, dugouts, or frame structures. In company or government-controlled camps, formal

site structure is evident in roads and perhaps even neighborhoods. The site matrix distinguishes between camps and temporary occupations, which expand beyond habitation to include other functions evident in more permanent settlements. One reason for distinguishing temporary occupations from camps is that they often contain a different type of household; camps are generally collections of individuals, but temporary occupations often house families. Temporary occupations exhibit a more developed level of organization, one that might be evidenced by administrative centers, hospitals, or recreation areas or facilities. Forms of temporary occupations found in Colorado include military installations and tent colonies.

## COMMERCIAL AND INSTITUTIONAL SITES

As with habitation sites, multiple lines of evidence will often be required for identification of commercial and institutional sites. Architecturally, a one-room schoolhouse can strongly resemble a single-room habitation, but artifacts associated with the site should skew more toward food consumption and school-related items and less toward food production or storage and domestic items. Churches are a form of institutional site that are usually easy to identify if architectural remains are largely intact, but foundation remains are less identifiable. Yet in Colorado, the ruins of *moradas*, places of worship associated with the *Penitentes* (see Chapter 5, Ethnicity), often exhibit a cruciform footprint. Other institutional sites, such as granges or fraternal halls, are likely to be identifiable only through documentary or oral historical sources unless clear architectural indications remain. (For the identification of governmental structures, refer to Chapter 10.)

As noted above, some commercial sites in Colorado serve primarily to house travelers or transitory workers. Other commercial ventures visible archaeologically include stores, restaurants, and saloons. Retail establishments may be architecturally distinct or may be a more general structure pressed into use as such. Associated artifacts may include evidence of items broken or spoiled during shipping or the destruction of old stock. Especially in rural areas, mercantiles may serve as regional centers and, as such, include evidence of on-site consumption of food and beverages. Restaurants and saloons may also be architecturally distinct, or they may be visible only through concentrations of food or beverage remains, or food-service artifacts. Unfortunately, the wealth of bottles often associated with saloons make these sites a target for bottle hunters, so looters' pits may mark these sites as well. Ideally, documentary evidence can corroborate the archaeological record of these kinds of sites. Commercial structures are often evident on historic maps or, when addresses can be corroborated, in city directories.

Dumps and cemeteries are two kinds of institutional or commercial sites that can yield information at the neighborhood or settlement scale. Cemeteries are almost always institutional sites of some sort, associated with either religious or civil organizations. Cemeteries are often quite obvious, because of grave markers, boundary fencing, and often landscaping and other site planning. In the case of more informal cemeteries, burials may be marked not by headstones but by rock cairns or outlines, or plantings of introduced ornamentals. Dumps are ubiquitous in the archaeological record and can be found on sites of various sizes. They range in size and composition based on frequency, length, and degree of formality. Most are easily identified as concentrations of historic items that, given their condition, redundancy, and depositional context, appear to be refuse. Field archaeologists should be careful to look closely for these criteria before identifying a site or feature as a dump. Particularly in rural areas, what may at first glance, appear to be a dump, may indeed be a short-term habitation. Care should be taken to look for evidence of structural remains before identifying such sites as dumps. The question should also be asked, does this trash better represent a campsite than purposeful trash disposal?

Community dumps are the type of dump that can most tell us about settlements and their inhabitants. In many cases, such dumps are institutional or commercial, but sometimes they are more informal and reflect the illegal or at least informal disposal practices of a neighborhood.

## SETTLEMENTS

Settlements are collections of households that are spatially related. When small, the entire settlement can be approached archaeologically. More often, however, what we actually address is a portion of a settlement, be it a house lot, a block, a neighborhood, or a commercial district. In the case of urban archaeology, it is nearly impossible to investigate an entire city. In this way, the city is similar to a rural region. Archaeologists address this larger entity through the portions that are researched, contextualized by those that are not.

It is helpful to separate out informal, often small settlements from formal, usually larger ones. An informal settlement is often the kernel around which a larger town will develop, but in Colorado, where there are numerous examples of “instant cities,” many formal settlements became towns or even urban centers almost overnight. What distinguishes those settlements classified as “informal” in the matrix (see Table 5, page 117) is that they were never platted and were often not legally recognized as a town. Once land ownership is available to anyone through purchase, residents enter “the problematic world of strangers” (Lofland 1973:22 in Beaudry et al. 1991). Rather, informal settlements are collections of households that are often related to one another, either through kinship or shared labor. If commercial enterprise did take place, it did so within the context of people’s homes rather than in specialized structures. These settlements will be visible in the archaeological record as multiple household locations, often associated with features related to making a living.

A distinctive form of informal settlement represented in the archaeological record of Colorado is the plaza. Plazas are a type of settlement common in areas of Hispanic occupation, and southern Colorado is no exception. An outgrowth of Spanish law (Mundigo and Crouch 1991), plazas are multihousehold settlements where habitation and other structures are grouped around an open area, or plaza, held as common land. Some plazas in Colorado were fortified, or composed of contiguous rooms, whereas others consisted of more scattered structures. Plazas will often exhibit other evidence of Hispanic occupation, such as flat-roofed structures, corner fireplaces, outdoor beehive ovens or *hornos*, and flaked stone tools or glass (see Chapter 5, Ethnicity).

Towns represent not just a step up in size from informal settlements but often also a change in legal status and social composition. Archaeologically this is represented by a range of structural remains and artifact scatters. These remains are often found within a formal layout, usually based on a grid or other street and lot configuration. Not only are households represented, but a range of commercial and institutional features (see above) are as well. Depending on the town, it is likely to house productive facilities, whether these are agricultural, craft, or industrial. Mining towns may not themselves feature mines or mills but are associated with them both spatially and in documentary records.

Most towns are a voluntary coalition of people, drawn by location and opportunity. There are several exceptions to that pattern that are common in Colorado. Towns explicitly linked to a particular company differ from a typical town in important ways. First, the population may be forced to live and do business there as a condition of their employment. In such situations, living conditions in company towns become a critical node of contention between workers and management. As such, they have been a productive location for archaeological research into daily life (Larkin et al. 2003). Other companies build towns, encouraging, but not requiring, their employees to live and do business there. In either case, the existence of a narrow range of structural types strongly suggests that a settlement was greatly influenced by a single company. As discussed in the introduction, utopian communities are also common in Colorado. Whether based on religion, philosophy, or economic practices, utopian communities often have spatial configurations that are explicitly linked to community goals or beliefs. In the Intermountain West, Mormon towns built on the city of Zion plan are a good example of the spatialization of ideology (Leone 1973; Olsen 2000). Greeley and Nucla are both Colorado communities that began with utopian tendencies but evolved into more typical towns.

By the time a settlement has reached formal-town status, it is a legally recognized entity, and the available documentary evidence expands because of it. At the very least, a plat map should have been filed

with the county. In many instances, the built environment may differ radically from the plat (either in size or layout), but the plat signals its recognition by the county. Company towns can usually be readily identified as such through documentary evidence. A town will likely also be reflected in federal records, whether because it had a post office or because its residents can be found in census data. If the town exceeded several hundred occupants, fire insurance companies were likely to have mapped the town and its structures. Other documentary evidence of towns, even small or ephemeral ones, can come from county and state maps, local newspapers, and oral histories.

Cities are essentially towns of a larger scale, but they also have an urban population density. What is considered “urban” changes through time, particularly as our country becomes more urbanized. In 1890, the U.S. census reflected that more people lived in urban than in rural areas. At that time, any settlement with legal boundaries and a population exceeding 2,500 people was considered urban. In the 1950 census, areas were singled out if they exceeded 5,000 people. In 2000, census officials were grappling with the many areas of high-resident populations without any town or city center. They created two new categories: urban clusters and urban areas. Urban clusters range in population between 2,500 and 49,999 people, whereas urban areas exceed 50,000. What both areas share is an urban core: to qualify as urban, there must be a core area where population density meets or exceeds 1,000 people per square mile. Table 6, Table 7, and Table 8 list the settlements the U.S. census classified as urban in Colorado in 1900, 1950, and 2000 under these changing criteria. There are some clear continuities, for example, places that have been urban for at least a hundred years, such as Denver and Pueblo. Other towns met the lower, early criteria, but have not kept up with the pace of urbanization. When classifying a settlement a town or a city, the historic population at the time period under study, as well as the status of other regional centers, should be taken into consideration.

Military installations are a site type that is hard to place within our settlements site matrix. Clearly the most important theme they address is the role of the federal government (please refer to Chapter 10), but many military installations are also settlements. Short-term military encampments belong with the other types of camps. However, more permanent installations can be classified as rural manifestations of planned settlements; they share many characteristics of a town. They are the locations of a range of activities, including habitation, consumption, education, and often production. The relationship between individuals and a larger central authority looms large in these sites. They are often the most planned, most top-down of the settlements in the archaeological record. In many instances military installations house a mixture of individuals and families. In fact, the important role women have played in military installations throughout the West has been an important topic for archaeologists (Gardner 2004a; Voss 2002).

Early or ephemeral military installations are sometimes difficult to track down, but the more permanent have high visibility both in the material and the documentary record. The portion of such installations that have the greatest potential to address this theme are the habitation areas, marked by barracks; single and multifamily dwellings and the spaces surrounding them; community spaces such as mess halls, recreation centers, and open public spaces; and trash dumps. Researchers should also be on the lookout for the evidence of civilian activity that often occurs just beyond the legal boundaries of military installations, but that are linked to the base itself. These activities might include the encampments of camp followers (often including women and/or children) and satellite service industries, such as laundries, saloons, and restaurants. For example, historic photos of Fort Wise/Old Fort Lyons (5BN395) show tepees set up outside the fort. Research at the site revealed evidence of tepee rings and several graves, as well as concentrations of butchered cow and bison bone, indicating camp followers provided meat for the troops (Carrillo 2005).

**Table 6.** Colorado settlements classified as "Cities" (pop. 2,500+) in the 1900 U.S. census.

Cities	Population
Aspen	3,303
Boulder	6,150
Canon City	3,773
Central City	3,114
Colorado City	2,914
Colorado Springs	21,085
Cripple Creek	10,147
Denver	133,859
Durango	3,317
Florence	3,728

Cities	Population
Fort Collins	3,053
Grand Junction	3,503
Greeley	3,023
Idaho Springs	2,502
La Junta	2,513
Leadville	12,455
Pueblo	28,157
Salida	3,722
Trinidad	5,345
Victor	4,986

**Table 7.** Colorado settlements classified as "Cities" (pop. 5,000+) in the 1950 U.S. census.

Cities	Population
Alamosa	5,354
Aurora	11,421
Boulder	19,999
Canon City	6,345
Colorado Springs	45,472
Denver*	498,743
Durango	7,459
Englewood	16,869
Fort Collins	14,937
Fort Morgan	5,315
Golden	5,238

Cities	Population
Grand Junction	14,504
Greeley	70,354
La Junta	7,712
Lamar	6,829
Longmont	8,099
Loveland	6,773
Pueblo*	73,247
Sterling	7,534
Trinidad	12,204
Walsenburg	5,596
*classified as "urbanized area"	

**Table 8.** Settlements classified as urbanized areas (over 50,000) in 2000 census.

Urbanized Area	Population
Boulder	112,299
Colorado Springs	466,122
Denver-Aurora	1,984,889
Fort Collins	206,757
Grand Junction	92,362
Greeley	93,879
Lafayette-Louisville	60,387
Longmont	72,929
Pueblo	123,351



## THE CITY AND REGION

Archaeologists have been turning with greater frequency to the study of the cultural landscape (Anschuetz et al. 2001; Yamin and Metheny 1996), a concept that encompasses the whole of cultural and natural features in an area. It is an idea that takes all material manifestations into account, whether it be individual artifacts, architecture, sidewalks, park systems, or the transcontinental railroad. Landscape is a concept that helps link the small to the large-scale and thus requires a consideration of connections, something critical when studying the archaeology of settlements in the modern world. The town bypassed by the stage line, the railroad, or the freeway is a town very different from its better-connected neighbors. What archaeologists encounter when working at the scale of a large city, a greater metropolitan area, or a rural district, is an artifact of amazing complexity, a story written by thousands of authors. When deciding how to identify a region of study, a balance between material remains, legal boundaries, and historic conceptions of the place are important. For example, one of the most salient rural regions for study is a mining district (Hardesty and Little 2000), an area that was recognized historically as important entity and one that holds a range of evidence for investigation of large-scale processes. In an urban setting one may choose to focus on the city itself, as defined by legal boundaries, or on the greater metropolitan area, something that can be identified either through population through census data or based on material remains of interest. For example, a study of the material ramifications of public transportation would take its clues from the historic boundaries of a transportation district.

### Representation of Site Types in the Database

#### SITES WITHIN THE THEME RECORDED IN THE STATE

As suggested above, a wealth of sites that relate to the theme of settlement exist in Colorado. In some cases these sites have been recorded as archaeological sites. In other instances, standing structures have been recorded, but they have not been systematically assessed for their potential as archaeological sites. The following discussion is organized based on the site matrix presented in Table 5, page 117. When possible, emphasis has been placed on excavated examples because they present the fullest examinations of the research potential of such sites.

#### Sites Representing Single Households

There are 1,363 historical archaeological sites in Colorado that have been coded under the criterion *single dwelling* in the OAHIP site database. A search of the architecture database under the same criterion in Compass (the Office of Archaeology and Historic Preservation's online site database) resulted in 2,306 identified sites.

As suggested in the previous section, many of the rural single dwelling sites are more likely to yield data related to other themes. Studies at the Baca House (5LA1630) in Trinidad are examples of the type of information that can be gained through the archaeology of an urban house lot. The Baca House was constructed in 1870 by John Hough, who moved to Trinidad from Boggsville, Colorado. This two-story adobe on the corner of Chestnut and Main streets was a hybrid house, blending Anglo-American and Hispanic building traditions. In 1873, Hough sold the property to Felipe de Baca, widely recognized as the founder of Trinidad, and his wife Dolores. Felipe, a prominent Hispanic merchant and politician, died the next year, but Dolores lived on the property with her children and servants until she died in 1915. The site is now controlled by the Colorado Historical Society, as is the adjacent Bloom House (5LA2180). Both are managed as the Trinidad History Museum.

The first excavations on the property occurred in 1977, when artifacts were encountered during the installation of an underground electrical line (Stuart 1977). The excavations revealed an area of reddened earth, charcoal, coal, and several blocks of sandstone. These materials were interpreted as the remains of an *horno*, a domed-shaped outdoor oven common on Hispanic sites. Although the material evidence is somewhat scanty (limited excavations meant no footprint of the feature was uncovered), they are corroborated

by oral history. If, as it appears, the Baca family cooked in an *horno* in downtown Trinidad, they made a conscious, and highly visible, decision to maintain an element of traditional Hispano foodways. Research using historic documentation, in particular Sanborn Fire Insurance maps and historic photographs of Trinidad, has pinpointed the likely location of the Baca privy (Clark 1998b). This privy has not yet been excavated, but future investigation of it, or other buried features at the Baca House, could deepen our knowledge of the foodways, and other elements of the lives of this prominent Colorado family. In particular, the privy could yield important evidence about health and sanitation. As well, other features related to household maintenance and the play of children could exist in the yard.

## **Site Representing Multiple Individuals**

### **Hotels**

Only 18 sites in the historical archaeology database have *hotel* listed as a site type or under original use. This compares quite poorly with the 561 architectural sites that the same search elicited. Although not often recorded based on their archaeological merit, one of the best-known historical archaeological investigations in Colorado is that of the Tremont House hotel (5DV2954) in Denver. Like many hotels, the Tremont House, in operation between 1859 and 1912, served both travelers and residents. Originally opened as a boardinghouse, the Tremont had a restaurant and, by 1860, a saloon. As such it has much to tell us about the early residents of and visitors to Denver. Discussions of the Tremont House excavations and results can be found in detail in Carrillo et al. (1993) and Carrillo and Jepson (1995). What follows are highlights for consideration of an archaeology of Colorado settlements.

One of the most important contributions of the work at the Tremont House was how it revealed the promise of urban archaeology in Denver. The location of the former Tremont House was, at the time of its excavation, a nondescript parking lot. Based on detailed studies of Sanborn Fire Insurance maps and historic photographs, the investigators, led by Richard Carrillo, set up a ground-penetrating radar survey of the lot. That analysis pinpointed the likely locations of intact walls, which were then revealed as backhoes peeled back the blacktop and a thin layer of clean fill. Over 26,000 artifacts were recovered during the excavation, many of them in discrete, buried features, like an abandoned coal chute. Prior to the 1870s, at least some of the refuse created by the hotel was disposed of on site. Later items represent artifacts left in place after the 1912 flood of the structure and its subsequent demolition.

A second important element of the Tremont House excavations is what they revealed about the evolving nature of different regions of a city. The hotel was originally a temperance boardinghouse when it was built in 1859, and in 1860 a new owner remodeled the building and added a bar. When reopened later that year as the Tremont House, the structure was one of Denver's finest hotels. It was advertised widely in newspapers during that era and artifacts indicate that fine furnishings and fine dining were the order of the day. By the 1880s, the Tremont House and the neighborhood surrounding it (Auraria) had taken on a different tenor. Located adjacent to the railroad and prone to flooding by Cherry Creek, Auraria transitioned to a mixed-use neighborhood of warehouses and structures housing a diverse immigrant population. Although the Tremont House disappeared from newspapers in the 1880s, it continued to function, but as a residential hotel or boardinghouse. Later additions were flimsy and the serving dishes cheap, demonstrating a decline in the prestige of the business. The shift from more expensive hotel to cheaper residential one is common in urban areas and often seen in neighborhoods that move out of fashion for the middle and upper class (Groth 1994). Tracking the details of how neighborhoods evolve with changing dynamics of investment, the class and ethnicity of occupants and proximity to industry or transportation corridors is one of the promises of historical archaeology in Colorado and elsewhere.

### **Boardinghouses**

Boardinghouses differ from hotels in that they are specifically designed with more long-term occupants in mind. They also have communal areas where boarders eat most of their meals. Hotels often have restaurants and are typically used as and intended for shorter-term occupation (one or a few nights)

though that doesn't rule out the occasional longer-term guest. As seen above with regard to the Tremont House, the line between hotel and boardinghouse is sometimes difficult to discern. It may also be a line that gets crossed during the life span of the same structure. A search of the OAHF database yielded 23 historical archaeology sites that include a boardinghouse. These sites are almost all mining complexes associated with a boardinghouse, like the Ute-Ulay Mill and Mine (5HN77). The same search in the architecture database yielded an additional 43 sites. It is only in the architectural database that urban boardinghouses can be found. No site that was strictly a boardinghouse (which exempts the Tremont House) has been tested or excavated in Colorado. However, many of the boardinghouses in the historical archaeology database are associated with features that contain archaeological data (such as privies or trash dumps). Two that have been recommended as eligible are the Chandler/Sunnyside boardinghouse in the Summitville Mining District (5RN548) and the Kohler/Longfellow boardinghouse (5SA495) in the Red Mountain Mining District.

### **Trading Posts**

The trading post site type is complex enough that it is hard to run a database search to identify them. Some may be identifiable through the term *fort*, although most forts are military related rather than trading posts. Luckily, several early trading posts have been subjected to archaeological research, including Bents Old Fort (5BN548), Bents New Fort (5BN394), and El Pueblo (5PE303). Archaeology at Bents Old Fort was first pursued largely to research the architectural layout of the fort prior to reconstruction by the National Park Service. That work helped the NPS decide between conflicting historic documentation of the fort's appearance. It also resolved the function of several rooms, such as the blacksmith shop and the trading room. At that level, the archaeology tells us more about fur trading as an industry than trading posts as communities. Douglas Comer, however, has used the archaeology of Bent's Old Fort to talk about the rituals that made the settlement possible (Comer 1996). Trade was the economic engine behind such settlements, but it was also a ritual, one in which the Plains tribes had been engaged for millennia. Much of what members of the Plains tribes traded for were items that had little or no economic value to them, in part because they already produced much of what they needed. As Comer suggests, during the era Bent's Old Fort was occupied (1830 – 1849), the firearms traded there were no better suited for buffalo hunting than the bow and arrow. So although we might be tempted to classify these as subsistence-related artifacts, firearms were prized by Indians for what they symbolized, a relationship between its owner and their new allies, the Americans. Their widespread presence in the archaeological record at the fort should be interpreted as evidence of the creation and maintenance of community relations.

### **Other Commercial Sites**

Commercial sites related to settlements are not well represented in the historical archaeological database of Colorado, although many are recorded and discussed in Chapter 7, Industry. A search of the database for sites coded as commercial under either style or as a theme reveals only eight, including the Tremont House. Hand-culling the database for known commercial types, such as stores or saloons, turns up a few more, but still they are clearly underrepresented in the database. Several have been tested or excavated, however, including both urban and rural examples. Unfortunately, none of them really live up to the data potential such sites have for telling us about settlements.

The archaeology performed prior to the replacement of the 20th Street viaduct in Denver is an example of some of the frustrations of urban archaeology (Kalasz et al. 1994). Historic documentation, in particular Sanborn Insurance maps, indicated that a number of commercial establishments had at one time been present in the project area, most notoriously Mattie Silk's House of Mirrors (5DV4168), a brothel, and the J. W. Fleming Drug Store (5DV4167). Excavations in both locations revealed that, although the foundations remain, the cellars were filled with the debris from the razing of the superstructures above them. No in situ artifacts were recovered in either location. It should be noted, however, that at 5DV4167, excavations were restricted to a 6-foot-wide strip immediately adjacent to the sidewalk. It is possible that other areas of the cellar remained intact; had excavations extended beyond the project boundary, they might have revealed a greater proportion of the cellar. This project illustrates well the impact narrow rights-of-way can have on the research potential of urban archaeology. A contrasting case can be found in the work of

Roberta Greenwood at the Los Angeles train station, where researchers were able to address many research questions despite a restricted and arbitrary sample (Greenwood 1996).

In the late 1990s, Alpine Archaeological Consultants, Inc., undertook the excavation of the Silver Springs Store (5ME642), about a mile north of Mesa, Colorado (Horn 2001b). This store was established about 1904 to capitalize on local automobile traffic. The store continued to serve local travelers until 1936, when it was destroyed by fire. As such, the site contributes more to our knowledge of transportation-related sites than it does to settlements. However, it is important to note what excavations revealed about the archaeological signature of commercial enterprise. The store yielded artifacts comparable to those of a domestic residence, not surprising given that the proprietors lived on site. Investigators noted that a wide variety of home-canning items were present on the site, indicating that the proprietors of the store did not necessarily rely on its goods for their own subsistence. Indeed, one of the associated features is a chicken coop that was in use in the 1930s. There were, however, two tell-tale types of items indicating this was the location of a crossroads store: crown caps and automotive-related artifacts. A large number of crown caps were recovered, evidence that many bottles of soda pop and beer were both purchased and consumed on the premises. The automotive-related items were of such a wide variety that, rather than the maintenance of one or two vehicles, they indicated the repair of many travelers' vehicles. In many ways, the Silver Springs Store is an early twentieth-century version of a stage-stop.

### **Institutional Sites**

Institutional sites are even more difficult to easily search for because no such theme is recorded in the database. A search specifically for schools and churches in the historical archaeology database yielded only five sites with schools, and only one church has been recorded. These site types are much more common in the architectural database, where 65 schools and 219 churches can be found. Most of the schools in the historical archaeology database are associated with larger sites, such as a townsite. Of these sites, only two have been investigated for their archaeological potential. Artifacts associated with the Pine Grove School, 5DA989, were collected, but unfortunately the report on that work is missing from the OAHHP files. The location of the schoolhouse at Boggsville (5BN363), as established by using historic maps, was excavated as part of an archaeological field school (Carrillo et al. 1997). Although the foundations of the adobe structure were exposed and few potentially school-related items were recovered (e.g., a piece of slate), the majority of remains recovered were related to the reuse of the structure, which only functioned as a school for about two years.

Perhaps the institutional site in Colorado that has been most studied by archaeologists is the complex at La Capilla de San Juan Bautista (5SH125), near present-day La Garita in the San Luis Valley. Now an art center, the complex centers around a standing, former Catholic church but also includes the foundations of the earlier 1870s adobe church, a cemetery (discussed later), and a former nunnery. Research at the site included detailed mapping of the surface features and artifacts, as well as testing in several features (Carrillo and Clark 1995a). Several test units were placed within the former nunnery. The territorial-style adobe structure was occupied by nuns of the Sisters of St. Joseph starting in the 1870s. They were responsible for taking care of the church, and they also ran a school on the site. In about 1916, the nuns moved off site. The former nunnery was occupied for a short time by the parish priest but thereafter by a church caretaker.

The majority of items recovered from inside the structure appear to have been left when it was abandoned in the 1940s. However, a few items recovered from directly below the plank flooring are likely associated with the site's earliest habitation, including an 1869 five-cent piece and two buttons. The most intriguing artifact, however, was an 1841 quarter drilled for use as a pendant. A few pieces of the chain on which it hung were recovered intact, held in place on the pendant by corrosion. Although oral history suggests the nuns may have been either Irish or Irish-American, such "pierced coins" are common on African-American sites and often date to the year the wearer was born (Wilkie 1997). During this time period, personal adornment for Catholic nuns was discouraged. If this was worn by one of the sisters at this site, it would likely have been done so in secret. This artifact suggests a potentially interesting convergence of folk practices by members of seemingly very different ethnic groups.

Investigations at the site also revealed more pedestrian elements of life at this religious complex. The site appears to have had cleared fields irrigated by a series of canals and a small holding pond. The barn and other outbuildings indicate that this was, in many ways, similar to the agricultural complexes of parishioners. The extent to which, and the means by which, male and female members of religious orders provisioned themselves has been the object of study in England (Gilchrist 1994). More intensive study of this site could contribute to our knowledge of religious life at this “Frontier Catholic” (Carrillo and Clark 1995a) complex.

## Camps

Camps are a common site type, and the database reflects that. A search of the OAHP database under *site type* yields 410 historic camps. As suggested above, these range from a handful of artifacts to sites with structural remains and formal dumping areas. Camps are related to many of the other chapter themes, including rural agriculture (cow and sheep camps), industry (logging and mining camps), recreation (campgrounds, hunter’s camps), federal government (Civilian Conservation Corps –CCC – camps) and linear features (tie-hack, railroad construction, and road construction camps). The discussion of logging camps in the Industry chapter of this volume (Chapter 7) is quite detailed about how camps and the timber industry evolved together. Chapter 10 (Government) includes a detailed discussion of the CCC, including the archaeology of a CCC camp.

For addressing the theme of settlements, camps that represent something other than passing occupancy will be the most productive. Longer occupied camps represent temporary communities, ones that often reflect the same sorts of behavior and tensions as in more permanent settlements. Researchers of historic camps would be well served to consult Rogge et al. (1995), a detailed and accessible archaeological study of the camps (some planned, some not) of dam construction workers in Arizona. One of Colorado’s most thoroughly studied camps is the Cherry Creek Construction Camp (5LP1915), a camp occupied in 1890 by laborers constructing the Rio Grande Southern Railroad. The site consists of about four dugout habitations, several tent platforms, and food preparation and storage features and associated refuse. It was excavated by Alpine Archaeological Consultants, Inc (Horn, Pfertsh et al. 2003).

From the 1860s to the early 1920s, corporations that engaged in large construction projects in the West often used labor contractors who would send groups of recent immigrants to the projects. Perhaps the most famous examples are the groups of Chinese, who worked for the Central Pacific, and Irish, who worked for their competition, the Union Pacific. The documentary evidence regarding the construction of the Rio Grande Southern is scanty, but records indicate that they did have Italian crews working on the construction. The remains at this site indicate that the residents of the north side of the site were Italian laborers living segregated from others. The ethnicity of these laborers was determined based on the suggestions from the historic record and the presence of a distinctive stone bread oven, a feature often associated with Italian or Greek sites in the West (Wegars 1987).

The Italian residents of the camp lived under generally impoverished conditions. Many items were scavenged from their work site and reused. Not a single luxury item was recovered from excavations and tobacco, liquor, and wine consumption appeared to be minimal. Smoking and drinking were typically common practices in camps and other settlements composed mainly of single men, as they were at a nearby Rio Grande section house (5LP1921). Thus, these remains are evocative of people who either had very little expendable income or who saved their money for their families back home. The bread oven, as well as a probable spring house, indicates that the residents strove for levels of self-sufficiency not often seen in labor camps. They also had a clear sense of community in that food preparation and consumption often took place communally. This activity sets them apart from the residents of the south side of the site, who engaged in no such communal activities.

## **Multihousehold/Informal Settlement Sites**

### **Multihousehold Structures**

No duplexes, triplexes, or apartment complexes have been recorded as individual archaeological sites in Colorado, although 12 are present in the architecture database. However, six duplexes were part of the investigations at the company town of Berwind (5LA2175). None of these structures themselves were investigated, although some associated features were (Wood 2002a). The archaeology of Berwind is discussed in more detail in the section below on company towns.

### **Large Ranches and Farms**

A number of large ranches and farms are present in the site database. If we use bunkhouses as a key to identifying ranches that are composed of multiple households, 30 are in the historical archaeology database. Certainly other farms or ranches would also fit this criterion, even without a recorded bunkhouse. None of the 30 sites have been excavated, but two that appear to hold good potential for further research include the Medano Ranch (5AL301) in the San Luis Valley and the Persse Place (5DA320) in the Denver foothills. The Medano Ranch is on the National Register and the Persse Place a contributing element to a National Register Historic District.

### **Informal Settlements**

This site type, *informal settlements*, is quite difficult to search for in the OAHIP database. Perhaps the best way to find such sites is to look for sites that meet the previously described criteria within the 551 sites coded under the theme *settlement*. Many of these sites are single households, but concentrations of households, such as the Valdez Plaza (5LA5912), are found using the theme. It is also likely that a number of the 235 historical archaeological sites that have been recorded as *town* fit the criteria discussed previously for informal settlements.

The site of ongoing research, Boggsville, (5BN363) is a great example of a well-researched informal settlement. At its founding in the 1860s, the site was a collection of timber, adobe, and jacal structures on the banks of the Purgatoire River near its confluence with the Arkansas. In the 1870s, it grew into a small community, with five families living there at its peak. Most of the residents were related through the Jaramillo family of Taos, including Tom and Rumalda Boggs who built the first house there. Rumalda, on whose Mexican land grant the site was settled, was joined by a number of her female relatives, all of them, like her, married to Anglo-American men. The Jaramillos were also joined by John and Amache Ochinee Prowers, who for a time sold supplies to travelers on the Mountain Branch of the Santa Fe Trail, which ran through the site. Amache, a Cheyenne woman married to an Anglo-American trader, also had local land claims, hers related to reparations following the Sand Creek Massacre.

The Boggs and Prowers houses, substantial adobes set out in a site with formal planning, remain to testify to the transformation of the site from a jumble of structures to a more formal settlement. Still, Boggsville was never platted, and its residents were tied together by bonds of family. In 1883, after most of the residents had moved on, Rumalda Boggs sold the entire claim to a single rancher.

Archaeological work at Boggsville, which is a historic site interpreted for the public, has focused on a number of research goals. Early on, much of the excavation was driven by concerns of building preservation and reconstruction (Carrillo and Barnes 1990; Carrillo, Kalasz et al. 1994). Units were excavated prior to disturbance or to trace the location or extent of architectural features. This work at the household scale yielded items that reflect the multiethnic nature of the occupation. Items that evidence Amache's continuation of Cheyenne practices were recovered from the Prowers house, including seed beads and ground and chipped stone (Clark 1996). It is clear that the many women from Taos who lived at the site brought their Hispanic foodways north with them. A range of manos and metates were found throughout the settlement (Clark 1997a).

Other archaeology at the site has focused on a more settlement-wide scale, including research on the earlier, riverbank settlement and the schoolhouse (Carrillo et al. 1995), and a ground-penetrating radar (GPR) study leading to the discovery of the location of the Santa Fe Trail as it passed through the site (Carrillo and Petersen 2002a). Analysis of the architecture of the remaining structures indicates the balance residents sought between a superficially Anglo-American appearance and the strong influence of Hispanic architecture and Cheyenne place ways on construction materials and the layout of the structures (Clark 1997a). This combination of household and settlement scale work means that interpretations can address life in the settlement, as well as how it was experienced by the myriad travelers who passed through on the Santa Fe Trail. Such work follows the suggestions of researchers at other settlements that, like Boggsville, were made up of multiethnic households. They have suggested that at such sites archaeologists need to address multiple scales of analysis. In particular, though artifactual evidence may suggest cultural accommodation, spatial evidence may indicate more traditional practice (K. Lightfoot et al. 1998).

### **Plaza Settlements**

Although plaza settlements are an important site type, especially in southern Colorado, only one historic site, La Placita (5LA6104), was retrieved by a search for *plaza* under site feature (although a multicomponent site with a prehistoric plaza was also retrieved). Two more sites, the Valdez Plaza (5LA5912) and the Weston Plaza (5LA5924) were found in the historic architecture database. The difficulty in finding plaza sites in the database is likely due to the fact that a plaza is as much a site plan as it is a feature. Other recently recorded plaza sites include the El Rito Creek site (5LA1107) and the Madrid Plaza (5LA9120) (Carrillo et al. 2003). Chief Ouray's ranch was also built around a *placita*, indicative of the intertwining of Hispanic and Native American settlement design (Baker 1991c). It is likely that other plaza sites are represented in the database but have not yet been recognized as such.

The work at La Placita, which was investigated over a two-year period, exemplifies the characteristics and research potential of this type of settlement (Clark 2003; Corbett 2003). The main portion of the site consists of six structures made of unshaped local tabular sandstone that are grouped around three sides of an open area. Three of these were habitations, one a semi-subterranean storage feature known as a *soterrano*, one a barn, and one a chicken coop. Other related features were found mostly below the edge of the canyon wall and include a sheep drive line, an enclosed seep that served as the residents' water source, a corral, and a lambing pen in a rockshelter. Diagnostic artifacts indicate the site was occupied for about a decade centering on 1890.

Excavation data suggests that the site was occupied by two or three households. They supported themselves with a mixed strategy of gardening, hunting, raising livestock, and wage labor. Two garden terraces are present on the site. They are stone-faced and have been built up with trash and fill. The terraces are sited in such a way as to take advantage of runoff from the adjacent rock outcrop. This incorporation of natural topography can be seen in many of the site's other features, including both corrals. One of the most impressive of these features is the walkway composed of flagstone pieced around bedrock and lined with curbstone of a different color. The effect is quite striking and would have announced to site visitors an investment in this settlement.

One of the main research questions investigated at the site was whether this undocumented settlement was indeed a plaza site. The central plaza of such settlements was traditionally communal land. As such it was treated as public space and was a focal point of both individual and group activity. For example *hornos* were often situated in the plaza, and women used them for both individual and group baking (Brown et al. 1978). Archaeological investigation of a long-inhabited plaza settlement in New Mexico indicates that the plaza was kept clear of trash through a century of use (Heffington 1992). Detailed mapping of surface ceramics at La Placita showed that they too kept this central area clear. In plaza settlements in New Mexico, the main (often only) entrance to structures was off the plaza. This same pattern was also repeated at La Placita. In addition, testing supported surface evidence that a U-shaped pile of stones in the plaza are the collapsed foundations of an *horno*. It seems clear that the center of this site was both planned and treated as a plaza.

The following information might seem a trivial bit of local history. However, La Placita followed a traditional Spanish/Mexican settlement plan that directly subverted U.S. homesteading laws. Although communal land grants were the norm before U.S. takeover, homesteading laws required that claimants live by themselves on their own land. As documented by Minette Church, Hispanics who settled in plazas early in the American period were able to circumvent the laws, as did many of their Anglo-American neighbors (Church 2002). However, by the time La Placita was occupied, Anglo-Americans were the majority of land owners in the region. Perhaps the residents of La Placita realized too late that they would not have the support of their neighbors in claiming the land on which they had settled. In fact, the land on which the site was built never passed out of public domain.

In her analysis of the buildings at La Placita, architectural historian Kathleen Corbett calls the houses “hope set in stone” (Corbett 2003). Two elements are striking. One is the care taken in the actual construction, particularly of the Feature 1 complex. That the walls still stand at full height over a century after abandonment attests to the quality of the masonry. The way the stones making up the walls were carefully placed and pieced together bespeaks skilled craftsmanship. It also suggests that those who constructed these buildings did not conceptualize themselves as “squatters” despite the fact that they did not legally own the land. They were building with an expectation of permanence and through their architecture claiming this place as their own.

### **Temporary Occupations**

There is no easy way to search for sites that represent temporary occupations in the state database. It is likely that a number of the sites classified as *camps* have the sort of formal planning that would mean they should be considered under this category. Nonetheless, one very important site in Colorado falls under this criteria, the Ludlow Tent Colony, also known as the Ludlow Massacre site (5LA1829). Through a prolific research and public outreach program, Ludlow is probably the Colorado site best known in the national and international community of historical archaeologists. This site was the subject of survey, testing, and excavation from 1997 to 2002, although analysis of the remains recovered from the site is ongoing. The work there, and at nearby Berwind (5LA2175), was performed by the Colorado Coalfield War Archaeology Project, a joint venture of the University of Denver, Fort Lewis College, and the State University of New York (SUNY) Binghamton. A current bibliography of research and publications about the project is available on the project’s website: <http://www.du.edu/anthro/ludlow/>.

The coal miners of southeastern Colorado were primarily employees of Colorado Fuel & Iron, and lived in company towns. In 1913, in preparation for a planned strike, the United Mine Worker’s Union set up several tent colonies in anticipation that owners would remove striking workers from their homes. This indeed was the case and for 14 months, from September 1913 until December 1914, the Ludlow Tent Colony was one of the area’s largest. At its height, the site housed about 1,200 miners and their families, the vast majority of whom were either first or second generation immigrants from Eastern Europe, Hispanics, or African-Americans (Gray 2005). How these “in-between people” created a temporary community has been an overriding research question for investigators. To address this question, focus has been on the remains resulting from one fatal day at this camp, April 20, 1914, when tensions between striking miners and the Colorado National Guard escalated to violence. On that day, an exchange of gunfire led to most residents fleeing the colony. Members of the National Guard, which had been infiltrated by company-hired strike breakers, proceeded to set fire to the tent colony. In the aftermath, the bodies of a group of women and children, who had taken shelter in one of the cellars dug below many of the tents, were discovered. This event, which became known as the Ludlow Massacre, galvanized people on both sides of the struggle for workers’ rights in the United States. It also created an archaeological site that preserves an unprecedented window into the lives of a critical group of often- misunderstood Coloradans.

To date, researchers, using a combination of photographic overlay, surface artifact mapping, remote sensing (ground penetrating radar, proton procession magnetometer, metal detector), and auger testing, have identified a number of features at the site, including five tent footprints, seven tent cellars, and several trash dumps. It is clear that residents of this temporary community created a spatial plan for the settlement, which



included streets and established trash dumping areas (Larkin et al. 2003). Ongoing research involves multiscalar analysis, from features that represent single households, to those that are the result of the entire community, such as middens. Work has also been comparative, with analysis not just of the tent colony, but also research in nearby coal towns that were occupied both before and after the strike. Stratigraphic and refit analysis of one tent cellar, Feature 73, indicates the feature contains the intact remains of one household. Intensive study of the ceramics from this household suggests that one way community was created and reinforced in the tent colony was through the serving of meals communally, rather than in the individual portions promoted by Americanizers (Gray 2005). Continuing research by graduate students ensures more will be known about the archaeology of this temporary community.

## **Elements of a Formal Settlement or Rural District**

### **Portions of a Rural District**

To search for elements of a rural district in the site database is difficult because there are so many possibilities. A search under sites that have settlement as a theme includes a number of mining sites, many of which are likely parts of historic mining districts. The decision of whether to classify a resource as part of a rural district depends on the location of the site and its relationship to other elements of a district. One such site, which is a definable locale but which is best understood as part of the larger mining district, is Little Rome (5HA593).

Little Rome is associated with the mining settlement of Henson, in the vicinity of Lake City. Henson sprouted near the Ute-Ulay and Hidden Treasure mines, whereas Little Rome grew near Henson. The site consists of a series of collapsed structural remains and trash scatters. According to some historic sources and local lore, Little Rome was a self-segregated Italian neighborhood associated with the town of Henson. In March 1899, the Ute-Ulay owners demanded that the residents of Little Rome and Henson board at the company boardinghouse. The Italian immigrants, all of whom belonged to the Western Federation of Miners, objected to the policy, and the WFM called a strike. Armed workers blocked the entrance to the mines and mill. The National Guard was called in to end the strike, and the Italian workers were reportedly deported.

In 2000, the site was excavated by students from the University of Nevada, Reno (Ringhoff 2002a). This site highlights the need for interpretation when searching for sites by type. Little Rome is classified in the OAHP database as a mining camp. It shares with a camp the fact that it was occupied only temporarily. However, the site's temporary nature was due to the influence of outside forces, namely a strike and suppression, and not the intent of its occupants. Thus it is here classified as an element of a mining district rather than a camp because its existence and form was contingent on patterns within the district as a whole and because its occupants did not create a temporary occupation but rather a more permanent residential locale.

Close analysis of both the archaeological and archival data seems to indicate that Little Rome was probably not home to just Italian immigrants, but other residents, as well. A handful of items were recovered that were imported from Italy, including several Fratelli Branca bitters bottles manufactured in Milan and an olive oil jar. As the investigators note, the use of such items in the United States was by no means restricted to Italians. In addition, landscape features often present on Italians' sites, such as Italian bread ovens and bocce courts, were not found on the site. The evidence that this was an exclusively Italian community is inconclusive. The chronology of artifacts and documentary evidence also call this assumption into question. If Little Rome had been occupied solely by Italians, then the site would have been abandoned in 1899, but it was occupied up until 1910. Indeed, documentary evidence suggests that Irish workers also lived in the area. Contrary to general knowledge, such evidence also suggests that many Italian miners remained in the area after the time of the deportation of others.

One of the most interesting results of the excavation was the recovery of a wide range of recycled or modified artifacts. Many of the modified artifacts were tin cans of various sizes that had their ends removed and were flattened to use for architectural patching, and possibly even roofing or siding. Other tin cans were

modified for use as flowerpots or what investigators call *shadowgees*, handmade hanging candle lanterns with holes punched in them to cast patterned light (Ringhoff 2002a:110). In one case, a dynamite box was nailed to the side of a tree, probably for use as shelving. The investigators interpret such visible modification of items as reflecting a socially homogenous community where working-class status was the norm and was openly displayed. The residents of Little Rome were unconcerned with Victorian norms for the proper household. This kind of disregard gets noticed by officials and can lead to the sorts of ethnic and class flare-ups evident in the strike of 1899.

The investigators interpret the archaeological and historical evidence to suggest that although 5HN593 was a social community in its own right, it was essentially a satellite of Henson. There was no commercial activity beyond blacksmithing evident in the material remains of the site. It was largely a residential community reliant on the infrastructure both of Henson and the mining companies themselves. They also suggest that the name “Little Rome” should be taken with a grain of salt. In fact, throughout the document they use the name in quotes, as I have above. Archival research indicates the term actually appears in only one document, a letter from a Pinkerton detective who was called in as a strikebreaker. Investigators suggest that if “Little Rome” had been a common name for the community and, indeed, if Italians were strictly spatially segregated in it, there would be more documentary, as well as archaeological, evidence of it.

### **Portions of Urban Settlements**

Again, elements of urban settlements are difficult to search for in the state site database. Certainly neighborhoods, central business districts, and parks would fall under this category. The national and state registers make it possible to record historic districts. Although many urban historic districts have been recorded, only six of them in Colorado have been considered in terms of their potential for historical archaeology. Four of these are in Denver, including both City and Washington parks, the West Wazee Warehouse District (5DV1005), and Globeville (5DV1691), a mixed residential and industrial district discussed in the beginning of the chapter. The other two districts in the historical archaeology database are downtown Golden (5JF418) and the commercial core of Aspen (5PT113). None of these districts has been tested or excavated. However, as part of the Broadway Viaduct Replacement project, SWCA, Inc., recorded historic sites in the Broadway area, another mixed-use neighborhood in Denver (Wood et al. 1999). Although a number of sites were recorded and tested during the project, only one, 5DV5997, was excavated. However, like Donna Seifert’s research in Washington, D.C. (1994), the work at 5DV5997 highlights how the archaeology of one urban household, when properly contextualized, can contribute to understanding the way of life of an entire neighborhood.

The neighborhood, centered on 24th and Larimer, was what some geographers would call a workers’ cottage district (Groth and Gutman 1997). Situated between lower downtown and growing suburbs such as Curtis Park, it was an ideal place for workers to live. Men could walk to nearby rail yards, factories, shops, and processing plants, whereas women could ride the streetcar into suburbs to work as domestics. The 1887 Sanborn maps show that the area was largely domestic at that time. Like Oakland, California, where the worker’s cottage district has been extensively studied (Groth and Gutman 1997; Praetzellis and Praetzellis 2004), most of the domestic structures were small, stand-alone houses on small lots. They were mostly single-story wood frame structures with residents who used privies. The 1890 Sanborn map indicates that residential structures remained the neighborhood’s majority, but commercial structures were also present and were joined by new industry, including a laundry, a carpentry shop, and a wall paper factory.

City directories and census data indicate that, like workers’ cottage districts all over the United States, this was an incredibly ethnically and racially mixed neighborhood. The area had a significant African-American population, along with Chinese and Irish immigrants and largely poor, native-born Americans. What residents of the area shared was their working-class status. City directories indicate that many of the workers were involved in manual labor as laundresses, coach cleaners, plumbers, cooks, janitors, seamstresses, and general laborers.

In the 1920s, the residential aspect of the neighborhood was largely destroyed by the extension of Broadway through it. This act increased the spatial segregation of workers from the city, especially black workers who by and large moved north into Five Points. The use of roads to create barriers between ethnic/racial communities has been well documented in other cities, as well (c.f. Davis 1992). When Broadway was built, buildings along its path were torn down. Some were destroyed, but others just filled in. A number of intact features were discovered during the testing phase of the project, although the project was modified so most were not disturbed. Site 5DV5997, however, could not be avoided by the project and so was fully excavated. Discovered below a parking lot, 5DV5997 had an intact brick basement and some exterior yard features, including a privy.

Maps indicate the site once held a small frame house with a porch facing 25th Street. The first recorded resident of the site was Mrs. Carrie Frazier, an African-American woman who may have been a widow because she had no occupation listed in the 1893 Denver city directory where she first was noted. By 1900, another African-American family had moved into the house. Henry Nelson was a hod carrier, who, as someone who supported bricks for masons, was one of the people who literally built the city. His wife, Lulu, worked at home. It is likely that she took in laundry, as the excavations revealed an abundance of many different kinds of buttons in the yard. Like many families at the turn of the century, the Nelsons had boarders. The Nelson boarders were Edmund Scott, a musician, and Darry Ruth, a student, both African-American.

This household was thus made up of a variety of people with a range of incomes and goals for the future. That they participated in social display may be indicated by the presence of very fragmentary parian figurines. Such figurines, made of unglazed porcelain, were decorative pieces sold to embellish Victorian-era parlors. Although often designed to evoke a romanticized, Western European past, parian figurines are surprisingly common in African-American households (Mullins 2004; Wilkie 2003). As Paul Mullins (2004) has suggested, for African-Americans, such bric-a-brac suggests a desire to secure some share of American affluence often denied to them because of racism. Another way that the household's concern for social presentation is made clear is through recovered items designed to improve appearance, including hair combs, a nail buffer, costume jewelry, and perfume.

One of the most interesting results of the excavation was the evidence it presented about electricity. An electrical insulator and portions of a light bulb make it clear the house was wired for electricity. But also recovered were a wealth of items related to coal oil lamps. It appears that the residents of the house used electric lighting only sporadically or maybe only in certain parts of house. It was quite common for houses of the era to only have one or two rooms wired for electricity, especially when they were originally built without it. Electrical companies, trying to gain acceptance of the technology, often would perform initial installation of wiring in only a few rooms of a house (Jonathan Horn, personal communication 2005). In this case expansion of wiring to other rooms may have been beyond the economic abilities of the residents. That only one or two rooms may have been wired for electricity was suggested by the original researchers, although they also contextualized the remains by using information about the history of utilities in Denver (Convery 1999). Electric rates fluctuated wildly in Denver from rival companies' early incursions in 1885 well into the twentieth century. At times power companies almost gave electricity away, thus encouraging households to make the upgrade to electric power, while at other times the companies were price gouging. The original researchers (Wood et al. 1999) suggested that the residents of 5DV5997 may have been taking control of their electricity use by choosing when to use it for lighting, perhaps cutting back during times when prices were high or household wages low.

### **Rural and Semirural Urban Satellites**

A number of rural and semirural sites in the vicinity of urban settlements contribute to our knowledge of the sphere of urban life. Suburbs are a type of semirural settlement features that owe their existence to a larger urban setting. No suburbs were recovered through an all-fields search of all historic archaeological sites and districts that have urbanization or settlement as themes. It is likely a number of historic archaeological or architectural sites are situated within suburbs, but because suburbanization is not a coded theme, they will need to be identified case by case. A least one historic district has been recorded that

represents a particular Denver suburb and that is Arapaho Acres (5AH1434). No archaeological evaluation has been made of the district, which was built between 1949 and 1957, but it is listed on the National Register, in part because of its relationship to community planning and the social history of suburbanization.

Truck farms, often more rural satellites of urban areas, are small agricultural ventures, often 5- to 10-acre parcels on which fresh produce, eggs, and dairy items were produced for urban markets. Key to their success is proximity and transportation to large markets. There is no easy way to search for such sites, but they are, no doubt, included in the agricultural properties discussed in Chapter 6. Certainly many of the farms at the Rocky Mountain Arsenal discussed in that chapter were truck farms.

Research at the Rocky Mountain Arsenal highlights the related nature of many urban satellites (Clark 1997b). This 20,000 acre area about 10 miles northeast of Denver was near several small settlements, including Irondale and Derby. These small towns began as stops on the Burlington Northern Railroad and were platted into city lots. However, the most successful subdivisions within the area were those divided into 5- or 10-acre lots. These truck farms were linked to the Denver markets, particularly as suppliers of fresh eggs (77 percent of the farms had facilities for raising chickens). As Denver grew, these farms themselves became a type of suburb. As one resident of the area recalled, many of the men living on these farms actually commuted to jobs in Denver, while the women ran the farms (Clark 1997b). Certainly the cycling of land from agricultural to suburban to urban is a process we expect to see throughout the history of Colorado.

Colorado's urban spaces are appealing to many residents and visitors in part because of the opportunities they provide for outdoor recreation both within and outside of city boundaries. The Denver Mountain Parks system is a well-known example of city planners setting aside rural land specifically for the use of urbanites. Less well-known, but illustrative of the general process, is the Squirrel Creek Recreation Unit (5PE5346/5CR492), located 26 miles southwest of Pueblo in the Wet Mountains (Segin et al. 2004). Built just within the boundaries of the San Isabel National Forest, the road, picnic areas, campsites, lodge, and hiking trail that make up the site were built as a cooperative venture between the Forest Service and the San Isabel Public Recreation Association (SIPRA), beginning in 1919. SIPRA's largest contributor was Colorado Fuel & Iron, which employed more than 30,000 workers in the region in 1915. Outdoor public recreation was seen by progressive reformers as a way to release many of the social pressures built up in mines, factories, and overcrowded housing. Particularly with the advent of cheaper automobiles following World War I, national forests near urban areas were increasingly being pressed into recreational service by campers and picnickers. Designed by a landscape architect using principles of urban planning and zoning, Squirrel Creek pioneered the kind of Forest Service improvements that would become almost standard during the New Deal. Destroyed by a flash flood in 1947, the site contains numerous buried features and has been listed on the NRHP under all four criteria, including *A* for its contribution to the history of community planning and development, and *D* for its information potential. Although yet unstudied, the archaeological resources of the site have the potential to reveal the ways city dwellers learned to play in the mountains.

## **Formal Settlements**

### **Towns**

Towns are actually quite well-represented in the state database of historical archaeological sites. If one searches for the word *town* under site type, original use, archaeological type, and feature, 235 sites are identified. A number of these sites likely would not qualify under the criteria set out for a formal, platted town but might be better considered more informal settlements. Still, it appears that this kind of settlement site type has been both recognized and recorded. Many, although certainly not all, of these sites are short-term townsites that were related to mining. As suggested in the discussion of archaeological criteria, it is useful to consider whether a townsite represents a voluntary town, a company town, or a utopian community. As at least one of each of these has been investigated archaeologically in Colorado, examples of each type of town are presented below.

Old Las Animas City (5BN176) is a good example of a voluntary town on the Plains of Colorado. The site was investigated by Mariah Associates, Inc, under the direction of the Army Corp of Engineers (Earles et al. 1987). The town was occupied for 18 years, between 1869 and 1887. It largely served the needs of the surrounding populace, particularly the residents of nearby Fort Lyon (occupied 1867-1889). The town was bypassed in 1873 by the Santa Fe Railroad, which platted its own rival town, West Las Animas, five miles distant. Without a railhead, the town began its gradual decline, its fate sealed by the closing of Fort Lyon in 1889.

Much of the townsite was destroyed in the early 1940s when a railroad grade through the town was raised to accommodate John Martin Reservoir. The portion investigated in 1987 was virtually undisturbed and represented the northeast corner of the town. The remaining portion of the site was surveyed, surface collected, and then subjected to excavation. Only 5,000 of the over 12,000 recovered artifacts were analyzed (a situation a future researcher should rectify). Analyzed artifacts included personal items such as jewelry and clothing remains, architectural elements, and food preparation and food storage items such as barrel hoops, tin cans, and ceramics. As befits an early western town, the most common single artifact type was bottle glass fragments.

One of the goals of archaeological investigations at the site was to see how architecture changed in the town. Particularly in Area A, part of the commercial area, it seems that structures were largely initially adobe and log, but additions were made in frame. Area B, within what was Block 86, was more residential, with a greater number of food remains, tin cans, and other evidence of subsistence. The architecture in that area consisted of circular depressions and marginal stone alignments, which researchers interpreted as evidence that much of the architecture was jacal. Jonathan Horn (personal communication 2005) has suggested that jacal structures rarely have stone foundations and the superstructure in this area may have been lightly framed wood buildings. However, the interpretation of these features as an unusual type of jacal structures, a kind of architecture often found in Hispanic sites, may be supported by the fact that this area, as well as Area C, also contained stone tools and flaked glass, two other indicators of Hispanic occupation (see Chapter 5, Ethnicity).

Old Las Animas City was an early townsite in the region, predating the arrival of the railroad in the area by four years. Although the railroad did come near, it was another two years before the town obtained rail service. Researchers suggest that as such it contains unusual potential for learning about early towns in the West, specifically in regard to ethnic and racial relations and the nature of early business. An interesting conundrum is that in the town's 1880 census only 3 percent of the population appears to be Hispanic. In fact there were more African-Americans enumerated on the census, making up 9 percent of the population. This discrepancy may be related to the high number of buffalo soldiers who were stationed at Fort Lyon. It also seems that the town's Hispanic population was quite mobile. Like the well-researched Damacio Lopez family (Minette Church, personal communication 2005), other Hispanics may have lived in the town between census enumerations. Based on census data, transplanted Europeans were the largest ethnic groups in the town: the Irish made up 18 percent of the adult population and were joined by two residents from Germany and one from France. Only 103 people are enumerated in the census of 1880, a decline by 47 people in a period of five years. The ethnic and racial makeup of the town, as indicated in historic documents along with the material suggestions of Hispanic builders, indicates that this is a town that could, with further investigation, yield very interesting information about how Coloradans of many stripes got along both before and after their linkage to national transportation networks.

There were many company towns in Colorado. They are the products of more centralized control than in a typical town and therefore can tell us something about how people negotiate life in settlements where their behavior was more restricted. As part of the previously discussed Colorado Coalfield War project, Berwind (5LA2175) was subjected to survey and archaeological investigation. Berwind was constructed by CF&I in 1892 as a community for coal miners and their families. Like Ludlow, some of the features investigated, especially privies, represented individual households. Unlike Ludlow, the trash dumps were not community wide but appear to be linked to specific neighborhoods.

Berwind was not a town where people chose to live, but rather their employment was contingent on their residency in it. As such, the conditions of the town were under direct control of the company. An important contributing factor to labor unrest in the southern Colorado coalfields was the strictures and living conditions in the company towns. One of the seven demands of the striking workers included “the right to trade in any store” and “to choose their own boarding places” (Walker 2003). A primary research goal of the project was to investigate daily life in Berwind both before and after the strike in order to assess the effect of the strike and the Ludlow massacre on life in the town.

The prestrike locus investigated at Berwind was occupied between 1900 and 1918 and consisted of 13 domestic structures identified through photographic and documentary evidence. Six of the structures were duplexes, and seven were single-family houses. One hundred and thirty-six people lived in this area of Berwind in 19 households. No households were excavated in this area, although a midden and a privy were excavated. On average, these households contained 6.8 people, in contrast with the community average of 4.9.

Approximately one-half of the residents of this neighborhood were Italian, followed by Eastern Europeans, Greeks, Japanese, and Mexicans. As researcher Margaret Wood writes, “A close examination of this neighborhood suggests even more strongly that the company was intentionally attempting to spread ethnic groups across the landscape” (2002a:157). Sixty-eight percent of households had no neighbors of the same ethnicity, and all duplexes contained families from different ethnic groups.

The households in this neighborhood often included one or more boarders, a condition that often led to crowded living conditions. The neighborhood had an average of three residents per room, which almost doubles the 1.8 per room average for coal towns calculated by the U.S. Immigration Department. The Immigration Department considered three people per room “overcrowding.” The crowded nature of boarding households clearly contradicted the middle-class tendency toward specialized rooms in the household and the accompanying emphasis on privacy (Wood 2002a). Perhaps to combat the tension from sharing such close quarters, most boarders (81 percent) shared ethnicity with the wife of the family with whom they lived.

The form of the poststrike locus, occupied from 1918 to 1930, was heavily influenced by the Industrial Representation Plan, a set of agreements by CF&I that were a response to many of the striker’s complaints. In particular, plans were made to improve coal town living conditions due to the publicity and scrutiny following the Ludlow Massacre. By 1921, the company had replaced the vernacular houses, many of which had been built by workers, with a set of standardized homes built by and, therefore, controlled by the company. The vernacular homes had varying floor plans and were often built in jumbled groups along natural contours, while company homes had standard floor plans and were built on flattened ground in neat rows. This new type of construction, which conformed to company regulations, was designed to foster “a sense of orderliness, efficiency, equality, and individuality” (Wood 2002a:291). That individuality desired would have been within a more private home, as living in cookie-cutter houses would seem to downplay the individuality of different households themselves.

The company promoted the nuclear family as a strategy to instill Americanizing influences and capitalistic values in their workers. Again, as with the prestrike locus, the company mixed up families of differing ethnicities on the land in order to avert group organization. The company’s goal was to emphasize the individual and divide workers, hoping to prevent future strikes. Every house in the coal camps was soon fenced, because “defining yards through the use of fences were supposed to promote care for the houses, instill pride, and encourage residents to grow gardens” (Wood 2002a:295).

Another trend promoted by the company in order to emphasize the nuclear family was the privatization of the home. In 1910, 44 percent of households at Berwind had boarders, and only 25 percent consisted of nuclear families. In 1920, on the other hand, 6 percent took in boarders, and 60 percent were nuclear families. The standard four-room company house promoted privacy, while its arrangement made it more difficult to house boarders. The rearrangement of the Berwind household had several effects: families

now depended on one wage earner, wives' authority in the home decreased, and the husband became the representative of the family to the outside world.

This change is reflected in the food remains recovered at the site. In the prestrike era, tin cans predominated many of the household and neighborhood trash dumps. After the strike, the number of tin cans dropped and evidence of home canning rose dramatically. This change suggests that after the strike women actually had less disposable income than before. This decrease is likely due to the loss of boarders, who provided important income to many households. As is often the case at historic sites, the archaeology suggests that new technologies and social strategies may change women's domestic labor, but rarely do they reduce it. At Berwind, women who once took care of boarders now spent more time trying to preserve household income through home canning (Wood 2002a).

As outlined in the introduction, Colorado was home to a number of utopian communities. Very few of these have been investigated archaeologically. One at which at least preliminary work has been performed is Dearfield (5WL744), which is a National Register Historic District. An agricultural colony on the eastern Plains of Colorado, Dearfield is a singular resource as it was an entirely African-American settlement. Founded in 1910 by Colorado entrepreneur, Oliver Toussaint Jackson, to help promote African-American self-sufficiency and land ownership, the settlement was occupied through 1947. Based on written documentation and a study of historic land ownership, the archaeology performed at the site was oriented to the location of known and potential historical archaeological features (Noisat 2003). The goal of archaeological research was to begin identifying features associated with standing structures (such as the O.T. Jackson residence), as well as to locate other features within the settlement, including various activity areas. The research on land ownership guided the work at the site, because units were confined to areas of the colony that had in fact been purchased, rather than merely platted. The excavated units in the vicinity of the O.T. Jackson residence suggest that, despite renovation of the structure, the archaeological remains in surrounding areas remain relatively intact. These units and a few others on the site suggest that where archaeological deposits are present, they are in a discrete horizon. Thus, despite the site's setting on the eastern Plains, archaeological remains are seemingly unaffected by erosional activity, particularly that associated with the Dust Bowl.

Very few of the 50 excavated test units actually yielded remains. The investigator suggests a number of reasons for this lack of data. First, remaining standing structures suggest the town plat may be off by as much as 30 feet. Particularly because lot lines strongly influence the placement of features (especially archaeologically important ones like privies and trash pits), accurate reconstruction of property boundaries can be vitally important for the archaeology of formal towns. Although investigators attempted to compensate for known problems in lot locations, it may be that the calculations were still not appropriate. A second reason for the negative results may be that although lots were sold, they were never actually occupied. Although this may be true in individual cases, in general it contradicts historic records that suggest, for example, that in 1920 about 700 people lived in Dearfield. The investigator suggests that these two hypotheses, a) that test units merely missed the remains present and b) that Dearfield was not as extensive a settlement as previously suggested, be tested with additional research. Certainly what remains were found suggest the archaeology at the settlement has high integrity. This site is a strong candidate for remote sensing (ground penetrating radar, magnetometer, etc.) given both the importance of its remains and their seeming illusiveness.

### **Military Installations**

The range and number of military sites in Colorado are overviewed in the Government chapter (Chapter 10). It is important to note that many of these installations include quite substantial settlements. For example, archaeological work at Fort Garland (5CT46), built in 1858 and occupied through the 1880s, indicates the particular blend of stereotypically soldier-related items (regimental buttons, ammunition casings) and domestic items (a daguerreotype frame, porcelain doll pieces) found on such sites (Bond 1992). Invariably archaeology at military occupations demonstrates surprising activities pursued by a broad range of occupants (Voss 2002). At Fort Garland, that includes those who played with dolls.

In the wake of the bombing of Pearl Harbor, President Franklin D. Roosevelt signed Executive Order 9066, giving the Secretary of War the authority to exclude anyone in the United States from any area of the country without a trial. This order established the military authority upon which Japanese and Japanese-Americans were forcibly removed from the West Coast and placed into internment camps. Ten of these Japanese internment camps were established in the interior western states, including Colorado's Granada Relocation Center, better known as Camp Amache (5PW48). An instant settlement, Amache was occupied from 1942 to 1945, and throughout its years of occupation over 10,000 Japanese and Japanese-Americans lived, at least for a time, at the site. In 2006, Camp Amache was declared a National Historic Landmark. In some ways the camp differs from other military sites in Colorado, given that the majority of the administrators and other employees at the camp were civilians. Still, these employees and the internees themselves were under the ultimate authority of the U.S. Army, Western Defense Command. The perimeter of barbed wire fences and guard towers was manned by military police, a material reflection of the fact that this facility owed its existence to war.

Preliminary work at Camp Amache (Carrillo, Killam et al. 2004) indicates that, although among the smallest of the internment camps, the site may be one of the best preserved. The aboveground structures, which consisted of hastily constructed barracks, have since been destroyed or moved (although several of the barracks are well preserved and relocated in adjacent communities). Despite this, the cultural landscape is very legible, marked by foundation remains, road alignments, and the cemetery. Perhaps most important for this document, the archaeological record of the site is remarkably intact. Large trash dumps are situated on the edges of the site, and other historic artifacts are scattered throughout the blocks that once housed the barracks. Piles of coal and coal clinkers speak to the difficulty internees had staying warm through the Colorado winters, because they came from California, largely without warm clothing, and lived in drafty barracks. Some of the most impressive elements of the site are garden and landscaping features built by the internees, including a number of ponds and terraces. These features draw from Japanese aesthetic traditions but use available materials such as concrete and local stone. Some of the most thought provoking material traces at Amache are the numerous inscriptions in concrete made by internees.

The artifacts at Camp Amache are a record of the daily life of the internees, and they reflect both the influence of the military but also an active maintenance of more traditional lifeways. For example, a number of the ceramics bear the maker's mark of the army's U.S. Quartermaster General potteries. Yet among those items are pieces of Japanese porcelain in traditional forms, such as rice bowls and tea cups decorated with traditional patterns and techniques. Other items originally imported from Japan include bottles of sake (rice wine), evidenced by unambiguous maker's marks indicating content and sometimes a Japanese origin for the bottles (Slaughter 2006). Interestingly, alcohol consumption by internees (but not government employees) was banned at all camps. Clearly, some internees were skirting this regulation at Amache. The sake bottles (and other evidence of sake drinking such as fragments of sake decanters) from Amache stand in contrast to the remains recovered at Manzanar, a California internment camp, where extensive excavations have failed to reveal evidence of alcohol consumption (Burton 1996). Other items at Amache that are evocative of Japanese practices include the remains of a *geta*, a traditional wooden sandal. Artifacts also speak to the ingenuity of the internees. For example, a whole series of tin cans were found with their bottoms and sometimes sides punched with holes of various sizes. It is likely some of the smaller of these were pressed into service as tea strainers, items that would have been hard to procure in Colorado but necessary tools for making tea. Tea drinking was an important ritual of daily life for many Japanese families.

## Cities

Although a number of researchers suggest that we see the city as an artifact (Upton 1992), to actually do so takes either a big project or a big imagination. If we are looking for the scale of the city itself, no such sites exist within the OAHHP database. However, as suggested in the previous discussion of 5DV5997, even a single site can be approached with citywide scale questions. (Many examples of this kind of work can be found in *Unearthing Gotham: The Archaeology of New York City* [Cantwell and Wall 2001]). Identifying sites in the database that have the potential to tell us about cities was a two-step process. First, a search of the historic and current census identified Colorado's changing urban areas (refer back to Table 6, Table 7, and



Table 8, above). Then a search for all historical archaeology sites recorded within those urban areas revealed a total of 252 sites. Certainly, this number is very low compared to the number of sites recorded in those same urban areas without concern for the historic archaeological remains possibly associated with them.

Of those 252 sites identified in urban areas, one of the most studied is El Pueblo (5PE303). It is a great example of urban archaeology for several reasons. First, Pueblo, like Denver, has consistently been identified in the census as an urban area since 1900. During its time of occupation, Pueblo grew from an informal settlement in Mexican territory to a major urban area. Those changes can be tracked in the remains recovered at El Pueblo, as summarized by Bill Buckles (1998).

El Pueblo, although often considered a trading post, is perhaps best thought of as an informal settlement. Occupation of the site, which was built on the banks of the Arkansas River, began around 1842, prior to the Mexican-American War. As befitting a borderlands settlement, the occupants were a multiethnic blend of Hispanics, *Americanos*, and European-born trappers. It has been noted, however, that it may have been predominantly a Hispanic settlement because when the site was attacked by Utes in 1854, all of the people who died had Spanish surnames (Buckles 1998). Because many Indians of the region adopted Spanish surnames (Weber 1992), data on names must be contextualized with the material remains and other historic documents. Although the site was abandoned after the 1854 attacks, it was reoccupied as early as 1858, and portions of the site were reused until 1893, decades after the town of Pueblo was first platted in 1860.

Cities are an ever-changing artifact. Structures get built, occupied, recycled, abandoned, and sometimes torn down. Streets, too, come into being and then are supplanted, or they exist only on paper. In order to orient oneself within this city fabric, researchers need to work not just with early maps, but also with recent maps to orient themselves in space. In the search for El Pueblo, maps were critical, but these data were supplemented with photographic evidence, as well as oral histories about the location of the El Pueblo ruins.

The sleuthing for El Pueblo led to excavations in an area hypothesized to be the location of the old settlement. Despite the sometimes purposeful destruction of the original structures and intrusion of later buildings, researchers have so far identified more than 10 wall segments that date to the original settlement, including both adobe and jacal architecture. Because this has been largely a preservation, rather than a cultural resources management project, researchers have focused on the identification of features rather than achieving their full excavation (Buckles 1998). As part of the work, tens of thousands of artifacts have been recovered, many of them from later occupations of the site. Still, researchers have identified more than 3,000 artifacts that stratigraphically and temporally fit the profile for the El Pueblo. These include early ammunition, hundreds of chipped-stone and glass tools, quite a few glass beads and other trade items, forged nails, and handmade pottery, some of which appears to have been made on site. The pottery supports El Pueblo's trade networks as some vessels were from the historic Pueblos of Taos and Picuris whereas some appear to be Jicarilla Apache.

The remains of El Pueblo, a glimpse into the Mexican and early American period settlement of the Front Range, have proven compelling for the public and are now the heart of a new historic museum. Still, much of what has been recovered through this project relates not to El Pueblo but to the city that grew up around it. These remains are interesting, as well, because they speak to the processes of urbanization. Archaeological research in the area of the new museum location confirmed that many portions of El Pueblo are entirely gone, probably as a result of an 1894 flood of the Arkansas River. The dangers of locating a city next to a river are equally demonstrated in the previously discussed work at the Tremont House in Denver.

In 2002, nine and one half 1 sq m units were excavated in the area of the new museum. No El Pueblo remains were discovered, but researchers did recover artifacts associated with two businesses related to travel: a livery stable used in 1904 and a blacksmith shop (Buckles 2002). These deposits were marked by oxen shoes, horseshoes, and related artifacts. This type of clustering (blacksmith shops near livery stables) was common prior to the widespread popularity of automobiles. These remains speak to the continuity and evolution of travel-related sites in this location, from the founding of El Pueblo in 1842 to the turn of the

twentieth century. Such convergence points to interesting patterns of behavior related to transportation corridors, one also found in Denver (Nelson et al. 2001). Early trails follow waterways and establish patterns of circulation. These trails often lead to the development of roads, then railroads, followed by highways.

### **Sites Contributed to by Entire Settlements**

Another way to address the city-scale is through sites that are contributed to by entire settlements, particularly dumps and cemeteries.

**DUMPS.** Dumps are often associated with historic sites of all kinds. A search in the historical archaeology database for *dump* under site type, original use, or archaeological feature recovered 235 sites. Many of these are likely associated with either a single household or with casual trash disposal, for example, at a travel crossroads. Other dump sites, however, are associated with either a particular settlement or a neighborhood. One example is the Boulder City Dump (5BL8820), which is preserved, apparently relatively intact, under the sod of a city park (Gleichman 2001). During the construction of a path through the park, several complete bottles were recovered, and an extensive deposit is suggested by glass and ceramics visible along a path. Although this site has not been tested yet, one of the reasons it has been recommended as eligible is the tight time frame of its use. In 1895 the city bought this land to establish a dump and a sewage settling basin but closed both in 1933. Protected as it is by turf, the dump has high potential to tell us about life in Boulder from the turn of the last century into the Depression.

The URS report detailing excavations at the historic Mill Street Dump (5EP3946) in Colorado Springs is a great example of the type of research into settlements that can be performed at dump sites. The early city administrators for Colorado Springs, which catered in part to health-seekers, were very concerned about sanitation. The first reference investigators found to an official city dump is dated 1890. The site was located outside of the city limits in an attempt to reduce the danger to public health posed by trash. The investigators were very thorough in their documentary search, finding a treasure trove of information in the annual reports of the Department of Public Health and Sanitation of Colorado Springs. These reports include various strategies used to fight tuberculosis, which the department called a “crime of municipal neglect.” In 1906, the city’s stated goal was to be the cleanest city on earth, although the problem of collecting and disposing of garbage remained in 1909 as “the City’s most difficult problem to solve.” Illegal dumping remained a problem throughout the early 1900s, despite the city’s efforts to curtail it.

One of those unofficial city dumps was where Mill Street ended at Fountain Creek. As evidenced by city directories, this was largely a working-class neighborhood, established around the turn of the century. The research design for work at the site included questions of chronology and changes through time, the socioeconomic status and type of dump users, and issues of seasonal or year-round use (Tucker et al. 2001). Temporally diagnostic artifacts indicate that the main period of use was between 1885 and 1917, with an increase in dumping in the early 1900s, just as the neighborhood was being established. Later artifacts were also recovered, dating between 1920 and 1964, but these appear to be related to the demolition of residences along a neighboring street. Using minimum vessel analysis, the investigators found that over 50 percent of the ceramics from the dump had at least minimal decoration, often gilding or other metallic banding. The users of the dump were certainly not well-to-do, but they did seem to prefer tableware that was not the cheapest available.

Illegal dumping by commercial and industrial users is often a problem for cities. The artifacts from the Mill Street Dump, however, seem to be largely domestic in origin, a finding consistent with the site’s chronology. For example, the presence of doll heads, marbles, book fragments, rubber balls, and toy tea sets, as well as perfume bottles, washing machine parts, and baby nursing bottles all are strong indicators of domestic origin for the items. The diversity of artifacts suggests that many different households dumped their refuse at the site within a limited time frame. The faunal remains at the site were divided into three categories: domestic food, wild food, and nonfood. Domestic food included sawn beef and pork bones, as well as chicken bones and eggshells. The wild remains included turkey (which could be either wild or domestic), both cottontail and jackrabbit, and possibly elk. The only floral evidence found was 20 peach pits.

This evidence was interpreted as representing year-round use of the dump. It also speaks to the relative availability of wild foods during the early days of Colorado Springs.

Based on these excavation results, URS recommended that the site be considered eligible under Criterion D of the NRHP for its potential to contribute to our understanding of Colorado Springs history.

**CEMETERIES.** There are 102 sites in the state historical archaeology database that are coded as *burial* under site type. Some of these are individual burials and as such do not contribute to this theme, but most are graveyards or cemeteries. Additionally, 22 other sites can be found in the architecture database under the *cemetery* site type. Cemeteries have a unique status with regard to the National Register and to archaeological research. Cemeteries are typically not considered for listing on the National Register based on human remains alone but rather must derive significance from graves of important people, distinctive design features, or an association with historic events (National Park Service 1997a). Although excavation of such sites is understandably delicate, aboveground archaeology at such sites, can, however, tell us about shared religious ideals, community values, and aesthetics and can be an important source of demographic data. For example, research at the Ralston Cemetery (5JF2082), suggests it is a good example of pre-urban, frontier life in the Denver area (Nelson et al. 2001). Rather than the standardization and central control exhibited in later cemeteries, like nearby Mount Olivet, the graves at Ralston are scattered around a natural hill. They generally face east, which is typical of Christian cemeteries, but vary as much as 14 degrees in their orientation. In fact many of the graves are marked, not by headstones, but by introduced vegetation, especially irises. This cemetery suggests a community that shared a set of general Christian beliefs but was still organizing itself on a small, and often idiosyncratic, scale.

A more rural counterpoint to Ralston is El Carnero Cemetario, an element of the previously discussed La Capilla de San Juan Bautista (5SH125). The earliest headstones at El Carnero date to 1893, but unlike Ralston, it continued to be used at the time it was recorded (Carrillo and Clark 1995a). The cemetery is a window into the Hispanic community, which it has served for more than a century. Headstones are primarily in Spanish until after World War I, an indication of the connection of the San Luis Valley to the world through its returning veterans. Outside of the cemetery proper is a grouping of graves, mostly children's. It is likely this spatial organization is related to Catholic ideology about the afterlife. Finally, several middens with grave ornaments and food remains are suggestive of the types of commemorations that occur at the site. The original researchers suggested this cemetery be considered a contributing element of this National Register site under both Criterion A and Criterion D.

## **Region**

### **Greater Metropolitan Areas**

If the city artifact is hard to investigate archaeologically, a greater metropolitan (metro) area is even more so. But, like the city scale, the metro-area scale is a conceptual device that can be applied to a range of sites found within an appropriate area. As suggested above, the two metro areas most consistently identified on the census as *metropolitan* are Pueblo and Denver. Projects that take this scale into consideration are twofold. Some are massive transportation-related or urban renewal projects, for example, the "Big Dig" in Boston (Cheek 1998). Others are not a single project but attempts to synthesize a wide number of archaeological projects that have taken place in a metro region. To date the only project in Colorado that addresses archaeology on this scale is one of the latter, synthetic studies. *Denver: An Archaeological History* (Nelson et al. 2001) looks not just at sites within the city itself but at the suburban and rural city satellites. It also considers the changing transportation corridors that supported the region's growth. In this way, it is similar to *Unearthing Gotham*, a synthesis of the archaeology of the greater New York region, including those once-rural areas outside, but irrevocably connected to, the city (Cantwell and Wall 2001). Although both of these books discuss prehistoric remains as well, the focus is on sites of concern to historical archaeologists.

## **Mining Districts**

Like the city or metro area, the mining district scale is a conceptual device that can be applied to a range of sites within an appropriate area. The mining district scale may be easier to implement because mining districts tend to have mapped and unchanging boundaries. Mining districts are made up of a range of site types and features. Many have to do with mining itself, others with provisioning the miners, some with ore processing, and others are linear features that supported work in the district. Directly relating to the theme at hand, such an analytical scale can reveal patterns and particularities of the settlement of mining districts. In general, the households in mining districts often varied considerably, from single-sex, multiple individual households to families to extended families or households that took in unrelated boarders. The structural remains themselves vary in scale and permanence, from tent platforms to prefabricated houses to dugouts to mansions. The settlements within which these household are found also vary widely, from informal settlements of households scattered around a mine and mill to company towns to the district centers with cultural amenities like opera houses.

Like the metro area, projects that work at the scale of the mining district tend to be either very large-scale projects or syntheses of multiple projects. In Colorado, such work is often driven by either renewed mining within a historic district or reclamation or cleanup of former mining lands (Clark 1998a), or both. One such project was the investigations of the Cripple Creek Historic Mining District (5TL2). The work there was a massive undertaking in preparation for new mining operations. The research involved investigation of about 20 percent of the mining district. In the course of the work over 9,000 features and over 200 sites were recorded (Sweitz 2004). Synthesis of that work is an ongoing project, but preliminary documents suggest some directions for work at the level of the mining district in Colorado.

The Cripple Creek Mining District comprised a wide variety of settlements. Cripple Creek was the commercial center of the district and was inhabited by mine managers or owners and businessmen. Victor, on the other hand, housed mainly workers, its businesses supplying lower-priced wares. At least two company towns were established in the district, one specifically for nonunion labor. A number of informal or briefly inhabited settlements also existed. These communities developed different identities that were recognized at the time they were inhabited (Sweitz 2005). An example of the kind of comparative work that can be done using the scale of the mining district, Sweitz has compared two different households in the district to address larger issues of lifeways and status (Sweitz 2005). One of the structures was a dugout within Elkton, an informal settlement that grew up around the Elkton and Cresson mines. The other was a prefabricated frame house in Independence, the nonunion labor town. A comparison of the ceramic and faunal data at these sites suggests, somewhat surprisingly, that the residents of the dugout, a family with children, appear to have had access to higher-cost ceramics and better cuts of meat, with an emphasis on family-style dining. The residents of the Independence household, which appears to have been composed of at least one man and one woman, supplemented the meat on their table with hunting. The form of the Independence household ceramics was similar to those at Elkton. They too engaged in the tea ceremony, but their dishes were of an inferior quality. That both households were aspiring to middle-class ideals is suggested by the presence of matched sets of dishes (Sweitz 2005). These data seem to suggest that even if they lived in a more formal town, nonunion laborers occupied a lower economic rung than union laborers living in informal settlements. A larger sample size is necessary to really support or refute this hypothesis.

## **ADEQUACY OF RECORDATION AND EVALUATIONS**

The sites in the database run the gamut between extremely well documented and researched (e.g., El Pueblo and Boggsville), to quickly recorded (the demolished farmsteads at the Rocky Mountain Arsenal), to downright ignored (institutional sites). In general, we must begin to think broadly about historic resources and their archaeological potential. Making sure that the archaeological features associated with historic structures are recorded and evaluated should be a priority through all levels of cultural resources management, from field workers to project investigators and from site managers to granting agencies to regulatory reviewers.

Colorado is lucky to have regulatory bodies committed to the maintenance of the state site database. That database, whether accessed as full files through the OAHP or the distilled information available through Compass, is a valuable resource the depths of which are often not plumbed. For that database to be useful, however, researchers need to be vigilant about providing data that is as accurate as possible. For example, researchers must take care when they classify a site as a camp, making sure to include only ephemeral settlements. They must be careful not to employ this designation if it is merely based on the historic use of the term *mining camp*, a general term for habitation sites that ranged from camps to platted towns.

Compass, although the most accessible of the databases, has some glitches that researchers need to be aware of. In particular, sites cannot simultaneously be in both the historical archaeology and historic architecture databases. Whether any site with both occurs in one location or the other appears largely to be an artifact of who originally recorded it. As such, researchers looking in Compass for a particular site type (such as a formal settlement) would be well advised to look in both of the databases. The full OAHP database is both more flexible and more intensive. As addressed in the previous section, many of the site types or themes applicable to an archaeology of historic settlement are difficult to easily search. However, the database administrators at the OAHP are very knowledgeable and can help researchers design imaginative file searches.

The evaluation of sites after they are recorded is of a more consistent quality. In general, if adequate recording has taken place, thought has been given to the information potential of sites. There is, however, a tendency within the country as a whole to discount the significance of twentieth century sites (Hardesty and Little 2000). Intensive research on such sites in Colorado, such as Ludlow and Camp Amache, shows that archaeologists and managers are making strides toward understanding the importance and potential contribution of such sites. As Hardesty and Little (2000) so cogently argue, the archaeology of the recent past is as vital an exercise as any other archaeological inquiry. But to be meaningful such sites require as much attention to good research design as any prehistoric site. In particular, evaluation of such sites requires “a coherent framework that links historic context, research focus and strategies, and key research questions with the specifics of the archaeological record” (Hardesty and Little 2000:155).

### **Potential for Sites within the Theme to Exist and Be Recognizable**

As indicated above, hundreds, if not thousands, of sites related to the theme of settlements have been recorded in the state of Colorado. A fair number of these have been investigated archaeologically and serve as a good baseline for future research. However, judging from the historic architecture database, it is quite clear that much of the archaeological evidence associated with historic settlement sites has not been recorded or acknowledged. One of our primary goals as a discipline should be the continued education of the cultural resource professionals about the existence and potentials of historical archaeological remains.

### **Interrelatedness of Theme with Other Topics or Themes**

As suggested in the introduction to this chapter, the archaeological manifestation of settlements has very strong linkages to all of the other themes in this context.

### **CONTACT**

Settlements related to the contact period have a very high potential to address the ways that Native Americans were intrinsic to the early nonaboriginal settlement of the state. The work at both El Pueblo and Bent's Old Fort are indicative of the ways that early nonaboriginal settlers were reliant on Colorado's Native Americans for subsistence, technology, and income. They also provide evidence about the creolization of both populations and material culture, an area of research that has received increased attention in the field (Dawdy 2000). Looking at later settlements, such as Boggsville, shows us how Native Americans continue to be influential members of communities in the generations following contact.

## **RURAL AGRICULTURE**

Farming and ranching shaped the settlement of Colorado in undeniably important ways (see the Description and Background section, page 107). Often the habitations of individuals involved in rural agriculture were spread across the Colorado landscape, particularly those involved in ranching. Still, many settlements were ultimately reliant on agriculture, either because they served the surrounding scattered occupations, or they were nodes of the settlement of agriculturalists. As addressed in the Rural Agriculture chapter (Chapter 6), often seemingly isolated farmsteads or ranches were, in fact, loosely knit communities held together by kinship. In looking at rural agricultural occupations, researchers should keep in mind the ways such individuals might have created and maintained communities even though they are spatially dispersed.

## **VICTORIANISM**

Many of Colorado's settlements were begun during the Victorian era, and the aesthetics, ideology, and consumption patterns of the era have strongly shaped what we encounter in the archaeological record of those sites (see Chapter 4). The Victorian ideal was largely accessible only to those with the proper class, racial, or ethnic positioning. As shown with the households of Cripple Creek and "Little Rome," archaeology in settlements of that era has great potential to address the extent to which people were striving to meet or were repudiating those ideals.

## **INDUSTRY**

Like agriculture, the effect of industry on settlement in Colorado is hard to overstate. Mining casts a particularly long shadow, whether in influencing the location and duration of settlements or through creating the markets that made other settlements possible. The industrialization of production in the United States was well underway when Colorado saw its first historic settlements, and its influence was only to grow through the years. The proliferation of trash related to industrial production, be it waste like slag heaps or products found in dumps, attests to how much the historical archaeologists of Colorado are looking at the artifacts of an industrial era.

## **LINEAR**

Settlements and linear features are intimately linked. Settlements grew up where trails came together or where railroads stopped, and they foundered when bypassed. As suggested previously, the history of Old Las Animas City cannot be understood without reference to its relation to transportation lines. Other linear features prove critical to settlements, whether they were the communication lines of telephone and telegraphs or the ditches and pipelines that bring in both irrigation and culinary water. The effect of changing attachments to the outside world represented by linear features is an important research topic in the archaeology of settlements. For example, work at the Tremont House (summarized above) indicated some of the ways life in Denver changed with the arrival of the railroad.

## **RECREATION**

Being a state bisected by the Rocky Mountains, Colorado has long been a destination for tourists. Although initial settlement was mostly spurred by more prosaic concerns, it is likely that many people who came to Colorado to work stayed or returned to play. Settlements such as Colorado Springs were founded largely as recreation locales, whereas many more towns have shifted focus from industry to recreation. The important link between mining and skiing towns, for example, will be one that archaeologists of the future will address as more and more of the material culture of recreation becomes historic.

## **ETHNICITY**

When people come together to live, ethnicity will always be a factor, whether it is a commonality that helps hold the group together or a difference that must be negotiated on a daily basis. Some of the most interesting questions about what happens in settlements have to do with the way ethnicity is played out spatially. Sometimes this process will be active manipulation by the powers that be, as in company towns like Berwind, where the company enforced ethnically mixed neighborhoods or when city authorities engaged in the active segregation of ethnic or racial groups. At other times this will be more a matter of the material expression of ethnicity, as when different ethnic groups spatialize ideals about how to properly organize settlements, something we see in Colorado's plaza towns. The consumption and display of material culture in settlements is also likely to be shaped by racial and ethnic identity, as revealed by the remains of the African-Americans living at 5DV5997.

## **FEDERAL GOVERNMENT**

Whether it was the competing claims of different governments, or the laws affecting settlement once all of Colorado was U.S. territory, one must always keep in mind the impact of the federal government on both where and how settlement happened in Colorado. Towns in Colorado often have lived or died by federal decree. It was only the active intervention of the federal government that changed the early settlers of Denver from squatters on reservation land into legal occupants (West 1998). The federal government has also affected settlements through public works projects that provided services to residents. In particular, large water projects stimulated agricultural settlement of lands not previously arable. As more and more Depression-era sites are recorded, the wide range of impacts that were a result of the federal work programs of the era are beginning to become apparent. The federal government has also been instrumental in creating settlements of its own (e.g., Fort Garland, Camp Amache), as well as providing the markets and employment for nearby settlements.

# **EVALUATIONS OF SIGNIFICANCE**

## **Relationship to the National Register of Historic Places Criteria**

### **AREAS OF SIGNIFICANCE**

Because of regulatory frameworks, we typically think about the significance of archaeological sites based on their research potential, Criterion D of the National Register of Historic Places. The majority of this discussion follows that focus. But it is important to be aware that historical archaeological sites are often also significant in other ways, ways that often have to do with the communities in which they are located or which they represent. Both Ludlow and Camp Amache have already yielded important information about the history of the state. But their significance also extends to the role they play as memorials, testaments to acts we forget at our peril. Sites are also often associated with standing structures that are eligible because of the quality of their architecture or engineering. Work at such sites must be tempered by a conservation ethic toward those important resources. For example, excavation units at La Placita were placed in such a way as to avoid undermining the existing architecture.

Sites that are related to the theme of settlement range widely in scale. The organization of this chapter has been largely driven by scalar concerns, in large part because scale has such a great impact on the research potential and, thus, significance of historic cultural resources (Hardesty and Little 2000). The discussion in the Manifestations of Settlements in Colorado's Archaeological Record (page 116) highlighted the different groupings of people evidenced by settlement site types. It also highlighted the research potential of those settlement site types. An overview of areas of significance based on the general site matrix presented at the beginning of the chapter can be found in Table 9, below. Researchers must always keep in mind that the approach they take to a resource, whether an in-depth analysis of a feature or the comparison of scores of

sites, will affect what themes they will be able to address. The nature of the remains, as well as the nature of the project, will affect the scale at which we address significance.

In making decisions about significance, researchers would be well advised to turn to the revised thematic framework for significance created by the National Park Service (National Park Service 1996). Settlement sites are linked to many of these themes, including *Peopling Places*, *Creating Social Institutions and Movements*, *Developing the American Economy*, and *Transforming the Environment*. For example, many of the settlements in the Manifestations of Settlements section (page 116) directly relate to *Workers and work culture*, a subtheme of *Developing the American Economy*. The influence of ideas of sanitation and germ theory greatly affected urban form. The conflict between city administrators and those who dumped trash in their creeks could potentially relate both to the transformation of the environment and also to the theme of scientific thought and theory and the effect of science and technology on lifestyle and health. Many of the research questions explored by the archaeology of settlements in Colorado – the spatial segregation or integration of ethnic groups, the transformation of neighborhoods, the creation of class or work-based neighborhoods – are linked to the community and neighborhood subtheme of *Peopling Places*. The increasing urbanization of Colorado and its effects on the daily lives of people in the urban core, as well as those in once-rural areas, can be classified under both the themes of the developing economy and the transformation of the environment.

These thematic frameworks are helpful in guiding those who assess site significance, but they should not be the only frames of reference. For example, recent concerns with identity have moved beyond ethnicity, class, and gender to encompass nationality, sexuality, age, parenthood, and other elements of personhood (see Clark and Wilkie 2006 for an example based largely on historic archaeology). So, although there is no specific National Park Service theme under which one could classify evidence for the strategies of childrearing in a neighborhood, sites that would yield such data might be seen as significant because they contribute to current dialogue in the field of historical archaeology as a whole. This is not to say that researchers should be trendy with significance designations but merely to acknowledge that they should perform their work in such a way that they are preserving and researching sites that contribute to moving the discipline forward.

## **PERIODS OF SIGNIFICANCE**

In general, any site with integrity that has the kind of archaeological resources that can be used to address the themes mentioned above should be seriously considered as potentially eligible regardless of the time period represented. Certainly sites with datable remains are the most useful, as they can be placed in temporal context and, thus, help us address issues of continuity and change. That said, there are a few temporal periods that are underrepresented and, thus, potentially more significant. Features and sites that date to the time periods before a settlement was linked to transportation networks provide potentially important information about how people “made do” in a frontier situation. In some cases, this will be settlements that date before any railroads made their way to Colorado. In other cases, this will be the first occupations in post-1870 towns that were later tied into regional networks.

Some Depression-era sites are part of the Colorado archaeology database, especially those that came about as part of federal work projects, such as the CCC. But archaeology is ideally situated to address the strategies of all the state’s residents during that time of economic and environmental difficulty. Regardless of whether community members mobilized to help one another during the Depression is something archaeologists could address through the archaeology of settlements. A time period to which little archaeological attention has been paid is the most recent historic era, post World War II. This time period, which saw the rise of suburbanization on a massive scale, has been largely ignored, in part because of its recent nature and also because of its ubiquity. Certainly, 1950s suburbs or bedroom communities are not rare, nor are they underrepresented in historic documents. But, as many have suggested, researchers need to take seriously the fact that both recent and abundant sites can be quite significant (Hardesty and Little 2000; Wilson 1990). Additionally, in-depth historic documentation can provide the background for substantive and nuanced research. What archaeology can contribute to our knowledge of such sites is untested but can be



supported by research on suburbanization in a variety of fields, including architectural history and urban planning (some examples include Baxandall and Ewen 2000; Hayden 2004). The archaeology of suburbs could potentially address to what extent earlier, once rural elements were incorporated or obliterated (e.g., did any pre-existing structures or landscaping survive?). As with Victorian-era archaeology, research into the post-World War II era could address how people actually lived, as compared with our sanitized view of the era, one provided largely through the mass media.

**Table 9.** Significance themes for settlement site types.

Scale	Urban		Rural	
	Site Types	Themes for Significance	Site Types	Themes for Significance
Single Household	<ul style="list-style-type: none"> <li>• House/house lot</li> </ul>	<ul style="list-style-type: none"> <li>• Relation to town/neighborhood</li> <li>• Gender and family relations</li> </ul>	<ul style="list-style-type: none"> <li>• Cabin, ranch, farm</li> </ul>	<ul style="list-style-type: none"> <li>• Other chapter themes</li> </ul>
Multiple Individual	<ul style="list-style-type: none"> <li>• Residence hotel</li> <li>• Boardinghouse</li> <li>• Other commercial</li> <li>• Institutional</li> </ul>	<ul style="list-style-type: none"> <li>• Negotiating difference (e.g., class/ethnic/gender)</li> <li>• Community relations</li> <li>• Norms and ideals of community</li> </ul>	<ul style="list-style-type: none"> <li>• Camp</li> <li>• Boardinghouse</li> <li>• Trading post</li> <li>• Other commercial</li> <li>• Institutional</li> </ul>	<ul style="list-style-type: none"> <li>• Negotiating difference (e.g., class/ethnic/gender)</li> <li>• Community relations</li> <li>• Norms and ideals of community</li> </ul>
Multi-household/ Informal settlement	<ul style="list-style-type: none"> <li>• Duplex/triplex</li> <li>• Apartment complexes</li> </ul>	<ul style="list-style-type: none"> <li>• Relations between households</li> <li>• Adaptation to urban environment</li> <li>• Gender and family relations</li> </ul>	<ul style="list-style-type: none"> <li>• Informal settlements</li> <li>• Plaza settlements</li> <li>• Large ranches/farms</li> <li>• Temporary Occupations</li> </ul>	<ul style="list-style-type: none"> <li>• Relations between households</li> <li>• Adaptation to local environment</li> <li>• Ethnicity, class, and labor</li> <li>• Gender and family relations</li> </ul>
Portions of formal settlements or rural districts	<ul style="list-style-type: none"> <li>• Residential district</li> <li>• Business district</li> <li>• Industrial district</li> <li>• Mixed use</li> <li>• Suburbs</li> </ul>	<ul style="list-style-type: none"> <li>• Negotiating difference</li> <li>• Power and spatial relations</li> <li>• Urban growth/decline</li> <li>• Access to city services</li> <li>• Cultural landscapes</li> </ul>	<ul style="list-style-type: none"> <li>• Truck farm district</li> <li>• Portions of mining district</li> </ul>	<ul style="list-style-type: none"> <li>• Cultural landscapes</li> <li>• Power and spatial relations</li> <li>• Changing land use</li> </ul>
Formal Settlement	<ul style="list-style-type: none"> <li>• City</li> <li>• Dump</li> <li>• Cemetery</li> </ul>	<ul style="list-style-type: none"> <li>• Planning and zoning</li> <li>• Urban growth/decline</li> <li>• Public health</li> <li>• Cultural landscapes</li> </ul>	<ul style="list-style-type: none"> <li>• Town</li> <li>• Company town</li> <li>• Utopian community</li> <li>• Military installation</li> <li>• Cemetery</li> </ul>	<ul style="list-style-type: none"> <li>• Town planning</li> <li>• Ethnicity, class, and labor</li> <li>• Growth/decline</li> <li>• Relationship to central authority</li> <li>• Cultural landscapes</li> </ul>
Region	<ul style="list-style-type: none"> <li>• Greater metro areas</li> </ul>	<ul style="list-style-type: none"> <li>• Transportation</li> <li>• Urban/antiurban ideals</li> <li>• Sprawl</li> </ul>	<ul style="list-style-type: none"> <li>• Mining districts</li> </ul>	<ul style="list-style-type: none"> <li>• Transportation</li> <li>• Industrial planning</li> </ul>

## INTEGRITY

To be eligible for listing on the National Register of Historic Places, a property must not only be significant, it must also have integrity. Integrity is not “an absolute quality of a property” (Hardesty and Little 2000:45). Instead it is relational, tied to what is significant about the resource. Thus, decisions about integrity rely on understanding the physical features of the resource as they pertain to significance. To be eligible, a resource must retain several of the aspects of integrity: location, design, setting, materials, workmanship, feeling, and association. As discussed above, the scale of resources and their analysis are important factors in determining significance (see Table 9, above) and must be taken into account in any discussion of integrity.

## **Single Household**

For this type of resource to contribute to our understanding of settlements, integrity of location, materials, and association are likely the most pressing concerns. In situ household features retain integrity of location. If these can be linked to historic occupants, then integrity of association is also assured. Taking preservation issues into account, undisturbed features typically maintain integrity of materials, implying that the archaeological remains recall the full range of tangible evidence that went into the creation of that feature. A privy subjected to bottle-hunting has had its material integrity compromised. However, because it remains in its original location, if there is enough stratigraphic integrity to create associations, it can contribute to the site's eligibility.

## **Multiple Individuals**

Issues of location and material integrity remain similar at this scale of analysis. It is very unlikely that archaeological remains in these sites can be linked to specific individuals. However, features have integrity of association if they can be linked to the groups who created these features, whether schoolchildren, workers at a laundry, or the residents of a particular boardinghouse.

## **Multihousehold/Informal Settlement**

At this scale, integrity of association need not be at the level of the household but extends to neighborhood or community scale. For example, objects deposited behind an apartment building will be derived from a number of households. Yet they reflect the community of people who resided there. In the same way, a trash dump associated with an informal settlement can answer questions about the community as a whole, so long as the trash dump's material integrity is sufficient for such research.

## **Portions of Formal Settlements or Rural Districts**

When assessing the integrity of sites at this scale and beyond, researchers need to be concerned with elements as they are linked to the larger cultural landscape. Thus, integrity of design should be an important part of the analysis. Some elements of that design may be seen in features that are part of the official landscape, such as publicly planned and managed elements like parks or roadways. Others may be vernacular landscapes, such as a series of backyard orchards. Sites that lack material integrity at the household level may still contribute to an understanding of design at this larger scale. For example, at the Rocky Mountain Arsenal, each individual household's material integrity was compromised when the buildings were razed. However, as a suite of related sites, and particularly as a still-legible cultural landscape, the sites retain integrity at a larger scale of inquiry. Together they document and represent a pattern of life on the urban periphery in the years leading up to World War II.

## **Formal Settlements and Regions**

At these two largest scales, assessing integrity will often begin with design. That design need not be static, and, in fact, resources that reflect the way that members of a community or residents of a region use, modify, or undermine official landscapes may be even more important than resources that are relics of a short period of time (e.g., a continuously occupied urban center as opposed to an abandoned boom town). This complexity of integrity also plays itself out with regard to location. At this scale redeposited materials (e.g., in city dumps) and relocated buildings are part of large-scale planning. In mining districts, for example, buildings were often designed to be moved (Hardesty and Little 2000:45). Such elements do not necessarily lose their locational integrity if such changes are planned or if they happened during a period of historic significance. Integrity of association also reaches its greatest flexibility at this scale. If a series of features lacks association at the household level but retains material integrity, it may still be able to yield important information at this larger scale. For example, statistical analyses of a series of features can be quite revealing of settlement or regional scale issues, such as the public health consequences of residing in different parts of town.

## **RESEARCH NEEDS**

### **Quality of Recovered Archaeological Data Relevant to the Theme in Colorado**

As synthesized in this chapter, a good deal of archaeological work has already been pursued at the settlements of Colorado. In fact, for almost all of the site types outlined in this chapter, researchers can turn not just to recorded but often tested or excavated sites. The work done to date provides good examples for future researchers of how to approach large scale settlements using the research potential of various kinds of features. For example, the work at both Berwind and Ludlow involved features related to the household, neighborhood, and settlement wide scale. Approaching such sites from a multiscale perspective greatly broadens the type of research questions that can be addressed with the data.

### **Potential for Good Quality Archaeological Data to Exist for the Theme at Sites in Colorado**

As presented in the first three sections, many different kinds of settlement sites are already well represented in the site database, especially at the scale of the single household and the formal settlement. Sites that represent multiple individuals or multiple households and sites that are portions of formal settlements or rural districts have garnered less attention. The following discussion focuses on some of the sites at those scales that have rarely seen our archeological attention.

#### **INSTITUTIONAL SITES**

A number of institutional sites are known in the state, and certainly more exist that have not been recorded. Churches and other religious-based sites, schools, prisons, reform institutions – each of these existed in Colorado and all are relatively easy to identify (see the section Manifestations of Settlements in Colorado's Archaeological Record, page 116). Many sites have elements that could be considered institutional. The Berwind townsite (5LA2175) includes the ruins of a YMCA, although it was not the object of archaeological research at the site. Schools are a particularly interesting site type for studying settlements because they are locales where young people are prepared for community life. Issues that can be researched through the archaeology of schools include local investment in education and how ideas about sanitation and lighting technology are implemented at a local level (Gibb and Beisau 2005). Other types of institutional sites profitably investigated through historical archaeology outside of the state include reform institutions (De Cunzo 2001) and correctional facilities (Hauff 1988).

#### **COMMERCIAL SITES**

Commercial sites have long been considered ideal subjects for archaeological research into communities and settlements. For example, archaeologists working in Old Sacramento, California, compared the dietary remains recovered from two saloons, a prison, and a hotel, to see how different classes of people in the town were being fed (Schulz and Gust 1983). Commercial enterprises like stores are another important source of data because they provide insight into how a community is linked into trade networks, as well as insight into consumer choice, particularly for different ethnic groups (Praetzelis et al. 1987).

City directories for settlements all over the state are testaments to the range and number of commercial sites available to archaeologists in Colorado. Certainly some of these sites, especially those that have seen continuous and changing use for decades, may lack archaeological integrity. Work at the Tremont House and the Silver Springs Store, however, give some indication of the potential of these types of sites to tell us about Colorado communities.

## URBAN ARCHAEOLOGY

Urban archaeology is a growing arena of historical archaeology. Although folk wisdom held that the continual reuse of urban space destroyed earlier remains, work in city after city has shown this to be patently untrue (Staski 1987a). As discussed above, Colorado has a high, if not yet realized, potential for urban archaeology. Researchers engaged in such work here can turn to a number of studies that focus on the urban archaeology of western cities such as El Paso (Staski 1984), Sacramento (Schulz and Rivers 1980), and Tucson (Cioleck-Torrello and Swanson 1997) as a guide for their work.

One of the most comprehensive projects of urban archaeology in the West is the recently completed work in West Oakland, California (Praetzelis and Praetzelis 2004). The Anthropological Studies Center of Sonoma State University has generously made the popular report available online through its website. This project is exemplary, in part because the work was led by Adrian and Mary Praetzelis, who have broad experience in the historical archaeology of the urban west. It was also a monumental undertaking, involving 22 city blocks in which were found 2,600 archaeological features, including 120 significant features from which over 400,000 artifacts were recovered. Focused in an ethnically mixed, working class neighborhood, the research not only provides a methodological template for how to approach urban archaeology on a vast scale, but it also shows the promise of such work. For example, because of the large sample size, detailed statistical analysis could be performed that compared the material culture of households with the socioeconomic status and professions of occupants. An analysis of the faunal data suggests that there was absolutely no statistically significant correlation between a family's wealth and the cuts of meat they consumed: high-quality meats were found in houses of all socioeconomic levels in nineteenth century Oakland. This finding stands in contrast to the written record of reformers who tried to convince immigrants and other working-class people that thrift and health called for less meat consumption. This unambiguous pattern has been interpreted to suggest two important things: first, the meaning of meat extends beyond nourishment and, second, the purchase of commodities above one's status seems to have been a common practice (Praetzelis 2004). Colorado's urban areas also have the potential to yield this kind of data given a project of large scope.

### **Known or Potential Sites within the Theme in Colorado That Should Be Sought, Reexamined, or Reevaluated**

As suggested in the Manifestations of Settlements section (page 116), a number of site types related to settlement have not been investigated archaeologically. Few domestic sites that represent either multiple individuals (such as boardinghouses) or multiple households (such as apartment buildings) have been investigated archaeologically or even recorded. Given the potential of such sites for information about the formation of class, gender, and ethnic identity (e.g., Beaudry 1993), we should make strides to identify and record these resources.

Although a number of institutional sites are present in the architectural database, very few of these have been subjected to archaeological research. If any of these sites fall within the purview of a project, they should be given adequate attention, and work there contextualized by the larger body of archaeological research outside the state. The same holds true for commercial sites, which beyond hotels, have been little studied. Although a number of large farmsteads and ranches have been recorded or tested (e.g., Hunt et al. 1999), rarely has the focus been on these sites as places where people of different backgrounds created a community together. Finally, as suggested in the discussion of significance, we should seek to record sites that document the spreading out of our urban areas through suburbanization.

For those site types that are rich in the database, such as camp and towns, researchers would be well served by returning to previously recorded, important sites. This is particularly true of those sites such as Old Las Animas City, where an understudied collection of artifacts exists. Many of the larger-scale sites in the database were examined prior to the advent of technology now available to historical archaeologists. Many of these sites would likely benefit from the application of geoprospecting and remote sensing, including

Dearfield, which is a prime candidate for geophysical analyses such as ground- penetrating radar. Finally, highly visible and highly significant settlement sites are vulnerable to collection and looting. Managers and archaeologists should work to retrieve information before it is lost at places such as mining communities or Camp Amache, which is currently being developed as an interpretive site.

## SUMMARY

This chapter has synthesized the archaeology of settlements in Colorado and, as such, is a baseline from which future work can grow. The record of preservation and research on settlements in the state is a strong one. The authors highly suggest that researchers seek out documentation of prior work on these kinds of sites. Future projects will be stronger if they incorporate the methods (field, archival, laboratory) and results that make up the body of previous research. Even for site types that are either absent or rare in our database, Colorado archaeologists can build on the research in the field as a whole. At this point there is no reason why anyone needs to reinvent the wheel when it comes to the archaeology of historic settlements.

The task set out for the archaeologists of Colorado in this chapter is somewhat daunting. Think critically about house lots, town dumps, temporary campsites. What might they reveal about what happened when the different people of Colorado tried to live together? Do they speak to us of immigrants trying to fit in or of insiders trying to keep others out? Do they address the impact of central authority on everyday life? Do they give us a vision of how previously held traditions were modified to fit a new setting? Are they evidence of the exuberance of good times or the strategies of the bad? The list of questions is limited only by our data, our imaginations, and our budgets.

The archaeology of settlements does not stand alone. As suggested in a number of places in this document, the themes from the other chapters in this context are incredibly important to addressing the significance and research potential of settlement sites. The approach taken to study these resources must always be tempered by issues of scale. One privy, properly contextualized, can contribute to what we know about life in a settlement. At the other end of the scale, a full understanding of life in an urban center comes from knowing what goes on in the periphery. At each step in the process of managing these resources (survey, testing, assessment, excavation, and analysis), all involved need to balance the nature of the resource with the almost endless stream of historical inquiry to which such resources may contribute.



## **CHAPTER 4. VICTORIAN MINING SETTLEMENTS**

**Steven G. Baker, Duane A. Smith, and Martha Sullenberger-Fry**

### **Introduction to the Thematic Context and Resource Base**

Victorian mining settlements are the thematic context of this chapter, as it builds on some basic historical archaeological approaches summarized in the Introduction (Chapter 1). This is a case study on Victorian mining settlements, and most related to the chapters on Settlements (Chapter 3) and Industry (Chapter 7). This chapter offers additional tools and perspectives that can productively assist in the evaluation and study of the physical remains of such settlements. The physical remains of these many settlements that once made up the state's abundant historic mining landscapes are plentiful, very complex, and compelling archaeological sites. These settlements are a major theme in Colorado historical archaeology (Baker 1978a:12) as well as our popular history (Brown 1969; Eberhart 1959; Pezolt 1894; Smith 1967a; Wolle 1949).

Church's introduction outlines some of the various approaches that can be relied upon to study historic sites without having to draw upon their physical archaeological remains. These are all valid approaches that play important roles in the comprehensive study of historic sites and places. It is, however, the traditional database considered here, namely architectural remains and material culture, reposing in Colorado's old mining settlements. These features and artifacts constitute classic archaeological sites that are the core consideration in evaluations of significance and eligibility to the National Register under Criterion D. It is typically the preservation or conservation of such material remains, ostensibly for future archaeological study, that are the primary goals of key state and federal legislation, such as the National Historic Preservation Act (16U.S.C.Sect. 470f 1985), the Colorado Historical, Prehistorical, and Archaeological Resources Act (CRS1973 24-80-401 et seq.) and Archaeological Resources Protection Act (ARPA) of 1979-Title 16 USC, Sections 470aa through 470mm). Support for this view can be found in this legislation and by the Advisory Council on Historic Preservation (1980; 1993), Hardesty and Little (2000), and Hutt, Jones, and McAllister (1992). Material remains are also still central in the basic definition of historical archaeology (Society for Historical Archaeology 2006) as Church summarizes in Chapter 1.

As reiterated throughout this volume, the recording and evaluation of historic sites as historical archaeological resources, including settlements, have not been very thorough or effective in Colorado thus far. Very few actual historical archaeological studies of the physical remains of Victorian period settlements have been conducted in this state or elsewhere. Accordingly, few effective formal guidelines or taxonomic tools have been available to assist archaeologists in evaluating the Victorian period mining or other types of settlements in terms of the realistic contribution potentials of their physical remains as traditional archaeological resources (Baker 1978a; Horn 1992). Historical archaeologists' understandings of these specific ultimate contribution potentials clearly remain unsettled amid the complex and rapidly changing perspectives on what historical archaeology is and how it may most successfully be undertaken. The nonspecialist can be even more bewildered when confronting these issues. It is not enough to simply determine that a site still has integrity and may therefore be able to yield some highly generalized kinds of information that might help illuminate our history within very broadly envisioned problem domains or nontraditional focuses on other than the material remains. As Buckles and Buckles called for some years ago (1984:104), archaeologists must do better than that and develop models and methodologies that can help us to

reach beyond humanistic and intuitive archaeological interpretation of Victorian material culture (Deetz 1983, 1988; Jennings 2005; Leone and Potter 2003; Praetzellis and Praetzellis 1992; Yentsch and Beaudry 1992). Researchers must develop the tools necessary to more rigorously identify, evaluate and investigate the material remains of Victorian mining settlements. As Church acknowledges in Chapter 1, these temporally late resources are very difficult to effectively evaluate and study in terms of their contribution potential within traditional historical archaeological perspectives under Criterion D of the National Register criteria for eligibility.

## **Chapter Goals**

In her introduction, Church summarized Bill Lees's (1988) thoughtful division of the basic problem domains involved in the work of historical archaeology. Among these domains are processual studies and archaeological science, which rely heavily on the material culture record. This chapter is built around these specific domains and has three primary goals: to offer 1) a cultural perspective, 2) a useful taxonomic tool, and 3) an analytical methodology that can help in the identification, evaluation, and investigation of Victorian mining settlements. These goals include defining and characterizing the sites of Colorado's Victorian mining settlements and districts as the material expressions, or "archaeological cultures," deriving from the communities that once occupied them. The chapter endeavors to demonstrate how investigators can work to reach beyond humanistic and intuitive interpretative approaches and begin to formally order and broadly compare archaeological data. Such steps are critical in actually building a historical archaeology of Colorado that is rooted in formalized analysis of the physical remains of mining and other types of settlements (Baker 1978a, 1989, 2002a, 2006). This supports the primary goal proposed for this entire context, which was to synthesize the current professional understanding of the historical archaeology of Colorado as it has been practiced to this point (Colorado Council of Professional Archaeologists 2001).

## **Definition of American Victorian Culture and Other Key Concepts**

The concept of culture is still central in any consideration of historical archaeological theory and contribution. Accordingly, it is American Victorian culture as an ideological system within which Colorado's mining and most other period settlements must be viewed (Baker 1978a, 1983a, c, 1986, 1989, 2002a, 2006; Hardesty 1981:75; 1985:214, 225; 1988:5; Hardesty and Hattori 1983; Howe 1975, 1976a, b; Praetzellis 1991; Praetzellis and Praetzellis 1992; Praetzellis and Praetzellis 1990; Stoehr 1974; 1975:21). No one seems to have ever proposed an alternative cultural definition or explanation relative to this time frame in U.S. history. From about 1865 to 1918 the cultural profile of the United States, though a complex pluralistic society, was dominated by the American Victorian cultural tradition. This tradition is defined here and is believed to be reflected in what was an evolving Victorian archaeological culture, pattern, or unit which was similarly dominant on the physical landscape of the United States during this time (Deetz 1968:7; 1977a:10-11; Willey and Phillips 1958:11-18). Most of Colorado's mining settlements were founded during the American Victorian period (ca. 1865-1918). Mining settlements derived from communities that, while also containing other ethnic groups and their subcultures, were founded and dominated by Angloamericans. It was they who imported American Victorian culture to Colorado during its massive population infusion of the post-Civil War years. In significant measure the settlements and associated mining districts evolved in conformance with Victorian dictates even if some of their inhabitants participated in Victorian culture only to varying degrees.

Victorianism was the cultural dominion that evolved in the United States after having been transplanted from Great Britain. Victorianism also characterized much of Canada during this period and was spread throughout much of the world by way of British imperialism. Bonnie Clark has pointed out how "historians have provided us with adequate proof that a mass culture broadly termed 'Victorian' was, through mass media, transportation, and mass production widely disseminated across much of the first world" (Bonnie Clark, personal communication 2005). Victorianism was well entrenched in the United States soon after the Civil War, and was widely adopted to varying degrees by many social and ethnic groups during a crucial period of cultural transformation here. As it evolved, it persisted as the overarching cultural ideology in the



country until about the end of World War I. Its influences ranged far and wide from the American middle class, through the U.S. military (Scott 1983), through the ethnically diverse mining frontiers of the western United States (Hardesty and Hattori 1983), and even affected conservative American Indian people, such as the Hopi (Adams 1983; Hagan 1988). Vestiges of Victorianism lingered long after that, however, and some scholars argue that it continues to influence American culture and our perception of the world to the present day (Krueger 2002). Daniel Walker Howe has outlined how the period hallmarked as Victorian “was a time of industrialization, knowledge explosion, immigration and vast population growth, urbanization, geographical expansion, changing race relationships and the greatest armed conflict on American soil” (Howe 1975; 1976a:3).

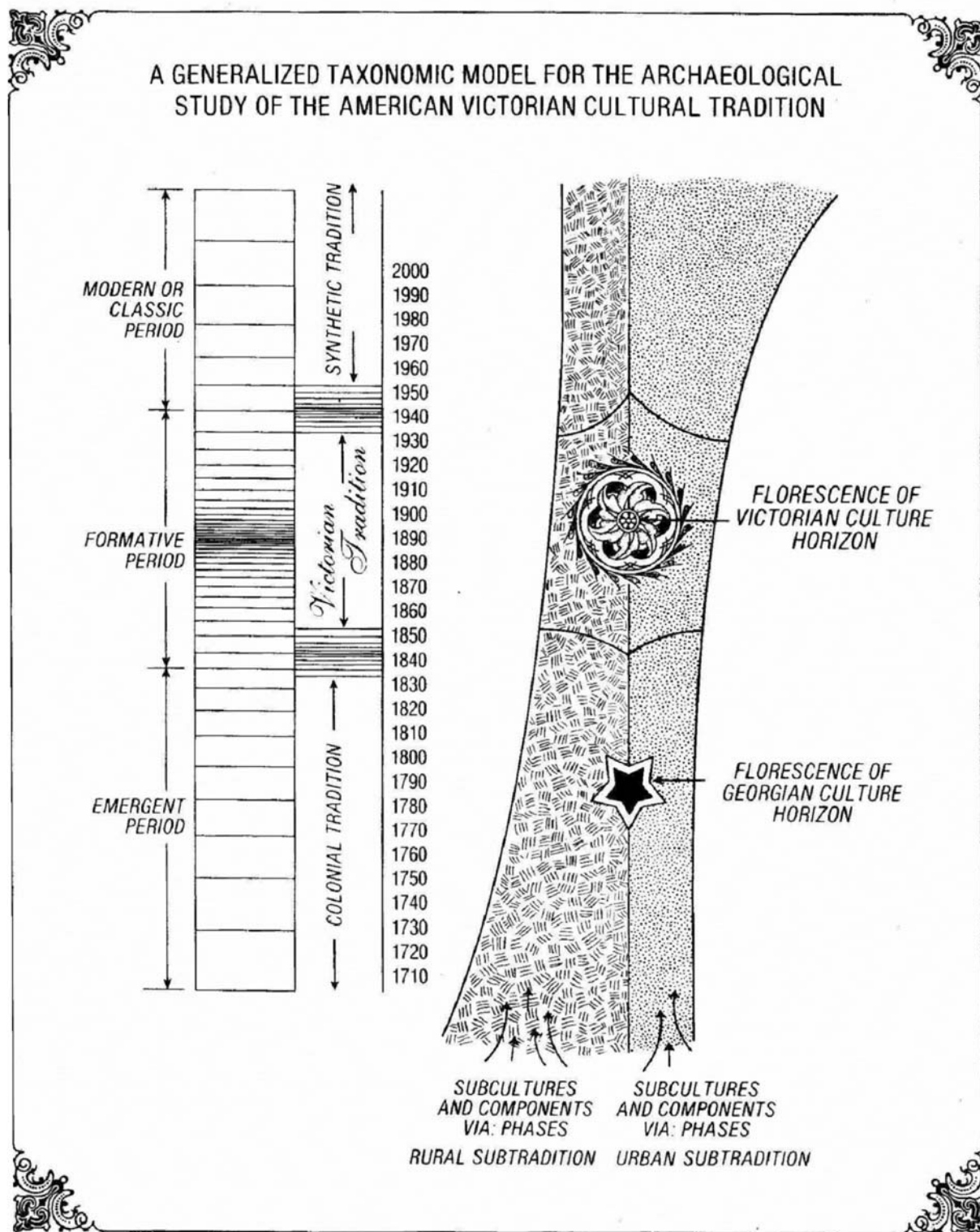
Victorian culture replaced Georgian culture in the United States in the nineteenth century (Baker 1983a, c, 1986; Deetz 1972, 1977a, b, 1988). The Georgian (Figure 6) was the first popular culture to appear in America, and by 1800 this “new cultural system” extended unbroken over all of Angloamerica. The Georgian world view derived from Europe and the Renaissance. Victorian culture grew out of the British and American middle classes and was largely a product of the industrial revolution. Among other attributes Victorianism emphasized were Protestant religious beliefs, literacy, compulsive behavior stressing an ethic of steady work and punctuality, Whig/Republican political orientation, temperance, emphasis on rational order in individual and society behavior, humanistic self-cultivation and self-denial of physical or mental excesses, emphasis on efficient use of time, conspicuous consumption, individual self-righteousness, and emphasis on natural laws of moral principles and didacticism (Baker 1978a, 1983a; Hardesty and Hattori 1983; Howe 1975, 1976a; Praetzellis 1991; Praetzellis and Praetzellis 1992; Praetzellis and Praetzellis 1990). It also could evidence ostentatious displays of wealth which were often quite gaudy.

First fostered in the urban/industrial eastern states, the American version of Victorianism spread west with the settlers. Geographic expansion was a desired goal and the cry of “Manifest Destiny” that had begun to echo across America in the 1840s ultimately becoming a legitimate child of American Victorian thought (Merk 1966). Victorianism was the major force in the transformation of a rural United States into a highly industrialized, urban, multiethnic nation (U.S. Bureau of the Census 1949). This cultural tradition was diffused, with varying degrees of success, to other ethnic groups recently arrived in the country and was an obvious instigator in U.S. Indian policy whereby attempts were made to force these cultural attributes onto the American Indians (Baker 1978a; Furnas 1969; Hagan 1988).

With the advent of mass transportation in the form of sailing ships, steamboats, and the railroads, the Victorian cultural profile spread through the Midwest, West Coast, and, ultimately, the inland western United States. It arrived on the western mining and agricultural frontiers with the first prospectors and some homesteaders. It was not, however, until the coming of the railroad and the resulting industrialization of the mining regions of the American West that this cultural tradition reached its peak in the Rocky Mountain region. At that time it appeared there as a classic archaeological horizon, quite evident in the region’s architecture, industry, portable material culture, and literature. This Victorian horizon is defined below (Baker 1983a; Deetz 1977a:40-41; South 1977b:202-203, 232-233; Stoehr 1975; Willey and Phillips 1958:33). Overall, the American Victorian cultural horizon appears to have peaked by around 1900 for the nation as a whole and went into a steady decline after World War I. This waning was exacerbated by the economic depression of the 1930s. The Depression resulted in local Colorado urban areas losing people and capital – two of the prime ingredients that had been behind the florescence of Victorianism here (Baker 1983a). Few new mining settlements were established in Colorado after World War I and, despite some long term influence (Krueger 2002), the Victorian culture had largely withered away into a residual minor presence all over America within a couple of decades after World War II.

David Brose (1967) seems to have been the first archaeologist to actually incorporate the term *Victorian* into the description and interpretation of an archaeological site. Baker (1978a; 1983a; 1983c) introduced the concept of American Victorianism to historical archaeologists in the United States, drawing heavily from the work in American studies of Daniel Walker Howe (1976a). Howe’s work is still probably the most insightful single essay on Victorian culture in America. Archaeological references to Victorian

culture (Hardesty 1988; Hardesty and Hattori 1983; Praetzellis 1991; Praetzellis and Praetzellis 1992) usually cite back to either Baker (1978a) or Howe (1975; 1976a).



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**Figure 6.** A taxonomic model for the archaeological study of the American Victorian cultural tradition

To clarify the cultural context it is necessary to define some specific terms and concepts utilized here in reference to Victorian archaeology and the evolution of Colorado's mining settlements. Among these are *Victorian*, *Victorian era*, *Victorian period in America*, *American Victorianism*, *Victorian archaeological culture*, *Victorian archaeological tradition*, *Victorian cultural horizon*, *urbanization*, and *archaeological frontier*. Figure 6 diagrams a generalized taxonomic model of cultural change relative to the archaeological study of the Victorian cultural tradition in relation to the rural and urban subtraditions also considered in Chapter 3.

The term *Victorian* is probably one of the most commonly recognized descriptive appellations in the history of both England and the United States. Although the term derives from the English Queen Victoria, it has a wide range of other uses and meanings relative to the latter nineteenth and early twentieth centuries. The term is used to denote a historical time frame, styles of architecture and furniture, popular culture, ideology, literature, clothing styles, personal morality, and philosophical outlooks, among other things. It also has importance as the name of the cultural context for a major cultural and historical archaeological tradition of the United States and other parts of the world. It is the critical ideological context in most of Colorado's history and historical archaeology.

In a temporal sense a classic term is *Victorian era*, actually a British term that in its simplest form means the years from 1837-1901 during which Queen Victoria reigned. In Britain the Victorian era was preceded by the Regency era and followed by the Edwardian era from 1901 to 1910 during which King Edward reined. In Great Britain the Victorian era marks the true inception of a new cultural era. It is considered the height of the British industrial revolution and the apex of the British Empire. In a somewhat attenuated form Victorian culture was transmitted to the United States where it came to dominate the nation's cultural profile.

As a major cultural unit, and *not* a political or economic one, the time when Victorian culture dominated the American cultural profile may rightfully be called the *Victorian cultural period in America*. Though its actual start may be debated, it certainly extended from the end of the American Civil War in 1865 to the end of World War I in 1918. This time frame is used herein because these major wars, as have most throughout the history of the world, ushered in very significant cultural changes in the United States. The period enfolded what has commonly been referred to as the "Gilded Age," as Mark Twain and Charles Dudley Warner coined the term in an effort to illustrate the outwardly ostentatious but corrupt nature of American society during the industrialization of the late 1800s (Twain and Warner 2001 [1876]). Rapid industrialization and the often turbulent interaction between labor and industry were key traits of the Victorian period. They were responsible for the obvious labor issues involving the American Populist and Progressive movements and the rise of unions. These issues very much characterized the period and culture both in the United States and Britain (DeSantis 1973).

One can readily find reference to the Victorian unit of American culture history that corresponds to the years from 1865 to 1918 or thereabouts with some writers using slightly varying dates. Examples include H. Wayne Morgan's classic *Victorian Culture in America 1865-1914* (1973) as well as Daniel Walker Howe's and Stanley Coben's key discussions in *Victorian America* (Coben 1976; Howe 1976a), which demonstrate how the tradition persisted into the twentieth century. Other good sources include Ames (1992), Grier (1989), Krueger (2002), McDannell (1994), and Schlereth (1992). A host of descriptions and syllabi for university classes on Victorian culture in both America and Britain are listed on the Internet. One example is the graduate-level course on "State and Society in Victorian America" taught by Richard John in the History Department at the University of Illinois at Chicago. He brackets it temporally as 1877-1920 (John 1994).

The years preceding the Civil War had been hallmarked by the Georgian cultural tradition in America (Deetz 1977a; Glassie 1975). The years following World War I are not known to have ever been assigned any specifically named cultural designation other than Modern or Twentieth Century American History. These years are commonly then broken down into a variety of subheadings primarily involving such things as economics, politics, popular culture, and world affairs. They did, however, witness massive cultural changes in the United States (Allen 1931; Davis 1971). The lead author has referred to this highly complicated and

evolving time in American culture history as simply the Modern or Classic period (Figure 6), which evidences the *Synthetic cultural tradition* (Baker 1980, 1983c). This may be the only known attempt by a historical archaeologist to delineate this time frame from a taxonomic perspective and compare it with earlier historical archaeological traditions in America. The Modern period stands as a major and extraordinarily complex cultural unit, which contrasts sharply with both the Victorian and the Georgian and in some views offers very limited potentials for traditional archaeological study despite some eclectic examples to the contrary (Gould and Schiffer 1981; Rathje and Murphy 1992). Historians have traditionally used a variable taxonomy in teaching and writing about American history that emphasized a multitude of themes. These were primarily temporal, political, and economic rather than cultural, as anthropologists might conceive of them.

American Victorian culture is sometimes referred to as *American Victorianism*. It is a very complex idea which is far too broad to describe fully here. One may, however, find good descriptions of its many aspects and relationship to British Victorian culture in a huge number and variety of works. These include Avery (1970); Furnas (1969); Howe (1976a; 1976b); Morgan (1973); and Shifflett (1994).

The concept of tradition in Victorian archaeology is used here in the general archaeological frame as outlined by Willey and Phillips (1958:37, 39-40, 62-63). *Victorian archaeological tradition* simply refers to the temporal continuity of Victorian culture and its archaeological record through time in the United States. One may speak to the concepts of the general Victorian cultural tradition that passed from generation to generation or to its archaeological tradition as it evolved through time along with the culture and ideology themselves.

The concept of a *Victorian cultural horizon* in historical archaeology (Figure 6, above) was developed and introduced by Baker (1983a; 1983c; 1986) from a Colorado perspective similar to that which Jim Deetz held for the Georgian. Deetz seems to have been the first archaeologist to use the term *Georgian* in reference to a historical archaeological culture unit (1972; 1977a; 1977b) equivalent in scope to that for which Victorian is used here. He was the first to introduce the concept of horizon in the broader application of culture in the historical archaeology of this country. He believed that in archaeological terms the Georgian period can be "viewed as the first horizon in American History" (Deetz 1972:18-19; Glassie 1975). South (1972; 1977b:203) had earlier used the concept of archaeological horizon in material culture studies in the way originally defined by Willey and Phillips (1958:31-34). Deetz (Deetz 1977a:40) likewise used the term in its classic archaeological sense as "a pattern characterized by widespread distribution of a complex of cultural traits that lasts a relatively short time." The concept of horizon is equal to the concept of cultural *climax* used by Willey and Phillips: "The climax may be defined as the type or types of maximum intensity and individuality of an archaeological horizon or tradition" (1958:39). This is necessarily a value judgment, but only in relation to the horizon or tradition involved. In whole cultural terms the climax becomes the phase or phases of maximum intensity and individuality of a culture or civilization.

Following that of the Georgian (Deetz 1972, 1977a, b), the Victorian may legitimately be viewed as the second great archaeological horizon in Angloamerica (Baker 1983a, c, 1986). Unless initially established by or in relation to a railroad, Colorado's mining districts and agricultural centers underwent rapid transformations with a railroad's arrival. Although Victorian culture certainly did appear without it, the full flower or maximum development of the Victorian cultural horizon (or climax) in any settlement, mining district, or locale in Colorado, and usually elsewhere, depended on the presence of a railroad. This florescence of the American Victorian cultural tradition could be seen most readily in the following fundamental material characteristics in a settlement: 1) industrialization with its phenomenal technical advances, 2) urbanization, 3) geographical expansion, and 4) conspicuous consumption (Baker 1978a, 1983a, 1986). *Urbanization* is simply the process of population increase over time and the concomitant increase in the density of the built environment in comparison to the surrounding areas. Victorian horizon might also be called the *Victorian florescence*. It was when the culture peaked in an area, district, or town before it began to decline. The horizon arrived at different times in different areas of Colorado, typically depending on the availability of the railroad to transport both the people who carried the tradition and the material things, such as architecture and mass consumer goods (Stoehr 1975), which so readily and obviously reflected it.

There are several related issues involved in the arrival of the railroad in an area but primary among them was the discovery of productive ore bodies in mining regions. Until these bodies were proven there was usually no railroad to them. The availability of both good ore bodies and agricultural commodities are consistent preconditions for the extension of the railroad, other than when a main route took it near some settlement. The role of railroads in the settling of Colorado is cogently discussed by Fraser and Strand (1997). Following and dependent on the condition of good industrial potentials, such as in mining, were the appearance of corporate interests (Twitty 2002). Corporations could not develop their holdings without the railroad to bring in equipment and take out ore, concentrates, or other commodities. Once the corporations and their associated profits appeared a certain institutionalization of a community developed (see Gordon and Malone 1994; Trachtenberg 1982). Everything got bigger and more urbanized (businesses, religious and fraternal organizations and government) and more standardized. This growth and standardization is evident in the material culture of entities such as public institutions or corporate boarding facilities, and contrasts with individual nuclear households which can still reflect some individualism). The corporate presence with profits and cash led to the very conspicuous consumption patterns and pretensions of wealth most easily seen in the architecture. These include the classic attributes such as ornate cast-iron fronts and other decorative detail reflective of the Victorian horizon. The florescence of Victorianism occurred at different times in different places, largely as a result of the timing of a railroad's arrival, and clearly corresponded with and contributed to the evolution of mining settlements (Baker 1983a, 1999c, d, 2000b; Smith 1967a, b; Stoehr 1975).

The inception of most of Colorado's Victorian period settlements may be viewed within the concept of an *archaeological frontier*. The Victorian cultural tradition spread deep into Colorado, which was then a region that had been little explored. Although people still continue to refine the concept, archaeologist Kenneth Lewis (1976; 1977; 1984) has given what is still commonly cited in the historical archaeological literature as a solid discussion of archaeological frontiers. Lewis stated:

A frontier may be defined as a region in which the dispersal of settlement into a new territory takes place. It is the zone that separates the unsettled and settled portions of a territory that lie within or under the effective control of a state....As a temporal phenomenon, the frontier arises with the first influx of permanent settlement...and ceases to exist only when an upper limit of growth is achieved, accompanied by a stabilization of the settlement pattern...

The area of colonization must remain tied to the metropolitan area [meaning the mother state of the colony and not just a city] from which settlement originated, because it is largely dependent on the maintenance of a complex network of trade and communications linkages that serve as the route of movement for new immigrants and supplies as well as an outlet for colonial products. This network provides the basis for the social, political, economic, and ideological integration of the newly settled territory. (Lewis 1977:154)

Lewis relied upon five specific conditions in defining archaeological frontiers. The first was the need for prolonged contact to be continually maintained between colonists and their parent society. The second was a loss of complexity in the trade and communications linkages with the homeland as a result of relative isolation. Typically, as a third condition, true frontier settlements usually become more geographically dispersed than in the homeland. A fourth was that the dispersed settlements would tend to focus around central settlements, which he referred to as "frontier towns." These served as a nucleus of social, political, economic, and religious activities and the terminus of the transportation network linking the area to the homeland. The last characteristic that Lewis identified was geographical variability. This implies that the settlements closest to the moving frontier always represent the earliest stage of frontier development (Lewis 1977:154-155).

In the case of most early Colorado mining settlements, they were certainly tethered to the parent, and the communications linkage was definitely simplified. They were also dispersed settlements. They were Lewis's "frontier towns," with the settlements quite close to the moving frontier. In this capacity, any archaeological interpretations that may be attempted for individual sites have to take into consideration how other archaeologists, such as Lewis and South (1977b:141-163), have tried to interpret frontiers from an

archaeological perspective. Hardesty (1985; 1988:1) has also discussed these in his archaeological consideration of mines and mining camps, as they were commonly the first settlements on the industrial mining frontier of Nevada and other western states. He sees these settlements as little patches or islands surrounded by social and cultural wilderness and linked into much wider cultural systems such as the American Victorian tradition. Mining historian and chapter co-author Duane Smith has considered mining settlements an “urban frontier” (Smith 1967a). He has recently begun to back away from using the terms *mining* and *frontier* together simply because mining settlements were urban in nature and involved substantial populations while the concept of frontiers can readily invoke images of more limited populations.

## **An Archaeological Model of Colorado’s Victorian Mining Settlements**

### **INTRODUCTION**

An archaeological model is offered here for describing major attributes of the process of urbanization as it developed among the many spontaneously founded mining settlements and districts in Colorado. The model is an abbreviated version of one produced some years ago by Baker, Smith, and Sullenberger (1980). It has been utilized to order inventory and evaluation data for the settlements of Crested Butte (Baker et al. 1981), Gunnison (Sullenberger and Baker 1981), Ouray and various other settlements in Ouray County, and other areas including the Red Mountain and Sneffles mining districts (Baker, Black et al. 1980; Horvath 1981; Sullenberger 1981). The model is rooted in theoretical historical archaeology concepts and data presented by Baker (1978a; 1983c; 1986), and integrated with data and perspectives from historian Duane Smith (1967a; 1967b) and architectural historian Eric Stoehr (1974; 1975). All of these sources focused on Colorado data. The model outlines the evolutionary characteristics of the urban subtradition of American Victorian cultural tradition (Figure 6, above), so that the physical remains of its spontaneously founded mining settlements can be identified, comparatively organized, and evaluated. By focusing on physical attributes that may be seen in the archaeological record, the model can help guide historical archaeological assessments and research in these kinds of settlements and entire mining districts. The model focuses only on the mining settlements and does not treat the actual sites of mining activities, such as mines, mine boarding houses, or mills, as considered in Chapter 7. The model should, as Buckles and Buckles noted (1984:104), lead to recognition of new questions to be answered and problems to be solved regarding the nuts and bolts of historical archaeology and the dynamics of cultural process within the Victorian mining context.

Perhaps the most explicit examples of urbanization on the far western frontier were the mining rushes, beginning with the California Gold Rush in 1849. Thousands of people were enamored with the idea of easy riches. Where prospectors found significant traces of precious metals, communities quickly appeared. Smith detailed this phenomenon:

On the mining frontier the camp – the germ of a city – appeared almost simultaneously with opening of the region. Individual prospectors or prospecting parties conducted the initial exploration, but their success quickly attracted others who formed the basis for the nascent community. (1967a:4)

The evolutionary process of urban development on the mining frontier can readily be discerned within the general conceptual framework of evolutionary theory because it can be considered a key concept in successful historical archaeology (South 1977b:xiii). Nascent towns and entire mining districts struggled through cycles of boom and bust as they attempted to attain true urban status.

### **THE ARCHAEOLOGICAL MODEL**

Four fundamental characteristics of American Victorian culture that are particularly relative to archaeology include 1) industrialization, 2) urbanization, 3) geographical expansion, and 4) conspicuous consumption (Baker 1978a, 1983a, b, c, 1986; Baker, Smith et al. 1980). These characteristics are imbedded within the historical and architectural history respectively discussed by Smith (Smith 1967a, b) and Stoehr (1974; 1975). Four variables were selected from each of these characteristics to illustrate how they were translated into the physical development of the settlements and districts of the mining frontier. The four

variables are 1) mining methods, 2) commerce, 3) architecture/town planning, and 4) transportation. The three stages of development were 1) the incipient settlement phase, 2) the camp phase, and 3) the town phase.

### **Incipient Settlement Phase**

This phase marked the first permanent settlement of a region. Initiated by promising reports of precious ores, a rush into the area would ensue, and numerous nascent urban communities would appear. At the same time increasing contact would be made with the native Indian groups resulting in what Leacock and Lurie (1971) defined as a competition and conflict stage, which threatened the land base and political autonomy of the Indian tribal group as considered in Chapter 2. Pressure would then be generated to remove or contain the Indian groups.

In this early phase the population was unstable, transitory, and dominated by men. Everything was of a temporary nature. The end of this phase came in two ways: either the ore body proved to be promising and a boom occurred, or the strike played out and the population drifted away. The following is a breakdown of characteristics of this phase in the evolution of the settlement and utilizes the four identified variables. Figure 7 illustrates an incipient Colorado mining camp.

1. Mining methods during the incipient settlement phase focused on placer mining and simple lode mining. One-man or two-man operations were most common and required little outlay in the way of equipment and money. Placer mining consisted of panning or use of the rocker or long tom. Lode mining was probably shallow and concentrated on ore bodies that could be treated by use of an arrastra or other similar crushing technique. Compared with other areas of the West, placer mining in Colorado was limited and played a minor part in the development of the region (Paul 1974:116).
2. Commerce was limited to basics such as staple food items, basic clothing, mining equipment, and liquor. A multitude of operations were handled under one roof, which was commonly canvas.
3. Architecture was dominated by haphazard, temporary shelters. Canvas tents, log cabins, or a mixture of both was most common. A sawmill was commonly lacking and this frequently precluded frame structures. A total absence of town planning, amenities, or organization was evident.
4. Transportation was limited to foot, horse, or mule traffic with occasional wagons. Items of portable material culture were, in comparison to later stages, fewer in both quantity and diversity. Roads were hazardous and unimproved. Seasonal inclement weather would often cut off roads or trails into the budding camp. At this point there was little incentive to undertake the labor intensive task of keeping the roads clear.

### **Camp Phase**

If an initial mining settlement survived its first season or two and if the nearby ore bodies proved profitable, then the area experienced a boom that resulted in the creation of a nascent urban community. Relations with the Indian population would also enter a new phase as the Euroamerican population increased and competition over land intensified. A period of administrative stabilization, as discussed in Chapter 2, would take place where pressure from the Euroamerican population would result in the containment of Native Americans on reservations and the opening of previously Indian-owned land (Baker 2004a; Leacock and Lurie 1971). Toward the end of this camp phase, if the area matured into a true urban community, total removal of the Indians would be demanded. As the population swelled, the social makeup changed. Although the camp was still heavily male, more women began to appear. Although to a large degree the community was still highly transitory, signs of permanence emerged.

The characteristics of the camp phase included the following changes:



1. Mining methods became more complex as techniques improved and the nature of the ores proved more difficult (Twitty 2002). Stamp mills and the use of mercury for extracting the gold became common. Lode mining replaced placer mining. Partnerships and small mining companies began to appear, but most of these remained locally owned and operated.
2. Commerce became the essential element in the community. Although the merchant might still operate under a single roof, his selection of goods became larger and broader. He also tended to serve a variety of functions. During this phase a premium was placed on two types of enterprises: boarding facilities and saloon/dance halls/sporting houses. These appeared in disproportionately high numbers to meet the needs of the large number of transient, mostly male miners and visitors. Newspapers also tended to appear during this phase.
3. Architecture/town planning during this phase was marked by the appearance of sawmills and subsequent frame structures. Emphasis was placed on easily constructed, unadorned buildings. Vernacular and the well-known false-front Western vernacular were the predominant architectural styles. Town planning emerged in its earliest stages along with an interest in basic government amenities such as law enforcement and fire protection.
4. Transportation began to come into its own as the mining camp required more and more supplies. The portable material culture inventory thus grew in terms of quantity and diversity. Supply centers – towns usually some distance from the mines – began to appear. These centers also followed the basic evolutionary development exhibited by the mining camps. Freighting companies put in an appearance and with them came the demand for better roads. Toll road companies flourished and with them came improvements such as leveling, filling, and widening. As this phase ended, usually when all readily accessible, easily processed ore had been mined, a general depression set in. This depression could lead to abandonment of the area or, if it survived, settlement development moved into the next phase.



La Plata City, ca. 1880s, as it was evolving into a true mining camp. Photo from the Duane Smith Collection, used with permission.

**Figure 7.** The incipient mining camp of La Plata City, La Plata County, Colorado, in about the 1880s.





Main Street of Gunnison, Colorado, in Gunnison County, looking south. The date is probably around 1884 after Gunnison had evolved to become a true “town.” Photo from the Steven G. Baker Collection, used with permission.

**Figure 8.** Main Street of Gunnison, Colorado, ca. 1884.

### Town Phase

If a mining camp survives the depression following the end of the frenzied boom of the camp phase, then it was likely to develop into a more stable urban mining town. This phase is marked by a significant influx of outside capital, development of support industries such as smelters, and the social makeup of the community became more complex. At this point it took on all the trappings of an urban center. Figure 8 illustrates a settlement (Gunnison) that had evolved to the town stage. The railroad had arrived in 1881, and Gunnison had witnessed its florescence of the Victorian cultural horizon as may be readily seen in its architecture. Again the previously described four variables help delineate the characteristics of this phase:

1. Mining became complex corporate operations. As ore became more difficult to process, it often required complicated and expensive refining. Mining operations were consolidated and expanded. As the mines became deeper, the problems of flooding and ventilation required further development. Labor and management divisions became sharper as an influx of immigrant laborers began. Large capital investments were necessary, and these came in large part from eastern and European sources.
2. Commerce became more diversified. Specialized stores began to replace the familiar general store. The variety of merchandise also expanded as luxury goods and other nonessential items began to appear in vastly greater amounts and diversity. The material culture of the town phase eventually came to represent about all of the general consumer options then available in the United States, as represented by Sears or Montgomery Wards mail order catalogs of the period. More expensive, elite goods would have also begun to appear among the wealthier households. Cheaper transportation, provided by railroads, also aided the expansion of the business district and the amount and variety of material culture. Finally, where conditions allowed, a local market in foodstuffs began to take

advantage of potential created by a growing population. Available foods would be quite varied and might include many imported items.

3. Architecture/town planning became more elaborate and pretentious. In many cases stone and brick replaced wood as a desired building material. Architectural styles common in the East began to make a stronger appearance as architectural pattern books began to arrive. The most common styles for Colorado were Italianate, Gothic Revival, and Queen Anne. One distinctive feature of mining towns during this period was the appearance of cast-iron fronts for buildings. The relative low cost, durability, and ease of assembly made these fronts very attractive to the mining towns. Town amenities, including water and gas systems, telephone and later electricity became standard features. Along with these amenities, but more difficult to determine through physical examination, was the establishment of police and fire protection. Social changes within the community were also evident in the architecture of the town. Schools and churches appeared, indicating an outward sign of progress and acceptance of traditional values. Fraternal organizations of various types flourished with their own facilities and offered a variety of services to their members. Theatres and opera houses were built as citizens began to support these types of entertainment. Finally, the percentage of hotels, saloons, and visitor-related establishments declined, indicating a shift away from the transient orientation of the earlier periods.
4. Transportation probably made the most dramatic change and in many ways helped to precipitate change in other areas of the community. Cheap and efficient transportation became important as mines began to process marginal ores in large quantities. This development usually required access to a railroad (Baker 1983a, 1999c, 2000b). Furthermore, a railroad boosted the business district as goods became cheaper to deliver. A railroad also promoted development of surrounding areas by providing relatively cheap shipping between rural supply points and the markets created by urban mining towns.

The town phase was usually the terminal phase of Victorian urban development. In general, the end of Victorianism as a viable cultural force in America was the end of World War I. Following this conflict, urban areas either deteriorated into economically depressed communities or continued to evolve into urban cities, such as Denver (Carrillo, Pearce et al. 1993:30-50; Leonard and Noel 1990; Nelson et al. 2001). These grew to maturity within an entirely new cultural context that followed the end of World War II. This extremely complex cultural system (Figure 6, page 156) has been referred to, in relation to archaeology, as the Modern Cultural Profile with its Synthetic Cultural Tradition (Baker 1983c, 1986; Baker, Black et al. 1980:149). Its evolution destroyed nearly all surviving vestiges of Victorian culture in America. Except in rare, rather eclectic but important instances, such as the modern landfills considered by Rathje and Murphy (1992) and the various essays in Hart and Fisher (2000), there is little tangible archaeological potential present in the physical remains of settlements associated with the modern temporal and cultural framework.

It is quite difficult to begin evaluations and archaeological studies of settlements or any other kinds of historic sites without first clearly identifying and distinguishing one from the other in terms of function, evolutionary development, and both temporal and specific cultural contexts, such as those outlined in the previously outlined model.

## **Identifying and Evaluating the Archaeological Significance of Victorian Mining Settlements**

Despite their obvious archaeological nature, Colorado's Victorian mining settlements have, along with many other types of historic sites, seldom been regarded as archaeological resources even by most professional archaeologists (Baker 1978a:12; Buckles and Buckles 1984; Horn 1992:164; Wedel 1964). They also have seldom been recognized as archaeological districts that conformed to the boundaries of the old mining districts. The only known efforts in such directions were those of Sullenberger and Baker in the original recording of the Red Mountain and Sneffles mining districts (Sullenberger 1981) and the more recent

work at the Cripple Creek Historic Mining District (Sweitz 2004, 2005). Accordingly, such sites have generally not even been recorded as archaeological resources when they have been otherwise highly regarded as important sites and districts on the basis of historical or architectural values. Many have been designated as National Historic Districts on only these merits. It is as if their attending archaeological records were either nonexistent or wholly unimportant.

The actual values of Victorian mining settlements as archaeological resources have thus seldom been evaluated, let alone tested through intensive study of their physical remains. This deficiency exists despite the successes of Hardesty (1988) in Nevada and many claims about their importance (Hardesty and Little 2000). Most assessments of their archaeological significance have been based on varying levels of speculation. Even among well-informed archaeologists, these values are still largely undetermined, despite the fact that because of their popularity, numbers, and visibility, they can be considered Colorado's quintessential historical archaeological sites. Authors Baker, Carrillo, and Horn (personal communications 2006) agree on the ongoing difficulty of extracting truly meaningful information from the interesting and compelling mass-produced Victorian material culture. Church also emphasizes this in her introduction. It is truly a Herculean issue and one that has to successfully be dealt with if archaeologists are to ever effectively wring the maximum contribution potentials from these archaeological resources. Some suggestions for and examples of how researchers might begin working to achieve this are offered in the closing portion of this chapter.

## **Identifying Victorian Mining Settlements in the Archaeological Record**

As discussed in Chapter 3, Settlements, it is possible to identify different categories of settlements that are plentiful and may be encountered in cultural resource inventories or otherwise be of interest to archaeologists. Some of these will most likely ultimately need to be formally evaluated in terms of National Register eligibility, and, if the Section 106 process (see Hardesty and Little 2000) works as fully intended, perhaps even be subjected to full-scale archaeological data recovery. The only way this might be realized under Section 106, however, would be if substantive contribution potentials to Victorian period scholarship could be demonstrated as being worth the cost. Data recovery might also be done for purely academic interests, or conceivably in regard to heritage promotions, such as in the classic and well-known undertakings at sites such as Colonial Williamsburg or Jamestown. Other settlements, despite antiquity and the presence of large amounts and diversities of archaeological remains, may prove to be poor archaeological resources.

Many old mining settlements did not survive and today show minimal aboveground traces of their former presence on the landscape. These settlements can still contain vast subsurface archaeological deposits. Mining settlements that did survive frequently still maintain much of their Victorian architectural character, often in its original historic fabric. These settlements, too, despite varying degrees of overbuilding, also may maintain intact material culture records in archaeological deposits. The material culture database formed by the combined architectural and archaeological data of the extinct and surviving settlements can reflect the Victorian profile as it includes key issues such as ideology, organization and use of space, sociopolitical structures, and ethnicity. A few of these surviving old settlements, such as the modern city of Denver, form Colorado's urban archaeological resource base (Carrillo, Pearce et al. 1993; Nelson et al. 2001) discussed in Chapter 2. Urban archaeology is a related but arguably different theme that speaks primarily either to doing archaeology of all kinds within the urban environment or attempting to study the evolution of a state's great urban centers (for example, Ayres 1990; Henry and Garrow 1983; Nelson et al. 2001; Staski 1984, 1987b; Yamin 2001).

How does one identify and distinguish the kinds of Victorian mining settlements from the other types of settlements in the archaeological record? It is quite difficult to begin evaluations and archaeological studies of settlements or any other kinds of historic sites without first clearly identifying and distinguishing one from the other in terms of functional, temporal, cultural, and evolutionary contexts. This kind of sorting becomes a classic form of site triage. The following are some additional considerations.

- Most of Colorado's non-Native American settlements were established within the Victorian period, and most were established by Angloamericans who carried the Victorian cultural tradition. The

primary exception to this rule is in the old Hispanic core area of the southeastern portion of the state, which was settled by people coming northward from New Mexico who reflected cultural traditions that were not Victorian but instead Colonial New Mexican as considered in Chapters 3, 5, and 6.

- It should not ever be too difficult to determine if one is dealing with a settlement that is associated with either the urban or rural subtraditions. This determination depends primarily on the geographic setting and general history of the settlement and region. The latter is quite commonly available by consulting routine historical source materials. In Colorado's historic mining regions it is usually quite easy to determine from historic sources and the cultural landscape that a site is associated with mining. Nearly all the Victorian period mining settlements were founded by Angloamericans who carried at least some elements of the Victorian cultural tradition. Thus, in mining settlements of the Victorian period, one is almost always dealing with sites reflective of American Victorian culture. This is usually clearly evident in the mass-produced Victorian period material culture, architecture, and manner of use of space evident on the sites.
- Historical source materials combined with archaeological field observations can usually indicate what time frame and level of evolutionary development a settlement represents. Such sources can also usually identify the settlement and often provide photographic images of it. The previously summarized model suggests what the physical attributes of a settlement say about its level of evolutionary development. In addition to historical source materials, general analysis of historic artifacts can commonly be relied upon to establish date ranges for various components. This is a common, everyday historical archaeology exercise. Both Baker (1978a) and Horn (1992) have spoken directly to the processes of doing historical archaeology and assessing the significance of historic sites in Colorado. Deagan (1982) and Wood (1990) have discussed the methodologies of historical and ethnohistorical research.
- In addition to looking at the physical integrity and nature of its ground context, any evaluation of the archaeological significance of a settlement must consider its formal taxonomic identity relative to other mining settlements. It must be emphasized that a settlement's taxonomic identity includes not only its level of evolutionary development but also its general temporal placement. One can encounter settlements in similar evolutionary stages that are dramatically different in terms of temporal placement though still within the general Victorian period. This dual line of evaluation can have a huge impact on judging site significance, as has been demonstrated in Colorado by Baker (1999d; 2000b) relative to mining-related sites in the San Juan Mountains near Silverton.

Despite only a few years of time difference, sites from the 1860s through the 1870s often stand in stark contrast to those from the late 1880s and 1890s, in particular, when dramatic technical advances substantially altered their material culture. These differences are quite important in dating sites, as discussed in the popular guidebook to mining camps by Beth and Bill Sagstetter (1998) and in the early work of Charles Hunt (1959). Eric Twitty (2002) has cogently discussed the changes in the technical aspects of mining. These temporal differences in the material culture assemblages may well one day prove to greatly affect site significance. This phenomenon is somewhat similar to the great differences in the material culture of pre and post-Civil War contexts.

- Site evaluations must ask whether any special ethnic, social, or other considerations further obviously distinguish the resource from others within the general typology. As an example, if a settlement is determined to have been a single component mining-related settlement representing the camp stage that operated only for a few years in the 1870s, it would be a comparatively early site as well as an ephemeral one. If it were further determined or suspected to have been primarily occupied by Italian immigrant workers and was in good condition and had integrity in terms of ground context, it would likely stand in stark contrast to the remains of a settlement that had evolved from an 1870s camp to a full-fledged mining town that still exists. Even before considering its actual contribution potentials as an archaeological resource, it is necessary to precisely determine its multiple-line taxonomic identity. Only then can an evaluation of its contribution potentials be attempted through comparison to other

Victorian settlements. Such identification is the very first cut in determining archaeological significance (Baker 1978a:24-25; Hardesty and Little 2000).

## **Evaluating the Archaeological Significance of Victorian Mining Settlements**

Eligibility for the National Register is generally determined by a site's archaeological significance weighed against its integrity. A number of considerations go into determining both significance and integrity.

Once the kind of settlement and its time frame and taxonomic position have been determined, significance can be further considered by asking whether a particular settlement seems to be representative of a common category of site from a particular time frame or is it an aberrant, rare, or otherwise unusual form. Unusual settlements are not necessarily significant resources. Are there many of these kinds of sites? As considered by Hardesty and Little (2000:71), rarity can be a factor of low visibility. Some "rare" sites may be of a type that was once plentiful, but are seldom discovered due to natural site formation processes or destructive post-depositional processes. Much of this necessary information will come from historical research and simple observation during inventory. Does it appear to be a single component, short lived, or catastrophically sealed site or a multiple-component site that survived for many decades, witnessed multiple functional uses, and was overbuilt on numerous occasions? As a general rule of thumb, single-component sites have long been considered by archaeologists to be the most valuable and significant resources in both the historic and prehistoric contexts. They are very highly regarded (Baker 1978a:26-27; Horn 1992:162). Church also considers the subject of site eligibility in Chapter 1.

If it is determined that a site is a good representative of a particular stage of settlement evolution from an important or underrepresented time period, then one must judge its integrity as measured by its ground context and condition and make still further cuts in determining National Register eligibility. Sites should also be considered in terms of the soil matrix in which they are buried (Baker 1978a:27). In the Colorado mountains, for instance, sites are commonly buried in heavy rubble of both a natural and manmade nature. Sites established in heavy rubble or river cobbles may have poor or virtually no feature delineation left intact compared with sites that might be entombed in more stable soils, such as clays, as in the case of portions of the settlement of Dallas in Ouray County (Baker 1977a, b, 1978c, 1983d) or the Whiskey Row in Prescott, Arizona (Baker 2005d; Foster et al. 2004). The latter typically retain good feature delineation. In many cases, sites in the high country near extensive mining operations might be very poor resources because of the heavy rubble site matrix that is commonly present along with the continual disturbance of the ground context which characterizes mining operations.

In Colorado many of these old settlements have also been damaged by natural forces, such as scouring floods, vandalism, subsequent overbuilding or razing, or any number of other natural or human-caused actions that would compromise archaeological integrity. In determining integrity it is therefore wise to determine at an early point if it is likely that a site has been damaged by such activities. Despite the fact that a settlement may once have been historically prominent and may have had much archaeological potential, it may have become a badly compromised resource that is no longer capable of yielding important information. Issues of exactly this kind, together with restrictions on which part of the site they could investigate, complicated Carrillo and his colleagues' pathfinding efforts to access the early record of the Tremont House in Denver (Baker 1996c; Carrillo, Pearce et al. 1993). There they could not access the area where the early privies would have been located (Richard Carrillo, personal communication with Steven Baker 2006). But even if the targeted component cannot be reached, there may still be substantial quantities of historical information, artifacts, stratigraphy, and architectural features present. In such cases multiline historical studies of the settlement may yield far more information than archaeology ever could, as Jim Deetz so cogently spoke about in relation to the limitations of historical archaeology (R. Friedman 1983). As Deetz pointed out, it is important to critically distinguish between such studies and traditional archaeological contributions and ask why the work is being undertaken and not ask questions of archaeological data that can better be answered by historical studies.

In the Victorian period the very nature of the archaeological record began to change substantially with the advent of indoor plumbing and centralized rubbish collection and disposal. These amenities very can have very serious consequences relative to archaeological potentials and site significance. Although quite a few settlements, such as the mining community of Lake City, Colorado, relied upon pit toilets and apparently localized trash disposal well into the twentieth century, other communities witnessed the advent of public sewer lines and indoor plumbing rather early. Even when pit toilets were still in use in urban contexts, they were commonly cleaned regularly and their contents hauled away (Baker 1995d; Roberts and Barrett 1984). This practice was quite noticeable in the yet unpublished long-term excavation program of Baker at the Vanoli site in the old Red Light District of Ouray, Colorado (Baker 1972a, 1983b; Blee 1991:199-202). There the fill of some of the outhouses from the very earliest components of the red light district had been cleaned by professional privy cleaners. This effectively destroyed a portion of the earliest and most important portion of the archaeological record of the site (Versaggi 2000; Wheeler 2000). The very Victorian notion of order and cleanliness being next to godliness means that the residential sites of more affluent and other highly "Victorian-notioned" people were often quite clean, with yards being kept free of rubbish heaps and with indoor toilets replacing pit toilets at the earliest possible time. Such cleanliness would mean there might be very limited archaeological potential at such sites and that they might best be evaluated in terms of landscapes, the use of space, and particular site-specific interests, such as restoration- or reconstruction-oriented data acquisition.

A historical archaeology database for Colorado's Victorian settlements simply does not yet exist. The full potential of the historical archaeology of the state thus cannot be determined until such a database is created. Some slow progress in understanding the late period historical archaeology is being made in the region by longer range programs such as first envisioned by Baker (1978a) for Colorado, Don Hardesty and his colleagues at the University of Nevada and Rick Sprague at the University of Idaho. Hardesty's views on evaluations of significance are embodied in his and Barbara Little's (Hardesty and Little 2000) advocacy of the importance of the archaeology of the "modern world." Despite the general guidelines they offer, it is still extremely difficult to come up with any more precise guidelines for evaluation of Victorian settlements at this time, and they do not seem to offer or advocate them. Buckles and Buckles were openly skeptical about attempting to develop hard guidelines on the subject and noted that "knowledge concerning historical archaeological resources in Colorado is presently inadequate and it would be premature to recommend criteria for evaluation" (1984:105).

The situation has changed remarkably little in Colorado since Buckles and Buckles (1984) wrote. Their view was similar to that of Baker (1978a:24) and some of his colleagues who were polled on the topic in the late 1970s during their preparation of that first summary of historical archaeology in Colorado. At that time there was something of a very idealistic notion among historical archaeologists that all historic and other archaeological sites must be saved. Hardesty and Little (2000:62-75) have covered the subject of assessing significance of modern era sites quite well in a generic fashion. The reader is referred to their guidebook and the other chapters herein for further considerations of significance, context and research boundaries, research objectives, and documents and oral testimony. Critical aspects that Hardesty and Little discuss as elements of significance are age, time span, uniqueness, visibility, and survivability of any given resource. These elements are either embedded in or crosscut most of the considerations made here and are still under active discussion (i.e., Baker 2006).

## **Building a Historical Archaeology Database for Colorado**

The few projects undertaken at Victorian period mining settlements in Colorado have focused only upon examination of small portions of them. These projects include Buckles's work on the Crest of the Continent (1978) and in Ten Mile Canyon (1976), Baker's efforts at the Vanoli site in Ouray (Baker 1972a; 1983b; Blee 1991:192-202) and the Corner Saloon in Lake City (Blee 1991; Huston 1977), Mary Ringhoff's work at Little Rome (2002b), and Curtis's (2001) testing of sites in Hinsdale County. Sweitz (2004; 2005) has briefly summarized the extensive investigation of the sites in the Historic Cripple Creek Mining District. Carrillo's and others' efforts at the Tremont House in Denver are also relative to the Victorian mining context (Carrillo, Pearce et al. 1993). Undertaking more comprehensive excavation of such sites is what is needed to

truly assess the significance of this specific archaeological resource base and its ultimate contribution potentials under Criterion D of the National Register. There are some critical considerations that must be born in mind in any discussion of Victorian mining settlements as "traditional" archaeological resources.

- Victorian mining settlements are substantial and very complex sites which can yield prodigious amounts of artifacts and features. They present themselves as classic and compelling archaeological sites which are readily amenable to excavation and study via classical archaeological techniques. This does not, however, automatically make them important and capable of yielding significant information or eligible for the National Register.
- In order to place these sites in archaeological perspective it is important to bear in mind that even small ones can far surpass the major Colonial Period settlements along the eastern seaboard of the U.S. and Canada in terms of size, complexity, and material data returns and they can do so on an exponential basis. It was, of course, these Colonial sites that were the birthplaces of historical archaeology. It required generations of archaeologists working over many decades to individually explore these sites by traditional methods. However, from these sites and their vast quantities of material culture arose nearly all of the Colonial "nuts and bolts" database and classic method and theory of historical archaeology.
- Most of the colonial settlements were excavated in order to obtain data that would be useful in constructing interpretive developments directed toward enhancing heritage tourism. They were not funded primarily as academic research programs. Such research was normally a "spin off" from their primary purposes. This kind of archaeology peaked some years ago and, except for a few ongoing programs commonly involving education, is seldom seen today.
- With the demise of these large-scale excavation programs, little attention is now being given to developing and refining analytical approaches to the material culture of settlements. The analytical tools largely remain as they were left some decades ago and are mostly relevant to the Colonial context. The "nuts and bolts" aspect of the profession has fallen to the wayside and has been largely replaced by a form of historical anthropology focusing on historic places but not on the material record. There has thus been little or no movement in interpretive archaeological approaches to historic material culture in some decades, as discussed by Jennings (2005) and South (1993; 2005).
- Meaningful advances and contributions to Victoria historical archaeology method and theory will have to be drawn from sustained long-range investigations of entire settlements, just as were undertaken at the Colonial ones (Hardesty and Little 2000). They will depend on effective use of both empirical (South 1977a, b, 1993) and intuitive humanistic (Deetz 1983, 1988; R. Friedman 1983) interpretive approaches to traditional archaeological data. Practitioners must be capable of working from both directions and understanding and envisioning how such contributions might be derived from a resource during the evaluation stage.
- Quantitative analytical approaches require huge datasets to be effective even in the Colonial context. In the Victorian context they will require data sets of immense size, in the hundreds of thousands of items. Such data sets must also be meticulously retrieved and be comprehensive of the entire material culture assemblage. To be useful they need to be drawn from single-component sites or components reflecting limited functional uses. It is to be noted that from all the Colonial data sets that had been obtained along the Eastern Seaboard, South was able to utilize only a handful in his pioneering quantified work (1977b). This is because most had not been excavated with enough methodological rigor, or collections had not been appropriately cataloged.

There has, with the notable exception of the Ludlow Project discussed in Chapter 3, been only one other sustained long-term traditional archaeological excavation program of Victorian period settlements in Colorado. That program has been built around the long-term project at the Vanoli site (5OR30) in the old, town level Victorian mining settlement of Ouray in Colorado's San Juan Mountains (Baker 1972a, 1983b;

Blee 1991:192-202). This program is focused on Victorian period sites in west-central Colorado. In presenting a comprehensive overview of historical archaeology in Colorado, it is appropriate to briefly acquaint the reader with some of the efforts undertaken in this yet unpublished archaeological effort over the past 30 plus years since they are not discussed elsewhere in this volume. The Vanoli site program also serves as an example of how empirical interpretive approaches such as those pioneered by Stanley South (1977a; 1977b) can be adapted and utilized in the study of Victorian settlements. Quantified methodologies remain the only alternative to simple humanistic and intuitive interpretations of material archaeological data. Jim Deetz was the leader in advocating humanistic approaches and took issue with much of South's efforts. He still recognized the importance of quantitative approaches and stressed that "pattern recognition, of course, is dependent on quantification, so we must count" (Deetz 1983:27). As introduced here it is, however, just how counts are made and what can be done with those counts that are critical in reading the material archaeological record.

The Vanoli site program was commenced by the lead author in 1970. The long-term locally focused research approach to Victorian archaeology has become important beyond the focus on the Vanoli project and has included a number of other sites. The Vanoli project was made possible because there was both opportunity and need to salvage what was then a pristine site covering nearly an entire city block. Since it was privately owned there were no legal mandates requiring that the work be done. This block contained a variety of archaeological components that were all thematically related to a huge red-light or sporting district from the period ca. 1876-1915. This site contained the archaeological signature of a major subculture of the American Victorian tradition. The site then still maintained a high degree of integrity in its complete and uncompromised architectural, archaeological, and historical record, including a strong oral history component. This is precisely what Foster and his colleagues (Foster et al. 2004) attempted to do at Prescott, Arizona, in a very rapidly completed research program of uncertain success (Baker 2005d). It also very effectively addressed the kinds of issues considered in the recent collection of archaeologically focused essays entitled *Sin City*, edited by Donna Seifert (2005).

In attempting to retrieve this signature of a classic and major Victorian cultural institution or subculture (Chesney 1970; Egan 1904), the Vanoli project was intended to advance the quantified approaches first developed by South (1977b), with whom Baker had worked at the University of South Carolina. Fieldwork was conducted intermittently at the Vanoli site from 1970 through 1983 with the intention of fully documenting the site before anticipated future land use changes could destroy it. The research design for the archaeology component evolved with the project. The analytical techniques of South (1977a; 1977b) and Roderick Sprague (1981) were combined and recast for express quantified use at the Vanoli and other sites in the Victorian context by Baker (1978d), Bartolini and Baker (1977) and Baker and Nelson (1984).

The comparatively massive excavation program at the Vanoli site ended with the successful proactive salvage of the site. The entire artifact assemblage of far in excess of 100,000 artifacts has been partially quantified and analyzed. The artifact assemblage and overall data set are uncontaminated and very tightly bound to discrete temporal and cultural units associated with the targeted Victorian sporting subculture. The initially defined quantified signature for the site and other key findings were presented at the 1983 SHA meeting in Denver (Baker 1983b). The site and summarized assemblage of its artifacts from particularly fine-grained contexts have also been discussed by Blee (1991:iv, 179-208), who considers them to be a particularly rare data set.

As part of the broader sustained, yet intermittent, long-term program, the quantified methodology has also been utilized by Baker at a few different settlement sites on the Western Slope, including the Corner Saloon in the mining camp of Lake City (Baker 1981b; Blee 1991:183-184; Huston 1977) and the 2nd Los Pinos Indian Agency (Baker 2004a), which was the first Victorian settlement in the Uncompahgre River drainage. The Corner Saloon was a workingman's establishment which completely burned just after Christmas 1912 and collapsed into its cellar with most of its contents. This conflagration sealed this component and helped to elevate its archaeological significance, just as a similar fire in Prescott, Arizona, had elevated the significance of the old "Whiskey Row" there (Baker 2005d; Foster et al. 2004). At the Corner Saloon it was possible to recover and quantify nearly all of the artifact assemblage that survived the fire. The

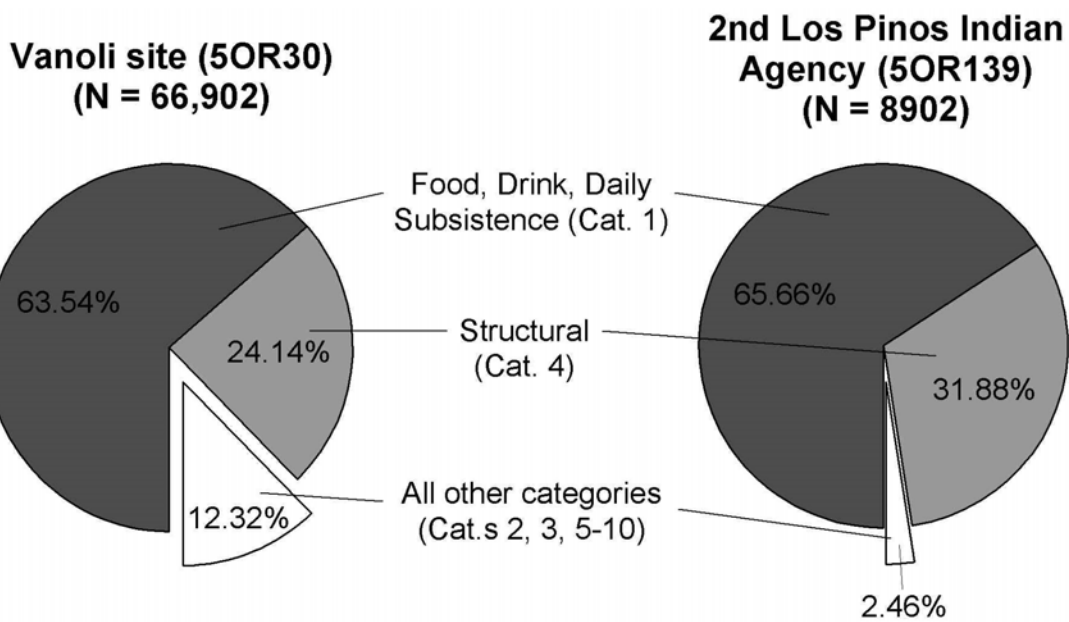


assemblage is notable for the presence of some true icons of Victorianism, including a statue of Little Lord Fauntleroy (Burnett 1886; Furnas 1969:608-619; Laver 1967:18-19) and some very Victorian “Tom and Jerry” and other toasting cups. Praetzellis and Praetzellis (1992) have recovered similar cups from the Victorian context and discussed them in regard to Victorian ideology. These are classic reflections of Victorianism that may reasonably be considered Victorian hallmarks. An interesting point about these items at the Corner Saloon is that they came from a site that is documented to have been a favored watering hole of immigrant Italian mine workers. This finding raises the question of just how different ethnic groups might have been influenced by Victorianism.

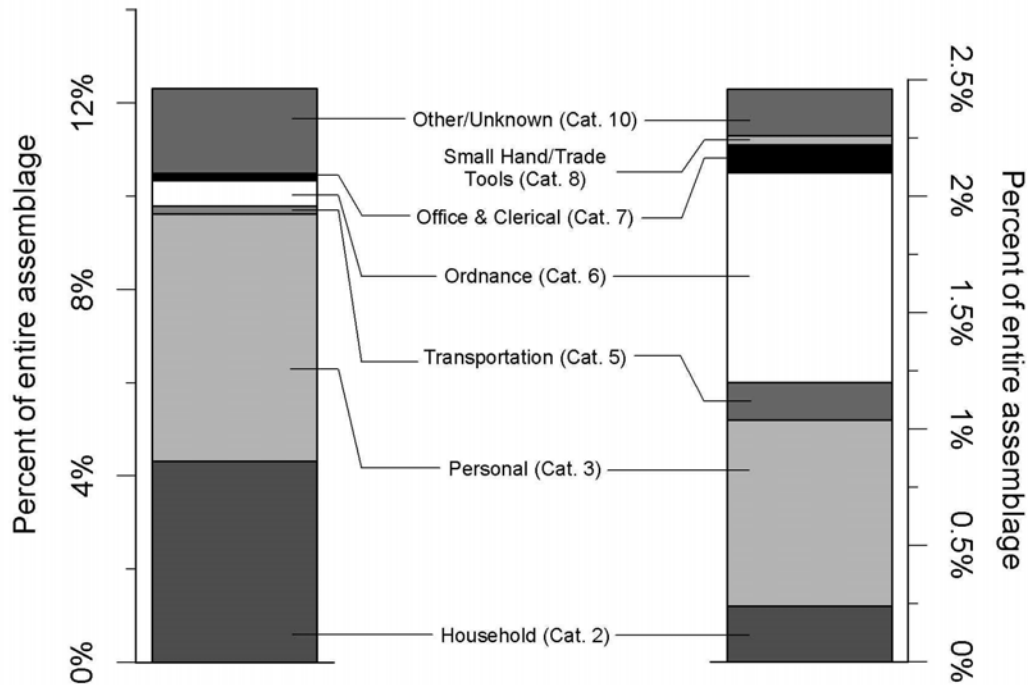
Quantified data sets have also been obtained from the site of Dallas, an 1880s mining camp in Ouray County (Baker 1977a, 1978c, 1983d; Buckles et al. 1986), and the coal-mining camp of Baldwin in Gunnison County (Horvath 1981). The 2nd Los Pinos Indian Agency (also known as the Uncompahgre Agency) was also a bastion of Victorian culture within the Ute Indian Reservation from 1875 to 1881. The agency was widely investigated in 2002 (Baker 2004a). Although the exploration and assessment work at the Los Pinos Agency emphasized the architectural evolution of the site, it did yield useful sets of both intuitive and quantitative data on the site’s portable material culture. These have been reported in Baker (2004a). Along with the data sets from the other mentioned sites, it helps to begin to understand the historical archaeological baseline of the Victorian site context in western Colorado. This site is important to the region of west-central Colorado because it was one of the first Victorian settlements established by whites in the Ute Reservation area of that part of the state. Its material culture assemblage thus represents some of the first Euroamerican commodities to be brought into the area. As an example of how the quantified approach can be used, the artifact assemblage was compared with South’s colonial frontier and kitchen artifact patterns (South 1977b) and the pattern from the Vanoli site. It was found to share similarities with them (Table 10; Figure 9). This information is offered here as examples of the kinds of basic questions that can be asked of historical archaeological data if the ultimate contribution potential is ever to be realized. Other than with Spude’s (nee Blee) substantial work in sorting mixed archaeological assemblages (Blee 1991; Spude 2005), Baker’s ongoing efforts, and the very limited effort of Ringhoff (2002b), it does not appear that quantified approaches to characterize artifact assemblages have otherwise been attempted relative to obtaining site signatures from Victorian period settlements in Colorado.

**Table 10.** Comparison of South's (1977b) colonial frontier and kitchen artifact patterns and comparable data from the Victorian 2<sup>nd</sup> Los Pinos Agency (5OR139).

Artifact Group	South’s adjusted colonial frontier mean, range, and predicted range			Los Pinos Agency %
	Mean %	Pattern Range %	Predicted Range	
Kitchen	27.6	22.7-34.5	10.2-45.0	66%
Architecture	52.0	43.0-57.5	29.7-74.3	32%
Furniture	0.2	0.1-0.3	0-0.5	0.25%
Arms	5.4	1.4-8.4	0-15.6	0.9%
Clothing	1.7	0.3-3.8	0-6.9	
Personal	0.2	0.1-0.4	0-0.7	Combined as 3 <sup>rd</sup> category “personal items”
Tobacco Pipes	9.1	1.9-14.0	0-27.1	
Activities	3.7	0.7-6.4	0-11.8	0.85%
<b>Total</b>	<b>100.0</b>			<b>100.0</b>



Diagrams of the relative proportions of Food, Drink and Daily Subsistence (Category 1), Sturtural (Category 4), and all other categories of artifacts from the respective sites.



Diagrams of the relative proportions of "All other categories" including Household, Personal, Transportation, Ordnance, Office and Clerical, Small Hand/trade Tools, and Other/unknown items. There are no Heavy Industrial items (Category 9) at either site.

**Figure 9.** Quantitative signatures of the portable material culture at the Vanoli site and the 2<sup>nd</sup> Los Pinos Indian Agency.

Richard Carrillo and his colleagues (Carrillo, Pearce et al. 1993) have been about the only other archaeologists in Colorado to attempt more detailed levels of quantified analysis of excavated Victorian period archaeological materials. The focus of Carrillo's effort was, however, largely statistical and site specific and did not attempt cross-site quantified comparisons. The study was internal to the Tremont House site, with goals of deriving a contextual framework for the site and involved a "consideration of each structure and feature with regard to its associated artifactual material" (Carrillo, Pearce et al. 1993:124). It is suggested here that the Tremont House during its heyday was a reflection of the evolved town stage within an urban archaeological frontier setting (Baker, Smith et al. 1980; Smith 1967a). The time frame for the site targeted by Carrillo and his colleagues, namely, when the site was prominent in Denver history (see Baker 1996c), places it in much the same context as the Vanoli site and the American Victorian culture horizon (Baker 1983a).

Baker's strategy of quantified approaches to the study of Victorian settlements is a direct extension of the earlier efforts of South (1977b) in the colonial context. There has to date been no better way of empirically dealing with them offered by any other archaeologist in North America (Jennings 2005; South 1977a, b, 1993, 2005). If the reader is to begin to understand this long-term research strategy and what has been accomplished to date it is necessary to explain the basics of the quantitative methodology on which this relies. Artifact counts for all analytical units of the sites are recorded on a "Historic Artifact Catalog Form" (Baker and Nelson 1984). This recording device was developed in part from experience with the early work of Stanley South and as part of South's methodology for quantified studies of artifacts from the British Colonial context (South 1977b) including work on the analysis of the artifact collections from the site of Fort Holmes at Cambridge, South Carolina (Baker 1971, 1972b, c).

This system of quantitative analysis recognizes 10 "Primary Categories of Analysis," which are subdivided into a host of consistently smaller individual "Subordinate Categories of Analysis." In respective order, the ten primary or coarsest functional categories are 1) Food, Drink, and Daily Subsistence, 2) Household Items, 3) Personal Items, 4) Structural Items, 5) Transportation, 6) Ordnance, 7) Clerical and Office Equipment, 8) Small Trade and Hand Tools, 9) Heavy Industrial and Transportation Tools and Equipment, and 10) Other and/or Unknown Items. These 10 categories each have many subcategories so that quantitative analysis can become very specific in developing comparative ratios between large or small classes of artifacts.

Table 10, above, attempts to compare the temporally distinct and far different assemblages of South's British Colonial frontier pattern (South 1977b) with that of the Los Pinos Agency, a classic American frontier site (Baker 2004a). The reason for the high number of "kitchen" items from the Indian agency is not yet fully understood but may be attributed to the vast amount of material goods that characterize the American Victorian cultural profile. A further explanation might be that subsistence activities relate to the most fundamental needs of people in a frontier setting. Artifacts relating to other activities were scarce, and they were hard to come by in precisely the kind of geographically remote context of the agency.

The graphs on the left side of Figure 9, above, illustrate the overall quantitative signature of the Vanoli site (5OR30) in the mature mining town of Ouray, Colorado. Graphs on the right side of Figure 9 illustrate the comparative quantitative signature of the Victorian 2nd Los Pinos Indian Agency (5OR139) in Ouray County, Colorado. For those who might also attempt to study quantitative signatures from Victorian period settlements, one important lesson has become more and more obvious over many years of study on the subject: that is, that sites of many different kinds all shared some common attributes that appear to show in the quantified assemblages. An example can be drawn from contexts where numbers of people lived or boarded. Comprehensive assemblages are showing that the functional categories of Food, Drink and Daily Subsistence (South's Kitchen Group) are all similarly quite high quantitatively in the Victorian context. This observation is exemplified in the quantitative signatures of the Vanoli site and the Los Pinos Agency, where this category represents at least 60 percent of the assemblages (see the upper pie charts in Figure 9).

At the Vanoli site only a substantial part of the massive collection has been processed. The following summary is drawn from collections made in the first years of excavation. The collection is, however,

believed to be quite representative of the site. Items from the first category of analysis (Food Drink and Daily Subsistence) included 42,510 objects representing no fewer than 5,979 individual ceramic vessels or other complete items (MVC = minimum vessel/object count), including whole bottles. This number was 63.5 percent of the total site assemblage, much larger than the 30 percent from the Little Rome site (Ringhoff 2002b) and very comfortably close to the 66 percent from the Los Pinos Indian Agency. This result is perhaps because the Vanoli site included a large a boarding/restaurant function that is not all that dissimilar to one at the Indian agency. Although it would be unwise in this limited peek at numbers to attempt too much interpretation of these contrasts, it is still possible to point out a few considerations. One is that at the Los Pinos Agency the entire assemblage had been badly broken up by the plow, thus greatly exaggerating the numbers there. This breakage did not occur at Little Rome or the Vanoli site.

Also, the latter were “open” public communities that anyone could visit or become a resident. They also lasted a much longer time than did the “restricted” government Indian agency. Both the Vanoli site and Little Rome seem to have survived long enough to witness the arrival of the Victorian cultural horizon with its massive influx and wide range of goods that came in with the railroad’s entry into the area (Baker 1983a). Finally, the Los Pinos Agency never advanced beyond an incipient frontier Victorian outpost where life was spartan, with a limited inflow of goods. In such a case one should reasonably expect a very heavy quantitative weighting in the category of Food, Drink and Daily Subsistence, but with a limited range of items.

Ringhoff’s (2002b) limited investigation at the mining settlement of Little Rome demonstrated a markedly lower representation of items related to Category 1, which she referred to as the “Domestic Category.” Although she enfolds a wider range of items into her Domestic category than in Baker’s Food Drink and Daily Subsistence category, it still, at 30 percent, was only about half that of the Indian agency and the Vanoli site. The explanation for this substantial difference may well lay in the nature of the site that she excavated. It appears to have been a family or small group residential site as opposed to a large boarding facility, as represented in the Vanoli site or the 2nd Los Pinos Indian Agency. Such considerations may also influence the findings of Blee (1991), who came to question some aspects of the quantitative approach, particularly when she seems to have been working mainly from the primary/first order of functional categories. Blee’s efforts were, however, directed toward the statistical sorting of functionally mixed artifact assemblages from multicomponent Victorian mining settlements.

The differences among Victorian sites with markedly different functional purposes seem to be showing in numerically minor differences in specific discrete artifact categories within secondary and tertiary levels of functional analysis (see the bar charts in lower Figure 9). At the Vanoli site, for example, where prostitution was a major site function, within the personal items (Functional Category 3) the subcategory of health and hygiene items shows a markedly elevated, though not numerically large, number of items. These items are fewer than 100 out of a sample universe of well over 100,000 items. These items are of an intimate personal sexual nature or are related to the prevention or cure of venereal disease, feminine hygiene, and/or contraception. This assemblage consisted wholly of durable parts of both men’s and women’s personal kits. Although not a large number at all, such items are seldom, if ever, seen in other contexts, and particularly not in any significant numbers. An equally obvious portion of the data set within the indulgences category relates to obvious drug usage (as opposed to the not so obvious use of patent medicines with narcotics in them), and the numbers are again quite small in terms of the total sample. Their presence is, however, believed to be obvious in contrast to other assemblages.

One simply has to readily deal with and get past the big and obvious functional categories such as Food Drink and Daily Subsistence (or South’s Kitchen group or Ringhoff’s Domestic group), which will commonly have a large number of items. One then has to look into the more discrete subcategories for answers and the roots of further questions to be asked of the data. Any cataloging system must have multiple subsets to be effective. The overall quantitative site signature looks like many others from early and differing functional categories wherein everyone involved still had to eat and drink, thus leaving very similar and quantitatively large signatures related to such activities. It is the bottles and ceramic table service that make up so much of Category 1. These items were available in large and diverse quantities, as attested to by the

mail order catalogs of the period. They commonly attract much attention in analysis because of their importance in dating sites and because they were very important in archaeological studies in earlier (pre-mass production) cultural contexts. Although they must be handled and evaluated appropriately, they can serve to distract the unwary archaeologist into placing too much attention there and not enough on other areas of the artifact assemblage. Although it is not possible to discuss these ideas further here, the foregoing discussion should serve to acquaint the reader with the kinds and complexities of quantitative analyses being used to study Victorian mining and other settlements in Colorado.

Beyond the Vanoli site's quantified signatures and combined intuitive artifact analyses, and its comparatively rich architectural and historical accounting, the further contribution potential of the archaeological assemblage will not be known until the final analytical work and report are complete. The Vanoli site work and other projects touched upon here are offered as local examples of what can be done with Colorado's Victorian settlements within the long-range research approaches envisioned by Baker (1978a) and Struever (1968) and recently acknowledged as necessary by Binford (1999). Such a program is still under way with success by Hardesty (1988), who quantifies archaeological data to calibrate or essentially determine the archaeological signatures such as the "Gold Bar Pattern." This practice is very reminiscent of South's (1977b) attempts at pattern recognition in the Carolinas and what Baker has been trying to do in Colorado. It is these kinds of programs that will ultimately truly test the potential of the Victorian period resource base as it is relative to both academic research and the implications of Criterion D of the National Register. Shorter-term site-specific projects can also contribute if thoughtfully designed and competently carried out at quality sites and with a clear understanding of how they may articulate with the larger quantitative studies of Victorian settlements. A great many more sites must be investigated with enough rigor to employ quantitative approaches. They will be the case studies that will allow for ultimately building a historical archaeology of the mining and other contexts in Colorado (Baker 2006).



## CHAPTER 5. ETHNICITY

**Richard F. Carrillo**

### INTRODUCTION

The intent of this chapter is to provide a general overview of the concept of ethnicity and its relationship to the historical archaeology of the state of Colorado. Although historically known ethnic groups are identified throughout the various chapters in the historical overviews and summaries are included in this chapter, only a minimal number of the historically known groups have been identified or associated with archaeological surface or excavated architectural and/or artifactual materials, in any detail, in the archaeological record of Colorado.

Initially, a theoretical basis is outlined to present a perspective that generally outlines the attempt to merge the ethnic attributes, through the use of both documentary and archaeology evidence, to historical archaeology sites. Next, an overview of the concept of ethnicity within the realm of anthropology today, and its relationship to archaeology, is presented. Third, the historical archaeology records on file at the Office of Archaeology and Historic Preservation (OAHP), Colorado Historical Society (CHS)'s Compass database program, are utilized for this undertaking. Fourth, examples of four ethnically identified historical groups (i.e., African-American, Italian and Italian-American, Japanese and Japanese-American, and Hispanic New Mexican) that have been examined in an archaeological context, are presented to support the observations that contribute to the creation of a complementary relationship between the historical record and the archaeological record. Within this context, the Hispanic New Mexican sites attributable to southeastern Colorado are explored in detail. The final section, a field methodology is outlined to address the issue of ethnicity and the importance of acknowledging all ethnic groups regardless of their cultural makeup, in addition to other social and cultural aspects, in the archaeological record.

A random review of the Compass database revealed many cases where arbitrary assignments appeared to have been carried out. Two main problems were noted:

1. In some cases, it appears that the OAHP categories are arbitrarily used when assigning ethnicity to a site. The recorder may feel obligated to use all of the OAHP categories, which results in data with mixed results (i.e., European, European-American, Hispanic, and Native American-Historic).

Minette Church also addresses the problems with this issue. She states:

Labeling as "Euroamerican" a site for which you have no specific documentation is making an assumption, and labeling it "Angloamerican" is an even larger one. The odds may be in favor of these designations, but there is no way to know they are accurate, absent other kinds of research. The most useful generic term where actual cultural affiliation is not known is probably "unknown historic" (Chapter 1, Introduction).

2. If site occupation dates are assigned, in several cases, the beginning dates are either too early or too late. A problem arises when trying to tally the types of sites present in terms of ethnicity. Church (Chapter 1) also addresses this issue. She writes:

The dating of sites in the database is often confusing, as people use generic dates seemingly based neither on historical documentation nor on artifact seriation or manufacture dates. On some forms, it is clear that the recorders simply guessed at dates and date ranges, sometimes falling back on the full range of regional historical occupation. Ideally, both documented occupation dates *and* artifact dates should be employed to determine date range, as some occupation evidenced by artifacts may be undocumented in the archives, or the documented dates can be incomplete or inaccurate.

The archaeological record, based on the majority of the sites assigned to historical ethnic groups, and as it relates to issues of ethnicity, is minimal (see Chapter 1, Figure 1). In this chapter, examples are presented of four diverse ethnic groups comprising nineteenth and twentieth century New Mexican Hispanics, African-Americans, and Italian-Americans, and twentieth century Japanese and Japanese-Americans. All address the issue of ethnicity in different and creative ways and with different results. They serve to clarify, along with earlier examples, that the issue of ethnicity in historical archaeology is one that is just beginning to be addressed in Colorado and that is an important research variable that needs to be addressed and standardized for all of the historical groups in Colorado.

A total of 1,799 historical archaeology sites exist in Colorado that have some ethnic identity attribution. Excluding the Native American-Historic sites-Unspecified, and the Native American-Historic sites, the most numerous archaeological sites are attributable to New Mexican Hispanics represented by a total of 384 sites. Additionally, the other non-Native American “ethnic groups” represented in smaller numbers are African-Americans, Chinese or Chinese-American, and, most recently, Italian and Italian-American and Japanese and Japanese-Americans. They are included in the historical archaeological record of Colorado and discussed below. Additional historical groups, on the other hand, (e.g., Scandinavians, Irish, English, Scots, Slavic, etc.) are not represented or identified in the archaeological record as specific ethnic groups. However, they are represented in the overall European-American group, comprising 8,250 sites (see Chapter 1, Figure 1). Although those sites were not included in this study because of their lack of specific ethnic identifiers, they are introduced historically and their archaeological potential is addressed in the context development.

Before proceeding, a word is necessary about the use of the terms “Euroamerican” and “Anglo-American” in this chapter. Church, in Chapter 1, makes the very correct point that the root “anglo” means English, thus an Anglo-American is someone whose origins or ancestry is traceable to England. It is as restrictive in this sense as German-American, or Irish-American, for instance. However, the term Anglo-American is often commonly (and erroneously) used synonymously with Euroamerican to mean someone whose origins or ancestry is traceable to any of the countries of Europe. In this chapter the word Anglo-American is used to mean not someone whose origins trace to England, but anyone of European descent *except those that would be considered Hispanic*. The term Euroamerican is taken to mean someone of European descent including both Anglo-Americans (non-Hispanics of European origin) and Hispanics.

## **Theoretical Framework**

Two complementary approaches for examining the archaeological data are addressed. The initial approach treats the settlement and subsequent developments based on previous research in a manner applicable to a general frontier system (Carrillo et al. 2003; Hardesty 1981:67-81; Lewis 1977:151-201; 1984). This provides a methodologically feasible and relevant perspective for examining the expected material culture from nineteenth and twentieth century homestead sites throughout Colorado. The second approach views the archaeological data from the perspective of ethnicity and anticipates the results produced by individuals representing two distinct cultural perspectives.

Hardesty (1981:70-71) argues for the examination of households as a unit of study from an ecological perspective in order to examine and understand similar adaptive processes in a frontier region. He states that the household is important on the frontier because it represents the fundamental unit of human biocultural



evolution. It acts as an interface between biological and cultural processes. Additionally, the household is an important unit of human ecology because it adapts its organization and composition to cope with environmental problems. It is a dynamic changing system representing a set of rules and strategies (Hardesty 1981:70).

The idea of the frontier is conceptualized as an ecological community under transformation because of internal forces, technological modification or competition, and external forces, such as colonization patterns from outside dispersal centers and progressive integration into regional, national, and international economic systems (Hardesty 1981:67). Significant research problems that can be developed are concerned with the identification, documentation, and exploration of key processes of transformation.

The household's visibility makes it a useful unit for study using both documentary and archaeological sources: transformations can be recognized, for example, by architectural modifications or other changes in patterns of material culture (Hardesty 1981:70-71). The important aspect in terms of this perspective is outlined below. Hardesty goes on to address the impact of competition upon the lifestyles of households on the frontier. He states that

the most pressing methodological problem is how to measure the intensity of competition with archaeological and documentary data... Once that has been worked out, the principal problems are determining if there is, or is not, evidence for increasing cultural diversity as competition intensifies, perhaps with some measure of variability among households that have been documented in the archaeological record. Especially important in this regard is the identification of ethnic households and their response to competition...(1981:73).

This approach, addressed by Hardesty (1981), is a discussion of the feasibility of examining historic sites as reflecting patterned behavior denoting sociocultural differences within the archaeological context. This issue is considered to be important due to the fact that there were two contrasting historic sociocultural groups occupying the region from the 1860s to ca. 1930. The Anglo-American sites can be examined extensively by using documentary data from various sources. That is not the case with the Hispanic sites because there are little historical or archaeological data available in the region regarding these types of sites. In specific regard to this issue, Deagan (1982:161) addresses the research

applied in the intensive public interpretation programs that characterize Anglo American sites...Such studies are quite often closely interrelated with processual concerns. Cross-cultural comparisons, for example, can reveal striking parallels and differences in the way by which groups adapt to relocation in a new environment and the mechanisms by which different groups become integrated into or excluded from American society.

Church also addresses this problem:

Both the fully historic and ethnohistoric contexts are profitably studied through archaeology but the ethnohistoric particularly so, since documents dealing with the groups are sparse and almost wholly indirect or secondary, produced by people outside the populations to which they refer. This latter circumstance does not make these documents uninformative, but clearly material remains of the people themselves constitute a more primary data source (2001:481).

Church (2001:41-42) continues by noting that researchers working in the Spanish Borderlands in California (Lightfoot 1995; K. G. Lightfoot et al. 1998) and in the eastern Spanish Borderlands are addressing research questions relating to seventeenth and eighteenth-century New Spanish population by using an integrated European and Native American past. This practice is more extensively noted in the following section, Acculturation and Creolization (Cusick 1998; Deagan 1983, 1998). Church writes:

Rather than presuming separations of people into discrete categories of "Spanish," "Indian," and "African," then looking for simple evidence of assimilation by use of trait lists, Deagan embraces the complexity of the interactions that made these northern New Spain settlements culturally unique....Like Lightfoot, Deagan is studying "creolized" communities (2001:41-42).

Through the use of archaeological observations, it is possible to define differences and similarities in the archaeological record that are attributable to different behavioral patterns in different sociocultural systems (Carrillo 1977:73-89; Clark 1987:383-395; Deetz 1977a; Otto 1984; Schuyler 1980; South 1977b; Spencer-Wood 1987). This is succinctly stated by Deagan:

South lays the ground work for, and comes tantalizingly close to, explicating a basic postulate for archaeological interpretation; that is, the way in which refuse is disposed of is distinctly and recognizably patterned for specific groups of different ethnic background or cultural heritage. Such a postulate, if demonstrated and verified, could have considerable value in the interpretation of ethnic differentiation in the archaeological record, including that of prehistoric sites. Additional archaeological evidence related to this issue, such as Carrillo's (1977) investigation of the German-American pattern, provides increasing support that the link between cultural heritage and patterned refuse disposal is indeed a valid observation. (1982:165)

The approaches described above adequately state why archaeological research is necessary to provide relevant information about the historic sites in southeastern Colorado that archival data cannot adequately reveal. Only by archaeologically examining the locations where these individuals lived and worked can we begin to understand aspects of the total relationships among the social, economic, ecological, and ideational constraints under which the historic populations functioned (Carrillo 1985:81-83; 1990a; Carrillo et al. 2003; Church 2001; Clark 2003).

## **THE CONCEPT OF ETHNICITY**

The following discussion represents a selected broad overview of the concept of ethnicity and is derived from the current anthropological and archaeological literature. "Ethnicity is social identification based on the presumption of shared history and a common cultural inheritance. There are three major approaches to ethnicity: the isolationist/primordial approach, the interaction/instrumental approach, and the power/domination approach" (Jones 1997:56-83). The major question in studies of ethnicity in archaeology is "What can be legitimately inferred about past ethnic groups from archaeological remains?" (Jones 1997:106-127).

This chapter provides a theoretical and methodological background for the examination of sites that contain ethnic contexts within Colorado. The concept of ethnicity has been defined within cultural anthropology; however, it represents an ongoing debated issue, and there is an array of theoretical perspectives about how ethnic groups are formed. Researchers have conducted studies in many fields; this overview addresses specific subjects that relate to the archaeology of ethnicity and discusses selected representative studies. The overview presents selected methodological, interpretive, and political concepts in an attempt to define ethnicity in the archaeological record. The concepts incorporate general overviews of concepts of ethnicity, race and nationalism, culture contact and ethnogenesis, ethnicity and material culture: acculturation and creolization. The review builds upon the recent works of Clark (2003), Church (2001), and others.

## **ETHNICITY! VARIOUS DISTINCTIONS**

The origin of the term *ethnic* is Greek and is derived from *ethnos* meaning "band, tribe, race, a people or a swarm." The English term has been in use since the Middle Ages. However, the term *ethnicity* is relatively new and first appeared in 1953 in the Oxford English Dictionary. (Baumann 2004b:12)

A dichotomy between "us" (the majority) and "them" (new immigrants or minorities) has developed in more recent colonial and immigrant history around the term ethnic. Recent variations of the term include

*ethnic identity, ethnic origin, ethnocentrism, and ethnicism* (Hutchinson and Smith 1996 cited in Baumann 2004b). According to Baumann

Ethnic identity or origin refers to an individual's ancestral heritage. Ethnocentrism is a belief that your cultural community or ancestry is superior to all others, resulting in dislike or hatred of any material, behavioral or physical characteristics different than your own. Ethnicism is defined as a "movement of protest and resistance on behalf of 'ethnics' against oppressive and exploitative outsiders" (Hutchinson and Smith 1996 cited in Baumann 2004b:12).

Ethnic groups have been defined in many ways. Ethnicity is a more complex term than race. Currently, there is dissent within anthropology concerning this perspective. Recent articles in the *Annual Review of Anthropology* discussing ethnicity include both race and nationalism. Emberling (1997) is one of several anthropologists who argue that state-level societies and ethnicity are implicitly linked. His focus is on Barth and his perspective on boundary maintenance as the best way to conceptualize ethnicity. He subscribes to the thought that a larger outside group must exist for ethnogenesis. He argues that ethnicity exists only in relation to state-level societies. He sees ethnic groups as an extension of kinship, mostly perceived but sometimes real. He subscribes to an essentially instrumentalist view and claims that ethnicity is "best seen as a process of identification and differentiation, rather than as an inherent attribute" (Clark 2003; Emberling 1997:306).

The impact of nation building influences not only ethnicities but also archaeological practice. In 1984, Bruce Trigger argued that most archaeology is nationalist, colonialist, or imperialist (1984). Philip Kohl (1998) brings the argument full circle by focusing specifically on how the identification of past ethnic groups props up nation-states (Clark 2003).

One of the earliest definitions relating to ethnicity, according to Barth, is that an ethnic group is generally understood in anthropological literature... to designate a population which:

1. Is largely biologically self-perpetuating
2. Shares fundamental cultural values, realized in overt unity in cultural forms
3. Makes up a field of communication and interaction
4. Has a membership which identifies itself, and is identified by others, as constituting a category distinguishable from other categories of the same order. (1969:10-11)

Hutchinson and Smith (1996:6-7) provide more recent interpretations of the constitution of an ethnic group, or *ethnie* (ethnos), that is composed not of one individual part but contains six relevant components that are outlined as follows:

1. All contain a common proper name that identifies and expresses the "essence" of the community;
2. The *ethnie* is given a sense of fictive kinship through a myth of common ancestry that includes the idea of common origin in time and place;
3. Shared historical memories of a common past or pasts that includes heroes, events, and their commemoration;
4. One or more elements of common culture that may not be specified, although usually includes religion, customs and language;
5. A symbolic link with an ancestral homeland that may not necessarily represent the physical occupation of the *ethnie*, as occurs with diaspora groups; and
6. Some sections of the *ethnie*'s population share a sense of solidarity.

Ethnicity has also been defined as a level of social stratification or social inequality that includes race, class, kinship, age, estate, caste, and gender. Three distinctions are provided that define ethnicity and race or class. Racial stratification is defined by outside groups as birth-ascribed based on physical and cultural characteristics. As racial categories are defined by outsiders, they are subject to inaccuracies and stereotypes. Ethnic categories are also ascribed at birth; however, the ethnic group itself normally defines its cultural characteristics, and, therefore, the classification can be considered more accurate since it is defined by the group. This position, however, does not make it immune to outside groups who can define and use the classifications to stereotype an ethnic community in negative and oversimplified ways. Class is different from ethnicity in that social class membership and ranking are based on attributes that are considered extrinsic (i.e., these may include income, occupation, education, consumption patterns, and lifestyle) to the individuals who make up the class (Berreman 1981 cited in Baumann 2004b:12).

## **ETHNICITY IN ARCHAEOLOGY – RECENT PERSPECTIVES**

The most recent overview of ethnicity and archaeology is provided by Sian Jones in her influential book *The Archaeology of Ethnicity* (1997). Jones (1997) offers a reassessment of the ways in which past cultural groups are reconstructed from archaeological evidence by using a comprehensive and critical synthesis of recent theories of ethnicity in the human sciences. Jones undertakes an analysis and summary of anthropological and archaeological theories that concern ethnicity and its application to archaeology. The results are used to determine how the subject of ethnicity has been investigated in the past. Her examination also provides a background for conducting future research. She develops a new framework for the analysis of ethnicity in archaeology. The framework includes important methodological, interpretive, and political implications to address the dynamic and situational nature of ethnic identification (Clark 2003). Additionally, a recent analysis of Jones's perspective is presented by Baumann (2004b).

Generally, three major terms relate to ethnic: 1) ethnicity, 2) ethnic identity, and 3) ethnic group, as outlined by Jones (1997). The definition she attributes to ethnicity is “all those social and psychological phenomena associated with a culturally constructed group identity.” Ethnic identity is defined as “that aspect of a person's self-conceptualization which results from identification with a broader group in opposition to others on the basis of perceived cultural differentiation and/or common descent.” An ethnic group is classified as “any group of people who set themselves apart and/or are set apart by others with whom they interact or co-exist on the basis of their perceptions of cultural differentiation and/or common ancestry.” (Jones 1997:xii)

Jones's main concern is the historical legacy of the culture concept. During the late nineteenth century race was the dominant mode used in conceptualizing human groups (Jones 1997:43). The literature from the Victorian era is ripe with references to the Irish race and the Italian race. Franz Boas and Tylor were two anthropologists who downplayed the use of racial concepts to define group differences and demonstrated that group differences were attributable to culture. In the 1960s and 1970s, the use of ethnicity as a way to conceptualize groups was similar to Boas's adoption of culture. It represented a method to avoid negative connotations of past categories, in particular the concept of tribe (Jones 1997:45).

Despite the twentieth century critique from ethnography, Jones argues that archaeologists still rely on the idea that there were, in the past, discrete, bounded culture-bearing units that occasionally bumped into one another. The culture historians took this idea back in time, assuming that archaeological cultures and human cultures overlap in an unproblematic way. Thus one could talk about groups like the “Folsom people” or “Hopewellian people.” This conception has been thoroughly critiqued, especially through the work of enthoarchaeologists, and yet archaeologists often think that some type of factor analysis of ceramic traits will let researchers draw the line between one ethnicity and another (Clark 2003).

Jones defines a very conservative idea of what can be said about past ethnic groups by using the archaeological record. Archaeological data is best suited to look at the praxis of ethnicity rather than

straightforward ethnic attribution. She argues that “there is no single unambiguous ethnic association [of monuments or assemblages] because no single social reality has ever existed” (1997:140). However, although ethnic expression across cultures is random, it is not so within a particular context. To properly approach ethnicity, researchers need to examine social interaction and distribution of material and social power between groups as well as social organization within groups. She proposes using a historical approach that employs two approaches: 1) looking at change through time and 2) using multiple data sets. Artifacts may vary with ethnic groups, but Jones argues such assertions need to be the subject of analysis, not a priori assumptions (Clark 2003; Jones 1997).

Jones provides an overview of how ethnicity is conceptualized by cultural anthropologists and presents her theoretical position. She argues that her approach corrects many of the inherent problems in past ethnic studies. Jones, using previous research, identifies two main schools of thought regarding ethnicity: the *primordialists* and the *instrumentalists* (Clark 2003).

The primordialists “believe that ethnicity is a natural phenomenon with its foundations in family and kinship ties...; ethnicity emerges out of nepotism and reproductive fitness, narrowing down the social concept into biological terms” (Baumann 2004b:13). The major critique of the primordialist view of ethnicity is that it represents a static and naturalistic perspective. Culture process and other social factors that comprise or alter ethnic communities are not considered (Baumann 2004b:13; Jones 1997).

The instrumentalists trace their genealogy to Frederik Barth and his groundbreaking *Ethnic Groups and Boundaries*. They insist that ethnicities instead represent identities created to serve the needs of both those within and outside the ethnic group. Instrumentalists believe that “ethnicity is socially constructed and people have the ability to cut and mix from a variety of ethnic heritages and culture to form their own individual or group identities” (Hutchinson and Smith 1996 cited in Baumann 2004b:13). According to Jones, the instrumentalists comprise two groups: “those who focus on the socio-structural and cultural dimension of ethnicity and adopt a more objectivist approach, and those who focus on the interpersonal and behavioral aspects of ethnicity and take a more subjectivist stance” (Baumann 2004b:13-14; Jones 1997:75).

Using the critiques of primordialist and instrumentalist theoretical perspectives of ethnicity, Jones utilizes a middle ground approach to bridge this debate by advocating a “practice theory” to archaeology in an attempt to address “the relationship between objective conditions and subjective perceptions” (1997:88). Jones follows Bourdieu’s definition of *habitus*. Habitus consists of “durable dispositions towards certain perceptions and practices (such as those relating to sexual division of labor, morality, tastes, and so on), which become part of an individual’s sense of self at an early age, and which can be transposed from one context to another” (Baumann 2004b:14; Jones 1997:88). Jones (1997:87-92) sees habitus as providing the “sameness” and strong emotional ties emphasized by the primordialists, similar to Hodder’s approach (1986). She also indicates that the structures of the habitus can be made explicit for use as ethnic boundaries, delineations that are fluid and created within a historical and political context (Clark 2003). Jones (1997:90) summarizes by indicating that the habitus is both multidimensional and varies in different social contexts. Ethnicity is considered in a constant state of change and reproduction within different social situations. Individuals are social agents that respond strategically in their pursuit of interests. Ethnicity is viewed as sharing dispositions of habitus (Baumann 2004b:14; Jones 1997:90).

Baumann, in his analysis of Jones (1997), concludes by stating that

overall, the underlying truth of ethnicity is that it is a product of self and group identity that is formed in extrinsic/intrinsic contexts and social interaction. Ethnicity is not the same as nor equal to culture. Ethnicity is in part the symbolic representations of an individual or a group that are produced, reproduced, and transformed over time. The question is, as archaeologists, can we identify these symbolic patterns in material culture? (2004b:14)

A third perspective is the power/domination approach. This view has emerged as a component of the general increased interest in historical analysis in anthropology. This movement, also known as Conflict

Theory, began when Marxist and neo-Marxist currents were in fashion and has continued to the present (Saitta and Duke 1998).

Ethnic consciousness includes not just a recognition of difference but, in addition, a hierarchical placement of different groups. The power/domination approach begins with the introduction of ethnic self-consciousness by the dominant group. Ethnic identity is used by this group to legitimize its privileges by claiming superior cultural or biological traits or by emphasizing certain cultural or biological traits as negative and then to apply them as a blanket characterization of the subordinate. The process of ethnic attribution (use of stereotypes to characterize oneself positively or others negatively) plays a central role in the power/domination approach group (Brumfiel 2004; Comaroff 1987).

Ethnic stereotypes, many vicious in nature, have a long history in the United States. These include negative notions toward Orientals, Jews, Mexicans, Irish, African-Americans, and Eastern Europeans, among others. The dominant white Protestant majority has exploited these stereotypes to refuse to extend equal treatment to members of the ethnic groups. Ethnic attribution posing as negative stereotyping is used by dominant groups to maintain an uneven playing field. Maintaining the negative stereotypes and the systems of inequality create a source for the rage and hatred associated with ethnic conflicts (Brumfiel 2004).

Not only do dominant groups maintain ethnic loyalties, but members of disadvantaged ethnic groups, who are the victims of negative stereotypes, also remain loyal to their ethnic identities. In the power/domination approach, an expectation is that subordinate groups respond to oppression by closing ranks. The groups view ethnicity as a symbol representing a shared predicament. With their common interest in resisting oppression, a collective commitment is generated into action to counteract the inequality (Brumfiel 2004).

In operationalizing the power/domination approach to archaeological remains, what would be the outcome in terms of ethnicity? Evidence of both ethnic affiliation and ethnic attribution might be likely. Ethnic affiliation would produce symbols of membership and nonmembership similar to the instrumental/interaction approach manifested in material items (i.e., dress, jewelry, rituals, etc). Ethnic attribution, on the other hand, would produce demeaning images of members of other ethnic groups, involving both direct and indirect ethnic slurs or insults. Examples would include the use of symbols such as the Cleveland Indians or Washington Redskins, lawn jockeys, etc. An increased distance or segregation between dominant and subordinate groups would also be expected (Brumfiel 2004). Although the expected results of this approach appear to be very direct, other more subtle factors would be most likely be present to reflect the expected conditions.

Within the various approaches to ethnicity described above, there are certain aspects that make themselves more amenable to archaeological study. The following discussion represents these aspects.

## **Culture Contact and Ethnogenesis**

For an understanding of the concept of acculturation it is important to know how culture contact has been studied. The division between the two is between an historical fact – cultures come into contact with one another – and a method of theorizing the processes that happen because of that fact, particularly in imperial or colonial situations. However, because culture contact studies are of major importance in the history of anthropology, they are a necessary part of the study of ethnicity. The reason is that a “them” is required for there to be an “us.” Ethnogenesis occurs where and when groups come into contact. The ethnographic process traditionally has relied upon culture contact for its existence. In combination with Boasian concern for documenting traditional cultures before they disappeared, the studies of culture contact and culture change have represented anthropological thought about ethnicity (Clark 2003).

Culture contact studies were given a boost in the past few years by the cultural and academic activity associated with the quincentenary of Columbus’s first voyage. Various academic disciplines were involved in the reexamination of the Columbian contact. In addition to spurring more research on culture contact, the

political circumstances also required a reconceptualization of the outcomes of contact, in particular, acculturation. This rebirth of historical anthropology has led researchers to decry the fractioning of anthropology into narrow subfields. Clark (2003) points out that a redefinition of the fields of prehistoric and historic archaeology has been discussed (Lightfoot 1995). Only through bridging the gap will culture contact studies fulfill their promised contribution to studies of ethnicity and culture change (Clark 2003).

## **Acculturation and Creolization**

Culture contact studies through most of the twentieth century were primarily concerned with describing and classifying change according to a linear model of cultural evolution, namely, that the dominant (or donor) culture will impose itself onto a passive (recipient) culture. This view was usually expressed in terms of acculturation. For all the times *acculturation* is used by authors, it is very rarely defined, perhaps because this concept has fallen out of favor. Farnsworth cites Barnett et al. in defining acculturation as “culture change that is initiated by the conjunction of two or more autonomous cultural systems” (Barnett et al. 1954 cited in Farnsworth 1989). Despite the use of *autonomous* in this definition, many who engaged in acculturation studies assumed that the culture change was unidirectional (only the less dominant group would change) and that acculturation would eventually lead to the disappearance of the recipient group’s culture. This assumption can be seen in the studies cited by Lightfoot et al. (1998) in which historic Native American sites were dated based solely on the ratio of traditional to European goods.

Early researchers in acculturation were interested in taxonomies both of acculturation itself and of its material correlates. In attempts to assess the magnitude of change, a number of quantitative schemes were proposed. One that influenced archaeology was that of Quimby and Spoehr (1951). They devised a method to create acculturation profiles of materials in museums. They created seven artifact categories based on whether an item was classified as either “new” or “traditional” in artifact form, composition, manufacture, and use. They saw this classification as an improvement over merely assessing items as “native” or not, making it easier to categorize artifacts that were somewhere in between. For example, there could be new forms made from local materials. Using the classification, researchers came up with an “acculturation profile” (Farnsworth 1989:239). Other more simplistic schemes were used, including historical archaeologist Donald Hardesty’s index of acculturation in which the number of American artifact types is divided by the total number of artifact types (in Praetzellis et al. 1987).

These approaches, which Praetzellis et al. (1987:39) describe as “200-sherds-of-culture-change-per-year,” represent acculturation studies at their least complex. Still, the overall critique of acculturation models is that not only are traditional groups represented as passive but also changes in the dominant group are ignored. In the long run, they relied on a strict adherence to the culture concept, just at the time that ethnographers were coming to question that concept (Jones 1997). Finally, and perhaps most important, acculturation models left the processes of cultural synergism unexamined (Clark 2003; K. G. Lightfoot et al. 1998).

These concepts have been, or are in the process of, being replaced by others, whether they are transculturation or creolization (Deagan 1983, 1998; Lightfoot 1995; K. G. Lightfoot et al. 1998). In general, newer conceptualizations of culture change critique two things: the idea of the boundedness of culture and a one-to-one correlation of material items to belief. In particular, they see individual agency and creativity in many of the processes of culture change. Given the creativity and synergism of Creole societies, it is not surprising that creolization is becoming a powerful model (or at least metaphor) for understanding what happens when cultures collide.

Lightfoot et al. (1998) see the frontier as a location for active manipulation of ethnic identity and ethnogenesis or creolization in their description of ethnic relations in the West. In this perspective, the simpler models of ethnic assimilation are replaced with one that focuses upon the active frontier inhabitants. Other historical archaeologists working in other borderlands areas are focusing on the loci of interaction rather than viewing the frontier solely as a geographic location (Carrillo et al. 2003; Church 2001; Clark 2003; Deagan 1983; Ferguson 1992; K. G. Lightfoot et al. 1998). Core-periphery models that emphasize

“core” events in interpreting sites at the “peripheries” minimize the importance of interaction along what its proponents define as peripheries (Church 2001).

## **A Synopsis of the Concept of Ethnicity**

A summation of ethnicity entails a review of the various aspects associated with this term. Ericksen stresses that “ethnicity is first and foremost a concept and not a natural phenomenon. As a concept it exists on at least two levels, that of the analyst and that of the native. Is it possible – or even desirable – to keep the two apart? If we do, it will retain its wide-ranging comparative potential; if we do not, it will enable us to describe local contexts in a more experience-near fashion than otherwise” (Eriksen 1996).

He goes on to state:

Ethnicity can be seen as a universal social phenomenon, and it can be seen as a modern cultural construct. It can be conceptualised as a peculiar kind of informal political organisation (Cohen), as an aspect of personal identity involving contrastive, mutually exclusive labelling (Epstein), as the reflexive appropriation of a "cultural estate", history and concomitant political rights (Roosens), as a product of colonialism and capitalism (Comaroff, Fardon), or as a functional boundary mechanism separating endogamous groups (Barth). If say, the reflexive, traditionalist self-identity aspect forms the focus of the analysis, a narrow, historically bounded concept of ethnicity is called for. If, on the contrary, the research aims at mapping out say, aspects of basic processes of interaction or of social identity formation, then a more encompassing and formal conceptualisation is needed. The question should not, therefore, be framed as "what is ethnicity", but rather as "how can we most fruitfully conceptualise ethnicity". I suspect that most controversies over definitions stem from an inadequate distinction in this regard: from an implicit (or explicit) concern with "essences" and a positivist innocence with regards to the ontological status of our concepts. Most of them, in the social disciplines at least, have a fairly short lifespan, and there is no reason to believe that the presently – still – useful concept of ethnicity will still be with us in a few years. As I have insinuated, the boundary between ethnicity as folk concept and as analytical tool is currently under stress - natives have their own, anthropologically informed theories of ethnicity - and it seems that the concept, hitherto a defining concept, is about to collapse, as Ardener would have put it, into a defined space. Perhaps it is time to prepare ourselves to replace our ethnicity concepts with terms like traditionalism, culturalism, politicised culture and informal political organisation in an increasing number of cases. Such concepts will create a new defined space, possibly one more beneficial to research. And possibly not (Eriksen 1996).

The preceding section represents a brief overview of how the concept of ethnicity has been used in an array of archaeological contexts to elicit potential archaeological manifestations. In this chapter, I present the topic not as a unified idea but rather as it appears in the anthropological literature as a series of alternative conceptual views of ethnicity.

## **ETHNICITY AND MATERIAL CULTURE**

All studies of ethnicity and archaeology rely on the existence of a significant relationship between material culture and ethnicity. The expression of ethnic identity often depends on or centers around material manifestations. At times the relationship is overt. Items may serve as markers of traditionalism or one’s class position within an ethnicity. At other times the relationship is much less direct, especially in time periods in which the primary relationship with material culture is one of consumption rather than production (Clark 2003; Miller 1987; Wilkie 2000).

Archaeologists have always been concerned with artifact style and what it means. One example is that material culture represents a storehouse of signs that can be brought out actively during conflict to mark difference. People’s unconscious relationships to material culture are significant for both those using practice theory and those interested in objectification similar to the phenomenological approach. Those who advocate



the use of spatial analysis in the studies of culture contact argue that while individual items of material culture can change quickly, the underlying mental structures are often slow to change. Those mental templates or habitus can often still be seen in spatial organization (Lightfoot et al. 1998 cited in Clark 2003).

## **Ethnicity in Historical Archaeology –The First Attempts**

Some of the earliest work in historical archaeology that incorporated ethnicity was carried out in various parts of the southeastern, northeastern and western United States during the 1970s and 1980s (Bower and Rushing 1980; Carrillo 1977; Deagan 1973; Deetz 1977a; McGuire 1982, 1983; Otto 1977; Schuyler 1974, 1980; Shenk and Teague 1975; South 1977c).

Two examples of early attempts to view ethnicity in the archaeological record are provided below. The first entails Randall McGuire's groundbreaking work in using ethnicity in historical archaeology (1982; 1983). According to Jones (1997), McGuire utilizes an instrumentalist approach that focuses on boundary creation and maintenance without any underlying, less conscious similarities present within groups.

Randall McGuire (1982), using examples of previous work throughout the United States and his own work in southern Arizona, was one of the first archaeologists to begin examining the broader questions of how ethnic groups form and change, and he formulated a general theory of ethnicity. Utilizing the available sociological and anthropological data (Barth 1969; Bennett 1975; Despres 1975; Hodder 1979; Spicer 1971 and others), he constructed a theory that was "based on the interrelationships among three variables; competition, ethnocentrism, and power" (McGuire 1982:160). He further outlines a theoretical framework that describes the functional nature of the interrelationships. The framework states that 1) the motivation for group formation is created by competition; 2) the ethnocentrism created is channeled along ethnic lines; and 3) the nature of the relationship is determined by the differential distribution of power (McGuire 1982:160).

The general idea is that an ethnic group's persistence is as a result of the existence of an ethnic boundary that is maintained through the manipulation and display of symbols (Spicer 1971 cited in McGuire 1982). McGuire offers an explanation of his concept:

It follows from this perspective that the nature and persistence of ethnic groups depend on the existence of an ethnic boundary...which ethnic groups maintain through the manipulation and display of symbols.... What is important to the maintenance of such boundaries is not the totality of cultural traits contained by them but those traits that the groups utilize as symbols of their identity separate from other groups. These symbols may be behavioral or material in form (1982:160).

McGuire's work has been critiqued, as other instrumentalist theories have been, as providing information concerning ethnic boundary maintenance but not explaining the concept of ethnicity. Since McGuire's work and others in the 1970s and early 1980s, a number of researchers have written on the subject of ethnic groups and ethnicity. Those studies can be broken out with various theoretical orientations that range from culture contact and ethnogenesis to acculturation and creolization. The following represents a summary of these theoretical perspectives.

This example entails research conducted by one of the present authors (Carrillo) in South Carolina during the 1970s at two historically and socioculturally distinct locations in the Piedmont area of South Carolina. This area was settled primarily by individuals of both British and German cultural traditions (Carrillo 1977). During 1974, excavations were undertaken by the Institute of Archaeology and Anthropology at the University of South Carolina at the sites of two houses. These were the Bratton House and the Howser House, built and occupied by representatives of British and Germans traditions, respectively (Carrillo 1977).

The research design outlined an attempt to view both sites' artifact data as a system of relationships aimed at defining specific activities relative to the archaeological record at the Bratton and Howser houses

(Carrillo 1977:84). The basic impetus for the study was derived from a well-known statement by Lewis Binford:

Artifacts having their primary functional context in different operational sub-systems of the total cultural system will exhibit differences and similarities differently, in terms of the structure of the cultural system of which they were a part. Further...the temporal and spatial spans within and between broad functional categories will vary with the structure of the systematic relationships between socio-cultural systems (1962:218).

More important, he adds:

We cannot dig up a social system or ideology..., but we can and do excavate the material items which functioned together with these more behavioral elements within the appropriate cultural sub-systems. The formal structure of artifact assemblages together with the between element contextual relationships should and do present a systematic and understandable picture of the total extinct cultural system. (Binford in Carrillo 1977)

At the Bratton House, variability was demonstrated between the cultural material recovered from the surface and subsurface zones. Statistical tests allowed inferences to be made concerning the probable activity that resulted in their occurrence in the archaeological record. The Howser House excavations revealed a totally different pattern with very few artifacts located in the yard area.

In summary, based on the evidence obtained resulting from theoretical postulates (after Binford 1962), and archaeological, architectural and historical data, it appeared that the differences in the archaeological records at the Bratton and Howser houses were attributable to different behavioral patterns in different sociocultural systems, as hypothesized. The activity of discarding refuse close to domiciles has been archaeologically demonstrated in excavations of eighteenth century British colonial households. A similar situation occurred at the Bratton House. At the Howser House, on the other hand, no significant associations were found among the artifacts recovered from zones associated with the initial occupants of the structure, and the refuse appeared to be the result of random disposal over a period of time. This finding was perhaps a result of a German-American culture pattern of refuse disposal, the lack of artifact association being a strongly suggestive factor (Carrillo 1977:86).

The dispersion, density, and association of artifact classes within the archaeological record were examined for the purpose of discovering the kinds of refuse disposal patterns involved in producing that record. A contrast between such behavioral patterns was found archaeologically at the Bratton House and the Howser House. A second goal was aimed at examining the archaeological record in the form of small samples from the yards at two structures having contrasting sociocultural traditions. This was an attempt to discover, if possible, resulting contrasts in the archaeological record. Such contrast was indeed found in a positive association of artifact classes at the Bratton House and a lack of association at the Howser House. These data are certainly suggestive of sociocultural variability resulting from the different cultural traditions represented at these houses.

## **Discussion**

The approach taken was merely a first step toward attempting to explain sociocultural variability derived from the variability in the archaeological record (Carrillo 1977:84-88). More recently, Minette Church conducted research in the Pinon Canyon Maneuver site (PCMS) in southeastern Colorado that was a similar but more detailed study of two historically documented culturally distinct homesteads. Her study serves to more clearly define archaeological variability on sites for which there is some documented control over sociocultural variability in order to more firmly establish causal links (Church 2001). Additionally, Bonnie Clark has also recently demonstrated the intrasite variability within the Hispanic complex of La Placita (Clark 2003).

Historical archaeology utilizes all types of available sources, including material culture, architectural remains, and both primary and secondary historical and ethnographic materials. This approach places historical archaeology in a unique position to contribute to the larger anthropological discussion of ethnicity and acculturation. Correlation between material culture and ethnic groups, when viewed within the realm of an ethnographic context, can shed light on acculturation (i.e., two-dimensional influence) as a process (Church 2001:79).

Ethnicity is necessarily served in archaeology through the use of a holistic approach. It represents a different and more productive approach than many archaeologists have used with historic sites in Colorado. It represents a hybridized synthesis derived from the critical and anthropological treatment of textual evidence whose arguments are equally fused with material culture (Church 2001:81).

## **ETHNICITY IN THE HISTORICAL ARCHAEOLOGY OF COLORADO**

The following section has two goals:

1. The examination of historical archaeological sites in Colorado that have associations with ethnic groups; and
2. A historical assessment of ethnic groups that have little or no archaeological information available. Although sites imbued with ethnicity are few in comparison with all the historical archaeological sites in Colorado, a discussion is presented in which the historical archaeological sites having ethnic associations are examined and potential ethnic variables are discussed.

### **Sites in Colorado with Ethnic Associations**

The following section examines sites in Colorado that have known associations with ethnic groups. The OAHP Compass database program contains a total of 23,261 recorded sites with an historical archaeology affiliation in Colorado, including architectural sites. As previously indicated, the sites imbued with ethnic attributions are few, and many appear suspect. The groups present in the Compass database include 1) African-American, 2) Chinese, 3) Hispanic New Mexicans, and 4) Japanese and Japanese-American. Additionally, groups identified archaeologically, but not in the Compass database, include Italians and Italian-Americans, Greek and Greek-American, and German and German-American sites (Horn, Pfertsh et al. 2003). The section includes a historical overview and discussion of each ethnic group represented, a discussion of potential ethnic variables, and a discussion of problems encountered with the Compass database and potential improvements.

An examination of the archaeological records of the OAHP Compass database program revealed that there are a total of 1,799 sites with an assigned ethnicity, although many are questionable. Three hundred and eighty-four are Hispanic-related, 17 are related to African-Americans and seven are related to the Asian American affiliation. The remaining ethnic sites are Native American - Unspecified (1,374); Native American-Historic (17); and Historic-Other (202). Additionally, the remaining sites comprise four groupings listed as European-American (8,250), which is the most numerous of the categories. As described in the introduction, the Native American and the European American sites are considered problematic due to various assignments (some ethnic, some not) and are not considered in this study for two reasons: 1) a series of random observations of the Native American categories contained features and artifacts similar to those indicated for Hispanic-related sites; and 2) Hispanic-related sites are listed under the European-American group.

It appears that a realistic reassessment of all of the historical archaeology files needs to be undertaken to clarify the issues caused by various recorders arbitrarily assigning either Native American, Hispanic and European-American categories, either singly or in groups, which does not serve to further an accurate

database analysis. Such an analysis is beyond the scope of this study. As a result the historic groups that appear to be the most workable have been documented archaeologically; the sites that address issues of ethnicity include sites associated with African-Americans, German and German-Americans, Italian and Italian-Americans, Chinese and Chinese-Americans and Japanese and Japanese-Americans and Hispanic New Mexicans. These sites represent the nexus of this study.

## **African-American Ethnicity**

The development of African-American archaeology as a subfield of historical archaeology has occurred only within the past 40 years. The initial research on African-American sites occurred with plantation and slavery studies in the Deep South and the Caribbean. Current African-American research has expanded considerably beyond the southern plantation to other parts of the United States and other site types. It now includes sites related to “urban slavery, post-emancipation settlements, western frontier experiences, industrial sites and turn-of-the-century tenant farmers” (Baumann 2004a:16).

Three explanatory paradigms have been developed to address the underlying processes of African-American ethnicity: 1) acculturation, 2) creolization, and 3) dominance and resistance (Singleton 1998).

Briefly, the meaning of the term *acculturation* was initially defined by Redfield et al (1936) as the phenomena that results when groups from two different cultures come into continuous first-hand contact that result in subsequent changes in the original cultural patterns of either or both groups (Baumann 2004a:17). The concept has undergone a more recent change with acculturation linked to ethnocentric viewpoints of culture. The dominant culture assimilates a minority group, and the differences are erased. Acculturation is considered as unidirectional with objects, technology, and ideology controlled by the dominant culture. More recent studies have made attempts to recognize that enslaved Africans did not relinquish their culture but rather applied new cultural meanings to non-African objects (Ferguson 1992).

Creolization, on the other hand, recognizes that cultural interaction is a two-way relationship that includes the exchange of objects, technology, and ideas between two or more individuals or groups (Ferguson 1992). This approach has also been criticized as giving too much “primacy to evidence supporting the continuity of an African heritage rather than its discontinuity and reconfiguration” (Singleton 1995). She further indicates that the evidence of both should be considered (Singleton 1995).

The last paradigm, dominance and resistance, assumes that the social interaction that occurred between Africans and Europeans in the New World was primarily a power relationship of dominance (master) and resistance (enslaved). Within this hegemonic perspective, archaeologists attempt to view “how dominant groups exert their power and how subordinate groups resist such power” (Singleton 1998 cited in Baumann 2004a:19).

The major critique of this paradigm is that it is oversimplified and focuses on the search for “ethnic markers” and does not address a historical perspective on the transformation of ethnic communities. There are other social factors that can “equally and simultaneously affect the material record, including age, consumer choice, kinship, socioeconomic status, gender, race and occupation” (Baumann 2004a:19). Future research needs to focus on understanding both the formation processes of ethnicity and the interwovenness of ethnicity in combination with other forms of social stratification. Cultural identity is generated when both of these factors are viewed together (Baumann 2004a:19).

## **African-Americans in Colorado**

Colorado’s pioneer African-Americans, many who had spent their earlier lives as slaves or after the Civil War in peonage, escaped the oppressive conditions in the South and moved west. Not all of the African-Americans who settled in Colorado had been slaves. In an effort to overcome the impact of slavery and their newly won rights, African-Americans became involved in local and national politics as new rights

did not ensure their total freedom. They were led by articulate leaders that included Frederick Douglass's sons and other prominent men, including William Hardin, Henry Wagoner, Ed Sandlin, and Barney Ford. In 1865, African-Americans were denied the right to vote in Colorado Territory. In a retaliatory move, African-Americans petitioned Congress, which temporarily led to a suspension of Colorado Territory's effort to become a state. In 1867, federal legislation assured their vote, which was used to support the unsuccessful statehood effort of 1868. Education became a priority, and a night school was established in Denver with the integration of the Denver school system occurring in 1873. The integration principle was incorporated into the state constitution two years later. By the 1870s black policemen patrolled the streets of Denver, blacks sat on juries, and black children attended integrated schools (Abbott et al. 1982:205-207).

The advances made by African-Americans during the Territorial period were not permanent. As the population grew from less than 500 in 1870 to well over 11,500 in 1910, demands for segregation increased. Although the rights of African-Americans were backed by prominent men such as Colonel John Chivington and Horace Tabor, African-Americans faced discrimination in the military and in public restaurants, hotels, and theaters. Lynchings were not uncommon and occurred in several Colorado cities (Abbott et al. 1982:207-208).

One of the problems was that between 1870 and 1920 African-Americans never made up more than two percent of Colorado's population. Although antidiscrimination statutes were passed, with help from sympathetic Anglo-Americans, in 1885, 1895, and 1917, only lip service was paid to equal rights. In the midst of the discrimination, blacks found work as servants, porters, and laborers. However, several Colorado African-Americans rose to prominence. These included Barney Ford, Lewis Price, Drs. V. B. Spratlin and Justina Ford, Willis Hood, and William Barker. Statistical indicators tended to show that African-Americans in Colorado were well off compared with their counterparts in other states. By 1910 more than 85 percent of all blacks between six and 14 years of age attended school in Colorado, a percentage that nearly equaled that for Anglo-Americans and 20 percent higher than African-American enrollment in Southern states (Abbott et al. 1982:208-209).

### **The Historical Archaeology of African-Americans in Colorado**

Only 17 sites associated with African-Americans are found in the Compass database (Table 11). As noted for other groups, some may have been generally assigned to the African-American group with limited corroborating historical evidence. Fifteen of the sites are represented by 10 related features that make up the Dearfield Colony in Weld County (Massey et al. 1985; Western Public History Associates 1994), and five sites (5DV3579, 5DV5996, 5DV5997, 5DV5998 and 5DV5999) are located in downtown Denver (Carrillo 1991; Kalasz et al. 1994; Wood et al. 1999). The two remaining sites consist of a site feature at the Tercio townsite (5LA7112.11) recorded in 1997, and the site of the Battle of Milk River, or Thornburgh Fight, (5RB982) in Rio Blanco County. In both cases, the historical possibility of African-Americans being involved at both sites is thought to be the reason that the "culture" field in the Compass database entry for the sites lists European American, Hispanic, and African-American for site 5LA7112.11, and Ute, European American, and African-American for site 5RB982.

**Table 11.** African-American sites in Colorado by county.

<b>Number of Sites</b>	<b>County</b>
5	Denver
1	Las Animas
1	Rio Blanco
10	Weld
17	Total

The problem alluded to earlier concerning the apparent lack of sites with specific ethnic groups also extends to other realms. This is illustrated by the following observation made in 1999 concerning sites attributable to the working classes, as well.

Over the past 20 years there has been an increasing interest in studying and recovering the material culture of specific ethnic groups across the country. Only recently, however, has the issue of exploring working-class contexts and labor history been taken up by historical archaeologists (Solury and Little 1998:20; Wurst and Fitts 1999:1-6). These broader trends that have emphasized the examination of ethnicity, while downplaying issues related to class difference, can be seen in the kinds of sites and structures that have been recorded and preserved in the city of Denver and the state of Colorado. As part of this project, a file search was conducted at the OAH in Denver to identify sites related to African-Americans and sites related to working-class people. The search highlighted, not surprisingly perhaps, 60 sites associated with African-Americans, yet it was impossible to search for sites specifically associated with the working class. It should be noted, however, that with the large number of mining-related sites, and industrial contexts that have been recorded and excavated in the state, there are indeed many sites and studies associated with the working class in Colorado. At this point, however, it is impossible to conduct a file search specifically targeting working-class sites (Wood et al. 1999).

The file search specific to African-American sites revealed that although 60 historic structures related to African-Americans exist in Colorado, only nine sites are listed as having archaeological potential. Eight of the nine sites listed as having archaeological potential fall within the boundaries of the Dearfield townsite, further limiting the type and variety of African-American sites in the state. The relative paucity of African-American sites with archaeological potential is probably linked to a focus on recording standing structures that are associated with African-Americans located in urban neighborhoods in the cities of Denver (19) and Boulder. Many of these urban sites were recorded for preservation purposes and as part of neighborhood history projects. As such, the archaeological potential of the lots on which these structures stand may not have been fully considered (Wood et al. 1999).

## **DEARFIELD**

The abandoned town of Dearfield (5WL744) in Weld County was surveyed and recorded in 1985 by a group of historians (Massey et al. 1985). Dearfield was a settlement of African-American farmers, families, and businessman that was occupied from 1910 to 1940. The townsite was established as an agricultural colony for black families by Oliver Jackson in 1910. The settlement reached its peak in 1917 with 60 families and included homes, a school, churches, a grocery store, a restaurant, and other businesses.

By November 1921, the *Weld County News* reported that Dearfield was “a colony of 700 people with improved lands worth circa \$750,000, livestock and poultry worth \$200,000 and an annual production of \$125,000.” The Great Depression and the years of the Dust Bowl decimated the settlement, and by 1940, only 12 people lived in Dearfield. O. T. Jackson offered the colony to Governor Ralph Carr for use as an internment camp for Japanese prisoners of war. When his offer was rejected, he offered to sell the townsite, but no buyer emerged. After his death his niece, Jenny Jackson, stayed on in Dearfield (Massey et al. 1985).

Dearfield was affected by economic downturns and drought in the 1920s and 1930s, when most of its residents moved away. The site represents the national African-American colonization movement and is the only remaining such colony in Colorado (Simmons and Simmons 1998).

Currently, a few deserted buildings still stand to remind those who knew its history and the grand dream of its residents. According to the Compass database, two surveys have been conducted at the Dearfield Colony site (5WL744), one in 1985 by Colorado State University and one in 1994 by Western Public History Associates. The current remains consist of 10 features. These are identified as a barn foundation (5WL744.2), the O.T. Jackson residence/Dearfield Lodge (5WL744.6), ruins of a grocery store (5WL744.7), ruins of a granary (5WL744.8), a well and historic debris scatter (5WL744.9), four additional historic debris scatters (5WL744.10, 5WL744.12, 5WL744.13, and 5WL744.14), and a depression (5WL744.15).

The archaeological surveys did not reveal ethnicity, nor were they oriented toward identifying ethnicity. The ethnicity was determined through historical and oral history records.

In 1994, Western Public History Associates, in cooperation with the Black American West Museum and the OAHP, nominated the Dearfield site to the NRHP. The site, consisting of seven standing structures, two ruins, one foundation, one depression, and five historic debris scatters, was recommended as eligible for nomination as a historic district and was listed on the NRHP in 1995. At the time the property was nominated to the National Register, Western History Associates recommended that archaeological investigations could further contribute data to understanding settlement patterns of African-Americans in the West. However, no archaeological testing has been conducted at the townsite.

Attempts to preserve the townsite are being undertaken by the Black American West Museum in Denver. According to the archives on the University of Northern Colorado website, the museum submitted an application to the National Trust for Historic Preservation through the Colorado Historical Society and received an appropriation from the Colorado legislature to undertake a study of the site (University of Northern Colorado 2005).

In 1998 Sugnet and Associates conducted a survey of 5.9 miles along Colorado Highway 34 in Weld County. The survey was part of a Colorado Department of Transportation (CDOT) project that had the potential to adversely affect historic resources related to Dearfield. Five previously documented resources were examined, and three newly discovered resources were documented during the Sugnet and Associates survey. The survey report also recommended consultations between OAHP and CDOT regarding potentially adverse affects to historic resources located in the proposed right-of-way. (Simmons and Simmons 1998)

## **5GA1168**

The remains of a fairly isolated homestead/ranch owned by an African-American farmer (5GA1168) were recorded in Grand County in 1987. The site was reevaluated in 1990 by the BLM-Kremmling Resource Area. Archaeological remains include a collapsed log structure and a historic artifact scatter. The site reevaluation form completed by the BLM in 1990 indicates that this locale is still called the "Nigger Jim" homestead by locals. Both of these sites were identified and recorded as part of archaeological surveys. No further archaeological testing or excavation has occurred on either of these sites to date.

## **FIVE POINTS**

The historically African-American Five Points neighborhood in Denver was the focus of a neighborhood history study in 1994. The objective of the Neighborhood History Project was to document significant architectural and historical resources in Denver's neighborhoods. A reconnaissance-level survey was conducted to identify significant structures. The results of the project were included in neighborhood history reports and Denver landmark applications were compiled as a result of the survey (Simmons and Simmons 1995).

Denver's Five Points neighborhood is one of the city's oldest residential neighborhoods. The area was included in the original congressional land grant that eventually became part of the City of Denver. Residential development of the area was complete by 1914, housing moderate income families: railroad workers, teachers, and business people. The first streetcar line, the Denver Horse Railroad Company, replaced the horse-drawn cars with cable cars. By 1920, the Welton Street route was purported to be the world's longest cable car line. The intersection of 27th and Welton became known as Five Points after this name was adopted as the streetcar designation in lieu of the cumbersome alternative: Washington Street, 26th Street, 27th Street, and Welton Street (Simmons and Simmons 1995).

The 1920s saw a transition to a black majority in the Five Points area, which has continued to the present. At this time, Denver's 6,075 African-Americans made up only 2.4 percent of the city's population of 256,491, a proportion far below that of other major U.S. cities such as New York and Chicago. Compared

with the minorities massed in those places, Denver's blacks were well educated and moderately prosperous. More than 222 of the city's 5,442 blacks owned their own homes in 1920, nearly five times the percentage in New York State (Simmons and Simmons 1995). But the color lines were clearly drawn in Denver. The black community had shifted northeast from segregated areas along Larimer and Blake streets, centering much of its commercial activity in the Five Points area at Welton Street and 26th Avenue. The black residential neighborhood extended east from Five Points for about a mile, but whites in east-central Denver used custom, pressure, and restrictive real estate covenants to keep African-Americans west of Race Street. The results of this trend of unofficial segregation are still seen today in this area of Denver. During the 1920s, many of the early white residents moved out of the area, as the black community became the majority population (Simmons and Simmons 1995).

In the 1930s–1950s, a black culture in Five Points coalesced, developing a strong sense of community and cultural identity as a largely self-contained community with services and commercial establishments catering to African-Americans, as well as to other ethnic and racial groups in the area. The white community often patronized black restaurants and nightclubs. During the war, soldiers from the Lowry Air Force Base and Camp Carson flocked to the clubs, bars, and after-hours jazz spots, establishing Five Points as Denver's music mecca (Simmons and Simmons 1995).

In 1995, two buildings in Five Points were placed on the NRHP as a result of the Denver Neighborhood History Project. Initially, the Baxter Hotel (1912-1929), later renamed the Rossonian Hotel and Lounge (1929-1945), was located at 2650 Welton Street. The Rossonian Hotel and Lounge gained its reputation for "authentic" jazz largely because of the big-name black musicians who were drawn to Five Points. The club hosted jazz greats such as Duke Ellington, Louis Armstrong, Count Basie, Nat King Cole, and Dinah Washington. Despite their national stature as jazz musicians, these performers were often not welcome at white-owned and white-managed hotels in the city. They came to the Rossonian Hotel and played at the Lounge between larger Denver engagements (National Park Service 1999).

The Justina Ford House stands at 3091 California Street, where it was relocated in 1984. The building was originally constructed in 1890 and stood for 94 years at 2335 Arapahoe, 13 blocks from its current location. Development in the previous location made its relocation necessary. However, its new location is similar in context to the previous one. The building was the home and office of Dr. Justina Ford from 1912 until her death in 1952. She was an important member of Denver's black and ethnic community. Justina Ford was the first black woman doctor in both Denver and the state of Colorado. From the time she came to Denver in 1902 until her death 50 years later, she remained the only female black physician in Denver. The building currently houses the office and collections of the Black American West Museum.

## **GOSS-GROVE NEIGHBORHOOD**

The Goss-Grove Neighborhood History and Survey Project in Boulder was conducted by Christine Whitacre and R. Laurie Simmons for the City of Boulder Department of Planning and Community Development. The purpose of the 1985-1986 Boulder Survey of Historic Places was to 1) update and expand the information on 242 properties recorded on State Inventory Forms from the 1977 Boulder Survey of Historic Places and 2) to identify and record a specified number of structures, previously unsurveyed, in neighborhoods that were determined to be under the greatest threat from development and that also possessed a significant quantity of historic resources (Whitacre and Simmons 1986).

Goss Street is the heart of what was once called the "little rectangle." This district was home to a majority of Boulder's black and Hispanic population for almost 50 years. Many of the vernacular, wood structures in this neighborhood are reminiscent of the hall-and-parlor "folk" houses found in the rural South, where many of the district's early black residents were born. Although the area has important historical associations and individually significant buildings, the surveyors found that the overall integrity of the area had been irreparably altered to the point where it no longer had the potential to be a historic district (Whitacre and Simmons 1986).



Several buildings in the "little rectangle" were associated with important members of Boulder's early black community. At least two Goss Street residences were recommended as eligible to the NRHP. Former slaves and a Civil War veteran occupied the Oscar and Mary White house at 2202 Goss Street. The house at 2019 Goss Street was the home of Ruth Cave Flowers, the first black graduate of the University of Colorado and one of the city's best-known black citizens. As such, these buildings are important links to our national heritage (Whitacre and Simmons 1986).

## **5OT121**

A historic black homestead in Otero County was recorded in 1974 and given the site number 5OT121. It is known locally as The Dry. The homestead was occupied around 1915. A group of African-Americans from Kansas, as well as other places, acquired land in the area under the Homestead Act of 1862. At one time, there were over 100 inhabitants. They had a schoolhouse that also functioned as a social center. The school closed around 1933. Many of the inhabitants were later forced to leave the area because of drought and economic depression.

At the time the site was located, only one of the original structures was being occupied. Two other houses had recently burned down; vandalism was suspected. Although the site is significant to African-American heritage, it has not been placed on the NRHP.

## **THE BROADWAY VIADUCT REPLACEMENT PROJECT**

In 1998 the City and County of Denver in conjunction with CDOT had decided to replace the faltering Broadway viaduct built more than 70 years ago in downtown Denver. During July and August 1998, archaeologists from SWCA, Inc., Environmental Consultants and Richard Carrillo of Cuartelejo HP Associates conducted archaeological testing at five locales along the Broadway Viaduct ROW (Wood et al. 1999). The locales within the project area lie on either side of Broadway, which runs north through the city and crosses the Platte River at the Broadway Viaduct. The purpose of the testing phase was to conduct documentary research and archaeological testing to determine the nature and integrity of archaeological deposits in the five locales that had the potential of being adversely affected by the Broadway Viaduct Replacement project. Archaeological testing revealed that three locales (5DV5997, 5DV5998, and 5DV5999) possessed intact archaeological remains related to the late nineteenth- and early twentieth-century occupation of the neighborhood. Recommendations made after the testing phase by CDOT affected only one of the three potentially eligible locales, site 5DV5997. Sites 5DV5998 and 5DV5999 were avoided. In 1999 archaeologists conducted a data recovery project on site 5DV5997 (Wood et al. 1999).

The study area was not part of the original congressional grant that defined the city of Denver. However, this area was plotted as a residential neighborhood as early as 1859. As the population of the city boomed, the outskirts of town, including the project locales, were incorporated into Denver as a series of residential additions. The 1887 Sanborn Fire Insurance map indicates that single-family dwellings dominated the project area. Documentary research revealed that the neighborhood was home to an ethnically diverse (African-American, Chinese, Irish, and other immigrant groups) working-class community until the 1920s. Being adjacent to all of the major railroad lines, this neighborhood shifted from residential to commercial use as businesses associated with the railroads flourished. Most of the domestic structures that remained in this area were destroyed in the 1920s when Broadway was extended north and the original Broadway Viaduct was constructed (Wood et al. 1999).

The following summarizes the results related to both the testing phase of research and the data recovery project of site 5DV5997. The testing phase of the research allowed a better understanding of the dynamics of a working class, multiethnic neighborhood. The mitigation of site 5DV5997 provided an important base of information on working-class African-American families who lived in this neighborhood. The research represent an important first step to understanding the development of the working class in Denver and ethnic diversity in this former residential neighborhood (Wood et al. 1999).

Because site 5DV5997 was associated with African-Americans, ethnicity was considered at the Broadway Viaduct neighborhood. Documentary research was used to analyze the ethnic makeup of the Broadway Viaduct neighborhood. In the late 1800s, the neighborhood consisted of Euroamericans, Chinese-Americans, African-Americans and other immigrants. The Broadway Viaduct neighborhood was on the northeastern fringes of the Five Points intersection, which became primarily a black neighborhood (Lyles 1977). It was not until the 1920s, with the implementation of the “City Beautiful” program, that Denver became more compartmentalized racially and ethnically.

As previously noted, the study of ethnicity has been an important area of research among historical archaeologists for some time. However, the correlation between ethnicity and artifacts remains poorly understood. For this reason, many researchers have turned to the study of “ethnic markers” (Deagan 1982). Ethnic markers are individual artifacts or groups of artifacts that can undeniably indicate the presence of certain ethnic groups at archaeological sites (Wood et al. 1999).

At site 5DV5997, the observation of ethnic markers was considered. However, it was not possible to make any specific determinations of these types of artifacts. A moderate amount of both decorative and personal items were recovered, which included several pieces of decorative pottery, jewelry, perfume bottles, adornment items, and decorative clothing items. Children’s toys were also apparent throughout the excavation. Although the artifacts did not imply ethnicity, they did indicate that the occupants had a certain amount of disposable income (Wood et al. 1999).

Material remains associated with ethnicity and race have also been interpreted as indicators of status. In a study done in Annapolis, Maryland, it was proposed that African-Americans used mass-produced objects in certain unique ways. Not only did they participate in the consumer culture to circumvent racist behaviors but also to partake in the opportunities that consumerism offered American citizens. In this way, African-Americans bought national brand products from national chains as part of an antiracist class struggle (Mullins 1999:22). From the material remains recovered at site DV5997, it was inferred that African-Americans in Denver were active participants in the consumer culture. The majority of artifacts with makers’ marks were national brand products. These types of artifacts included medicinal, personal hygiene, and subsistence-based products. Through buying national brands, African-Americans no longer had to interact with local merchants who measured and sold products from bulk where they were often cheated or simply not served (Mullins 1999:23). By buying these nationally distributed products, African-Americans were guaranteed the same quality and quantity in a product as the rest of American society.

The remains of food are also used as indicators of both ethnicity and status in the archaeological record (Staski 1990:128). From the faunal analysis at site 5DV5997, it appears that the subsistence base was primarily beef, chicken, and pig. The remains of wild game, such as deer and duck, were also present. Denver was still a rather small city at the turn of the century, and nearby fields and plains would have been easily accessible for hunting. The meat from the domestic animals appeared to be mainly from cheaper cuts. Though this evidence is not indicative of ethnicity, it does point to economic status as part of social class. The occupants of site 5DV5997 were forced to stretch their income by combining store-bought foods with foods obtained through hunting (Wood et al. 1999).

The floral analysis also lent itself more towards social class than ethnicity. Foods represented in the pollen and macrofloral remains included fig, tomato, strawberry, raspberry/blackberry, cereal grains, and a member of the mint family that might have been used as seasoning. All of these plants, except for the fig, could have been grown in a Denver garden.. Archaeological investigations were not conducted on a determined garden area. However, the evidence suggests that the occupants may have been growing additional foods in the yard area (Wood et al. 1999).

Without comparable data, it is impossible to conclusively determine that African-Americans in the Broadway Viaduct neighborhood had a lower standard of living than other ethnic groups. In analyzing the material from site 5DV5997, it became apparent that ethnicity and social class are closely linked. The historical research and the material culture recovered from the site indicate that the occupants struggled with

economic survival and overcoming racism. Although to what extent other people in the neighborhood suffered from these same injustices is unknown. People in the Broadway Viaduct neighborhood were affected by both class and race in different ways and at different times (Wood et al. 1999).

## **OTHER AFRICAN-AMERICAN CULTURAL RESOURCES**

Other structures associated with African-Americans have been recorded throughout the state. These buildings include places of worship, social centers, businesses, as well as homes. They represent the struggle as well as the success African-Americans have experienced in Colorado.

The OAHP file search utilizing the Compass database made apparent the lack of archaeological sites associated with African-Americans. The history of African-Americans is an integral part of the history of Colorado, as well as to the historic development of the United States. Although preservation efforts have concentrated on maintaining standing structures, archaeological sites across the state have been largely ignored. One exception includes the excavations carried out at the Broadway Viaduct Neighborhood, specifically at site 5DV5997. They represent a first step toward understanding the African-American experience in Denver.

## **Asian-Americans in Colorado**

The archaeological record as it relates to Asian-Americans in Colorado is minuscule. Only six sites that pertain to nineteenth-century Chinese occupation are listed. However, the information is quite vague concerning their ethnic assignment. All are listed as "European-American; Asian-American." Although only a few possible sites have been recorded to date, the information that can be obtained from sites attributable to Asian-Americans, both Chinese and Japanese, is quite convincing if viewed in terms of "ethnic markers." In terms of Japanese and Japanese-American populations in Colorado, a general overview is presented of the site of the Granada Relocation Center, or Camp Amache, a World War II Japanese internment camp on the Colorado eastern plains near present-day Granada.

## **CHINESE**

In the mid nineteenth century, great numbers of people seeking employment from mainland China emigrated to the United States and other countries. Named "overseas Chinese," they made lasting contributions to the development of early communities. This impact has only recently begun to be recognized. "Chinatowns," rural mining claims, work camps for railroad and other construction activities, salmon canneries and shrimp camps, laundries, stores, cook shacks, cemeteries, and temples are only some of the sites where traces of their presence can be found. In recent years, numerous archaeological and historical investigations of the overseas Chinese have taken place (Wegars 1993).

In neighboring Wyoming, Dudley Gardner at Western Wyoming College in Rock Springs has conducted extensive excavations at the Rock Springs and Evanston, Wyoming, Chinatowns (Gardner 2001, 2003, 2004b).

Identification of the ethnic components of the Chinese presence is made easier by the fact that the artifacts found on overseas Chinese archaeological sites include artifacts that were either brought with them or imported by them. These include "table ceramics, food and alcoholic beverage containers, medicinal bottles, gambling-related objects, and opium-smoking paraphernalia [that were] quite different in appearance from objects used by Euroamericans" (Wegars 1993).

## **THE CHINESE IMMIGRATION TO THE UNITED STATES**

Beginning in the mid nineteenth century, Chinese immigrants began to come to "Gold Mountain," as America was called, to join the gold rush that began at Sutter's Mill, Sacramento, California. After the large strikes had played out and the lure of gold diminished, they came simply to work. Their labor was initially

welcomed, and they became a significant part of the labor force that laid the economic foundation of the American West. Chinese could be found throughout the West, working in agriculture, mining, industry, and wherever workers were needed. In Colorado, they are best known for their contribution to the construction of the Transcontinental Railroad, which united the country economically and culturally.

In spite of their indispensable role in the development of the American West, the Chinese suffered severe exploitation. They were discriminated against in terms of pay and forced to work under abysmal conditions. White workers viewed them as economic competitors and racial inferiors, thereby stimulating the passage of discriminatory laws and the commission of widespread acts of violence against the Chinese. According to one account “no variety of anti-European sentiment has ever approached the violent extremes to which anti-Chinese agitation went in the 1870s and 1880s” (Higham 1963:25 cited in Wei 1999).

An anti-Chinese movement emerged the purpose of which was to deprive the Chinese of a means of making a living in the general economy. The goal of the movement was to remove them from the United States. This hostility hindered efforts by the Chinese to become American citizens. They were forced to flee to the Chinatowns on the east and west coasts where they were able to find safety and support. In the ghettos that were created, a meager existence was the only source of survival. They were also isolated from the rest of the population, and it became difficult, if not nearly impossible, for the Chinese to assimilate into mainstream society. Chinese were criticized for their alleged unassimilability. *Harper's Weekly* documented that in the nineteenth century many people considered the Chinese to be unassimilable and therefore unacceptable (Wei 1999). They were eventually excluded from the United States in 1882.

Chinese workers were prevented from immigrating to America by the Chinese Exclusion Act of 1882. The law's passage is considered a watershed event in American history. It identified a group of people for the first time by name as undesirable for immigration to the United States and also marked a fateful departure from the traditional American policy of unrestricted immigration.

After China became an ally during World War II, the exclusion laws proved to be an embarrassment and were finally repealed by the Magnuson Act in 1943. This bill made it possible for Chinese to become naturalized citizens and gave them an annual quota of 105 immigrants. Although the bill ended an injustice that had been committed 61 years earlier, the damage to the Chinese community had already been done. Between the 1890s and 1920s, the Chinese population in America declined. But the worst effect was to undermine the one thing that was most precious to the Chinese, their families. Chinese men were forced to live lonely bachelor lives in the almost all-male society that was Chinatown. Meanwhile, wives and children were forced to remain in China, supported by remittances from the United States and rarely seeing their husbands and fathers. Such separations made it difficult to maintain strong family ties.

As the annual quota of 105 immigrants indicates, America's immigration policy was restrictive and particularly discriminatory against Chinese and other Asians. Equality in immigration came only with the enactment of the Immigration Act of 1965, which repealed the iniquitous national origins quota system that had been established earlier. Since the 1960s, Chinese have immigrated to the United States in significant numbers, taking particular advantage of the immigration policy's emphasis on family reunification. At the end of the twentieth century, there were an estimated 2.3 million Chinese-Americans.

## **THE HISTORIC CHINESE POPULATION IN DENVER**

Historical documentation indicates that Chinese populations were present in Denver in the early 1870s, many having arrived in Denver as construction crews for the Union Pacific Railroad (Carrillo et al. 1987:6; Carrillo, Rhodes et al. 1993; Nelson et al. 2001). In 1880 there were 105,000 Chinese living in the western United States, with over 75,000 living in California. In contrast, Denver had a population of 612 Chinese.

After the Chinese population settled in Denver, many members developed a symbiotic relationship with liquor and prostitution establishments. They played a major role in the operations of those

establishments located within the general "uptown" area of 20th Street. They "manned the saloons, ran the restaurants, washed the clothes and solved the servant-girl problem; everywhere was youth and young manhood, and gray-haired men and women were seldom seen" (Secrest 1990:16).

The first "Chinatown" was located on 16th Street between Wazee and Blake. It was relocated to 20th and 21st streets between Market and Blake which is within the project corridor ROW (this latter district eventually relocated between Market and Larimer streets and gained notoriety as the vice-filled "hop alley"). Chinatown "Chief," Chin Poo, located his headquarters here in the late 1880s. By one contemporary newspaper account, it was the cleanest and most orderly of the three such districts:

A comparison of the quarters occupied by Chin Poo is remarkable. In his place in West Denver there are no alleys, no passages or dark hallways, the floors are kept clean, are scrubbed daily, and all the houses are well-lighted and ventilated. There are no such things as double bunks seen there. The police permit the Chinese here to gamble and smoke opium...where no objection is raised against their presence (Carrillo et al. 1987:6).

The last location of his headquarters was on the north side of Blake Street and consisted of a series of common wall brick buildings.

The rise and fall of this district followed the fortunes of the Oriental population in Denver. The city's Chinese population grew gradually until the turn of the century, when 3,000 inhabitants were present. Over the next two decades, the Chinese districts were repeatedly raided, and many of the Chinese were forced to leave Denver. As a result of the attack on the Oriental community, and various acts such as the Chinese Exclusion Act of 1882 and others, their population dwindled to about 160 by 1930 (Carrillo et al. 1987:7; Carrillo, Rhodes et al. 1993; Nelson et al. 2001). Their involvement with the liquor and prostitution establishments made them easy targets as an ethnic group for harassment by police officials during the reform movement of the early twentieth century.

## **PURPORTED CHINESE SITES**

In 2000, the University of Northern Colorado undertook an "archeo-historic" study of the Grand Ditch at Rocky Mountain National Park. Five of the sites that have been recorded contain purported Chinese and Chinese-American associations (Plimpton 2000). Five campsites dated between 1890 and 1936 were identified in the study. They are all identified as "European American; Asian American" (Plimpton 2000).

The initial site is named Grand River Ditch Camp #2 (5GA.301.2). It contains a kiln made from granite stone, 10 clear glass fragments, 20 hole-in-top cans, four sardine cans, and 10 pieces of scrap metal. It has an occupation date range of 1890–1920. The second site is called Grand River Ditch Camp #3 (5GTA.301.2). Although called a camp, it contains a storage barn, an A-frame building, and two "pioneer" log storage buildings. It has a date range of 1890–1936. The artifacts consist of more than 20 assorted green, amethyst, and clear bottle fragments, more than 20 ceramic sherds, 10-plus tin cans with a solder seam, 21-plus building materials/elements, and 1 metal fragment. The third site is Grand River Ditch Camp #4 (5GA.301.4). It contains one log cabin, one granite foundation, and one dugout depression. It also contains an assortment of artifacts. These include "amethyst glass fragments (ca. 10), ceramic fragments (ca. 15), tin cans (ca. 10), building materials/elements (12), stove parts (1), shoe-sole leather (4), wheelbarrow fragments (2), and metal fragments (ca. 7). The last site is named Grand River Ditch Camp #6 (5GTA.301.6) and has an occupation date of 1890–1936. It contains one stone structure, five milled lumber log cabins, one dugout, one outhouse, and one headgate constructed of milled lumber. The associated artifacts include "green and purple glass fragments (15+), ceramic porcelain fragments (7+), solder dot cans (35+), sanitary cans (25+), building materials/elements (30+), metal fragments (7+), and one wood burning stove" (Plimpton 2000 in Compass 2005).

One of the major criticisms concerning the recording of these sites is that the artifacts present no indication concerning the Asian-American assignments to these features. This study was used as an example

of the types of archaeological recording that are present in the Compass database with the artifacts not indicating the presence of a specific ethnic group.

Two additional sites are recorded as being “Paleo-Indian; Asian American.” One is site 5GA1569 in Grand County recorded by the Bureau of Land Management in the early 1990s (Rupp 1992). The site was considered to be a habitation site containing a structure with a cement foundation, rock, wire, brick, and metal. Also found were Kremmling chert flakes in the hundreds and one biface tip of red and brown quartzite (Rupp 1992). The second site (5GN1705) was recorded in Gunnison County in the Gunnison National Forest during a timber sale inventory (Nykamp et al. 1990). The site comprised a ca. 1895 canal with “metal headgates.” The site is listed as “European American: Asian American” in the Compass database.

As is evident with the previous sites, the artifacts present no indication concerning the Asian-American connections with the sites. Although this grouping is the weakest of the four presented, it is important to recognize the historical importance of the Chinese and Chinese-Americans in Colorado. With “ethnic marker” artifacts, this should be one of the site types that will reflect their ethnicity in a much clearer manner than other groups.

Horn (personal communication 2005) says that he has seen Chinese materials at the Excelsior railroad station, which was used as a construction camp on the Denver & Rio Grande Railroad west of Grand Junction in 1882, but the site has not been recorded. Chinese railroad workers were used on the grade west of Grand Junction and into Utah, perhaps as far as the Salt Lake Valley at that time. He says that he did not know of any other situation in Colorado where Chinese were used for railroad labor. He has also seen Chinese artifacts at Red Mountain Town near Red Mountain Pass in the San Juan Mountains. Chinese were present in most of the mining communities of the area, but they were generally not mining but providing services, such as laundry and cooking. Mining districts often had regulations against Chinese owning and working their own claims; however, he is unaware of any Chinese mining sites in Colorado. Chinese sites are among the few that always retain ethnic markers because food traditions were largely retained and most Chinese came to America not intending to remain, so they made little attempt at assimilation. They also had a very good social support system that enabled them to find work and obtain Chinese goods.

## **JAPANESE AND JAPANESE-AMERICANS**

One of the initial groups of settlers to migrate from Japan to the United States arrived at Gold Hill, El Dorado County, California, in June 1869. The group consisted of the Wakamatsu Tea and Silk Farm Colony and was under the leadership of John Schnell. Other groups of colonists from Japan arrived in the fall of 1869. Items like mulberry trees, silk cocoons, tea plants, bamboo roots and other types of agricultural products were brought to California by the first immigrants. According to the U.S. Census of 1870 there were only 55 Japanese living in the United States; 33 were residing in California, and 22 of these individuals lived at Gold Hill. The agricultural venture failed within a few years and the colonists left for other parts (Lamar 1977:592-593; Wey 2004).

By 1880 the Census indicated that there were a total of 148 Japanese in the United States and that 86 Japanese resided in California. These individuals are believed to have been either students, or Japanese who had illegally left Japan. In 1884 labor immigration was made legal with an agreement between the Japanese government and Hawaiian sugar plantations to allow Japanese laborers to Hawaii. Much of the late 19<sup>th</sup> century immigration of Japanese to the United States mainland originated in Hawaii. By 1890, the Japanese population in the United States had risen to 2,038 residing in the United States. Over half, or 1,114, lived in California, primarily in San Francisco. By 1900, the population had risen to 24,326. Although there were three ports-of-entry along the Pacific coast – Portland, Oregon, Seattle, Washington and San Francisco, California, most Japanese immigrants entered the United States through San Francisco. This resulted in San Francisco having the first large settlement of Japanese in California (Lamar 1977:592-593).

Following the 1906 earthquake, the San Francisco Board of Education adopted a policy intended, for the first time, to restrict Japanese students to the segregated school previously established for Chinese-

American students. When the Japanese government protested, an international dispute arose. President Theodore Roosevelt intervened to urge that the policy be rescinded, and the school board agreed in return for a promise by Roosevelt to stem Japanese immigration. In response, Roosevelt negotiated the 1908 "Gentlemen's Agreement" between the United States and Japan by which further immigration of Japanese laborers was drastically reduced. Some immigration, mostly Japanese women, continued until the passing of the Immigration Act of 1924, which completely curtailed immigration from Japan until 1952. (Lamar 1977:592-593)

## **JAPANESE AND JAPANESE-AMERICANS IN COLORADO**

Not much has been written about the historical background of the Japanese and Japanese-Americans prior to the early 1940s when the Granada Relocation Center was built in Colorado as an outgrowth of World War II. A book was published in 2005 details some of the history of the Japanese and Japanese-Americans. The book is entitled *Colorado's Japanese Americans, From 1886 to the Present* (Hosokawa 2005). The book is the first history to be written about the Japanese in Colorado beginning in 1886. Currently, Colorado has a population of more than 11,000 people of Japanese ancestry.

### **The Granada Relocation Center (Camp Amache)**

One important site in Colorado relates to the incarceration of thousands of Japanese and Japanese-Americans during World War II in 10 relocation centers scattered throughout the West. The Granada Relocation Center, popularly known as Camp Amache, represents a different type of settlement in that both military and ethnic variables are intertwined within a relatively confined area and a relatively short time frame. Camp Amache is presented here as a case study for archaeological investigations at such sites.

The site is listed on the National Register of Historic Places (Simmons and Simmons 1994). A National Park Service advisory committee hearing, held in April 2005 in Washington, D.C., included a review of the Granada Relocation Center nomination for designation as a National Historic Landmark. The committee and later the full board voted for approval, and the Granada center was designated as a National Historic Landmark on February 10, 2006, and dedicated on May 20, 2006 (Diane Bell, personal communication 2005; Carrillo, Killam et al. 2004; Soraghan 2006).

### **Historical Overview**

The Granada Relocation Center was located in the Arkansas Valley in Prowers County of extreme southeastern Colorado, roughly one mile southwest of the Town of Granada. It was constructed during the fall and summer of 1942 as one of 10 such camps built to house Japanese-Americans removed from the West Coast under the provisions of Presidential Executive Order 9066. Unlike the other camps which were primarily built on existing public lands, Amache was constructed on land acquired from private landowners through outright purchase or condemnation. The built-up area of the camp center was contained within one square mile of land (640 acres), The camp buildings and structures numbered 569, and nearly all were of modified "theater of operations" buildings, a temporary, military type of construction. The remainder of the project's 10,500 acres included fields and facilities in the vicinity of Granada that were used for a variety of agricultural undertakings. Following the war, the agricultural lands reverted to private farming and ranching. The site was obtained by the Town of Granada, and the buildings were auctioned off or demolished (Carrillo, Killam et al. 2004; Simmons and Simmons 1994).

The designated site consists today of 313.6 acres containing concrete foundations of the center's evacuee housing, administrative, warehouse, military police, and support areas, as well as the camp cemetery. Contributing resources within the site include a brick structure adjacent to the cemetery and a concrete water reservoir. Noncontributing resources include a metal water tank structure and a recent monument memorializing the camp. Today the site is abandoned except for the camp cemetery and for uses associated with the water supply for the Town of Granada, the current owner of the site. Plans are being developed for interpreting and improving access to the site (Carrillo, Killam et al. 2004; Simmons and Simmons 1994).

## **Research Objectives at Camp Amache**

Cuartelejo HP Associates, Inc., undertook a Class III archaeological inventory to assess the present condition of the site and the cultural materials that remained (i.e., foundations, associated features and artifacts) (Carrillo 2001). The results of this inventory and assessment contributed to the development of a Management and Interpretive Master Plan to guide the development and interpretation of the site (Simmons and Simmons 1994).

Based on preliminary indications resulting from previous site visits and a working knowledge of the historical and architectural history of the site, it was anticipated that evidence of the three years that the site was occupied (1942-1945) would be found (Carrillo 2001; Simmons and Simmons 1994). What was not known was the type of physical evidence that would be retrieved. Some of the former blocks had been previously disturbed when concrete foundations were bulldozed to use as rip-rap for erosion and flood control purposes (John Hopper, personal communication 2003). The other handicap concerning expectations was that the site represents a World War II occupation. This type of site is totally different from those commonly found on the landscape of southeastern Colorado. Most historic sites recorded in Colorado usually are attributable to the nineteenth and early twentieth centuries. Sites from this period are only now starting to be recognized as being important national, state, and local elements of the historical and archaeological fabric (Carrillo, Killam et al. 2004; Ellis 2002; Simmons and Simmons 1994).

## **The Fieldwork**

A special "Historical Archaeology DB Artifact Form" was developed to use to record all materials in the field. This form also contains a general block/feature description used to describe the condition of the building foundations and any additional features located within that particular block. A separate form was completed for each of the residential and administrative blocks. The original residential block numbering system was retained to identify each form, and administrative blocks were given arbitrary consecutive numbers. Within each block, intact features or artifact concentrations were assigned feature numbers. The locations of all features were recorded using GPS and a description included on the block form. One or more black and white or color photos were taken of all features. Less formal or less intact features, such as remnants of coal piles, were sketched onto the detailed block map. Photographs were also taken of representative foundations and overall block views.

## **The Results**

The archaeological inventory of Camp Amache resulted in the location and documentation of a wide range of artifacts and features. Artifacts range from building materials and fixture remains, to food cans, bottles, jars, ceramics (Figure 10), personal items, shoes, toys and other children's items, handmade tools, and sake bottles and Japanese porcelain (both can be considered "ethnic markers"). The presence of sake bottles is especially intriguing, given that the official policy for the camps forbade the internees from having alcohol. Liquor bottles and beer cans could be explained as resulting from the administrative staff or the military police, but the sake bottles can be attributed only to the internees. This may be one of the more unique characteristics of Camp Amache; extensive excavations and data recovery conducted at Manzanar, for example, recovered one identifiable sake bottle and one possible sake bottle fragment.

The quantity and quality of features located during the inventory is also significant. Numerous garden areas, borders, and terraces were documented, as well as building and structure additions and modifications. These types of features have been located at most of the camps; some camps, especially Manzanar War Relocation Center in California, contain a large number of gardens, ponds, landscaping and numerous internee inscriptions, far more than located at Amache. Still, the types of features located at Amache are very similar to those at the other camps, and considering that Amache was the smallest camp, perhaps the number of features is equal on a per capita basis. In addition, Manzanar was constructed with a significant contribution of internee labor, whereas Amache was nearly completed when the first internees



began arriving. This would definitely account for the substantially greater number of inscriptions in the concrete features at Manzanar.



Oriental ceramics recovered from the Amache dump during 2003 survey of Granada Relocation Center, or Camp Amache.

**Figure 10.** Oriental ceramics recovered from Camp Amache (photo from Carrillo, Killam et al. 2004).

Other unique characteristics of Amache are the concrete slab foundations in the residential blocks; all the other camps had concrete block foundation footings. Hard as it may be to believe for anyone having visited Amache, especially in recent years, the years Amache was occupied were some of the wettest on record, resulting in the modification of the standardized construction with the slab foundations. As a result, Amache may present visitors with an even clearer and more vivid representation of what the camp was like when it was occupied.

Finally, Amache may have some of the best physical integrity of remains of any of the camps. Many of the visitors encountered during fieldwork mentioned how well preserved the remains at Amache are compared to many, if not most of, the other camps. Taken together, all these characteristics combine to make Camp Amache more than worthy of continued research, preservation, and interpretation. Bonnie J. Clark, Department of Anthropology, University of Denver (and one of this volume's authors), is considering undertaking future field schools at the site of Camp Amache. She also presently is mentoring a graduate student who is researching and planning on writing a master's thesis on Camp Amache (Bonnie J. Clark, personal communication 2005.).

### **Camp Amache Summary**

Archaeological remains and materials are important primarily for their ability to contribute additional information addressing important research questions regarding human history and events. According to National Register Bulletin 15 (NPS 1991:21), one of the reasons a property is considered significant is if it contains the ability to "test a hypothesis or hypotheses about events, groups, or processes in the past that bear on important research questions in the social or natural sciences or the humanities."

The results of the archaeological inventory at Camp Amache indicate that the site retains excellent physical integrity of features, foundations, artifacts and materials. Physical integrity for archaeological remains is considered to be good if "the significant data contained in the property remain sufficiently intact to

yield the expected important information, if the appropriate study techniques are employed” (National Park Service 1991a:23). A cursory comparison to documentation of other relocation camps supports the conclusion that Amache may have some of the best intact cultural remains of any of the camps. This conclusion is further supported by the observations and opinions of numerous visitors to the site encountered during the course of conducting the fieldwork. Many of the visitors, including two graduate students conducting individual projects, have visited other camps, some having been to all of the other camps. Virtually all of the visitors who have visited other camps consider Amache to be one of the best in terms of physical integrity. Evidence of vandalism or unauthorized collection was not noted to any great degree. Most modern disturbance of the site consists of evidence of alcohol consumption (broken modern glass and bottles and cans), bird hunting (shotgun shells), and some disturbance by the cattle that graze on the site.

## **Italians and Italian-Americans**

Italians began to appear on the American landscape in the 1840s, primarily in the mining camps of Arizona and New Mexico, in the lumber camps of Colorado and the Pacific Northwest, and in the vineyards of California. The 1849 California gold rush attracted many to San Francisco. In San Francisco, Denver, Seattle, and other cosmopolitan centers, Italians established newspapers, churches, schools and lodges (Lamar 1977:581; Noel 2005).

Many Italians settled in the states west of the Mississippi River where the largest concentration was in California with 107,249 settled by 1930; however, that number did not match the concentration of Italians that settled in the East. Between 1901 and 1910 more than two million Italians entered the United States, and more than half were farmers. By the next decade only half that number emigrated here. By 1924 a law was passed that reduced the annual Italian immigration to only 5,500 individuals (Lamar 1977:582).

## **Italians and Italian-Americans in Colorado**

The Italian presence in Colorado can be characterized to some extent by their presence in Denver, which Noel (2005) summarizes well. Prior to 1880, there were few Italians in Denver. Between the 1880 census and the 1890 census, Denver’s Italian population went from 86 to 999, a more than ten-fold increase. Thirty years later, the population had tripled from the 1890 level, and “Little Italy” had become established in the north Denver neighborhood of Highland.

The Italian population in Denver started out primarily as peasant vegetable farmers, working small plots on the floodplain of the South Platte River and selling the produce in the city. The farming evolved, as Denver grew, into larger businesses, including restaurants, pasta factories, groceries, and wholesale produce companies (Noel 2005). Many of these industries and businesses remain in Italian family hands today, and in general, Denver’s Italian population enjoyed increased prosperity over time.

Italians who migrated to Colorado tended to be poor and were ridiculed for “their dark complexions, Catholicism, foreign language, different food, and homemade wine” (Noel 2005). They were called “macaroni eaters, wops (without official papers), and Dagos (originally "Diegos," a derogatory term for Hispanics who were confused with Italians). Many lived in tents, shacks, and shanties in the river bottoms and worked hard, poor-paying jobs – building railroads, digging coal, tending truck farms and toiling in smelters” (Noel 2005). Even Mother Frances Xavier Cabrini, herself an Italian and one of the proponents behind the construction of the Our Lady of Mount Carmel Church in Denver’s Little Italy, commented that the hardest work was reserved for the Italian worker when she visited Colorado in 1902 (Noel 2005).

## Ovens and Coins: Ethnicity in Features and Artifacts

### ITALIAN AND ITALIAN-AMERICAN SITES

Italians and Italian-Americans were also present in other parts of Colorado, in particular in the southern and western areas of the state where mining and transportation were major economic activities and jobs were available. Alpine Archaeological Consultants, Inc., Montrose, carried out major data recovery projects in western Colorado and northwestern New Mexico in the late 1990s and early 2000s for the TransColorado Natural Gas Pipeline (with Centennial Archaeology, Inc.) and the Williams Rocky Mountain Expansion Loop (with Woods Canyon Archaeological Consultants, Inc.) (Horn 2001d; Horn and Curtis 2003; Horn, Pfertsh et al. 2003; National Park Service 1991a; Pfertsh 2003d). One of the outcomes of the project was the recovery of historic masonry ovens on four sites. The following represents the manifestation of an ethnic marker in the form of masonry ovens, with some being of Italian origin, but others Greek and German. This is an example of one type of ethnic marker that contains internal variability reflecting unique ethnic characteristics that can be utilized as possible cultural traits.

#### **5LP1915: Cherry Creek Construction Camp**

The Cherry Creek Construction Camp represents a historic Rio Grande Southern Railroad (RGS) construction camp encompassing 4.5 acres situated approximately eight miles southeast of Mancos, Colorado. In the evaluation portion of the site research, Horn et al. (2003) explain that the Cherry Creek Construction Camp was selected for extensive archaeological data recovery because it was thought to represent a work camp that was occupied by Italian laborers in 1890 or 1891 during the construction of the Rio Grande Southern railroad. The historical research indicated that the camp was occupied during the summer or early fall of 1890. Excavations provided additional evidence that the dugouts of the north side of the grade were the quarters of an Italian labor crew, who may have been organized under the padrone system. They seem to have prepared and consumed their food communally and constructed a springhouse and bread oven together. The area on the south side of the grade was originally thought to represent a possible cookhouse area (Horn, Pfertsh et al. 2003).

The site is described by Horn et al. (2003) as being comprised of three distinct areas with 18 features. The northern portion of the site appears to have been used as a location for food preparation, consumption and storage and contained a stone bread oven (Feature 3), in addition to other features. Feature 18 was comprised of a stone oven and was found in association with dugouts that served as residential habitations. Feature 3 and Feature 18 provide examples of one sort of archaeological manifestation that may reflect ethnicity at certain types of sites.

#### **Feature 3**

Feature 3 was a masonry bread oven in the northwestern portion of the site. It initially appeared as an 8-foot-diameter, 2 1/2-foot-tall mound of rubble that was nearly square in plan. Rock had fallen inward and to the sides of the oven, but coursing was visible on the east side.

When excavated, the highest point of the walls was six courses (2 feet 9 inches) high. The north, south, and west walls of the feature were partly set into an east-facing slope with the oven opening to the east, making the oven somewhat subterranean. The partial excavation of the feature into the slope was probably to further insulate it against heat loss. The back (west) wall was estimated to be a foot below the sloped ground surface. However, the southeast corner of the south wall, the northwest corner of north wall, and the entire east wall were constructed above the surface of the ground. The oven opening was 2 feet wide in the center of the east wall. A large rectangular piece of sandstone served as a threshold for the opening. It extended beyond the opening and functioned as a partial foundation for the east wall (Figure 11) (Horn, Pfertsh et al. 2003).



Feature 3, a masonry oven possibly of Italian origin, at the Cherry Creek Construction Camp (5LP1915).

**Figure 11.** Feature 3 at the Cherry Creek Construction Camp (5LP1915) (photo from Horn, Pfertsh et al. 2003).

The foundation of the feature was largely intact, except for an area along the west wall near the southwest corner where slumping caused a section of the wall to detach. The slumping appears to have transpired while the oven was being used because slabs of sandstone were placed vertically against the wall in an effort to repair the damage and arrest the slumping (Horn, Pfertsh et al. 2003).

Based on the investigation of the oven, a method of construction is suggested. After the location for the oven was selected, which seems to have been purposefully at the base of a hill slope, an excavation into the hillside was made. A rectangular stone base was made that was larger than the intended oven superstructure. Wooden stakes were then set on the base marking the interior corners of the oven, and earth was mounded within the staked area, conforming to the interior shape of the intended oven. Stone masonry was then placed over the mounded earth with care taken so that the stones were closely fit. Once the masonry was in position, the earth was removed through the oven doorway and the stone dome became self-supporting. Earth was then placed over the back of the oven at the hillside for insulation (Horn, Pfertsh et al. 2003).

### **Feature 18**

Feature 18 was originally demarcated as a pile of stone 10 feet south of Feature 8. It appeared as a 5-by-7-foot pile of unmodified sandstone rock, oriented generally north to south. Use of a metal detector indicated that buried metal was present in the feature. Artifacts were recovered in the lowest 15 cm of fill above the base of the feature. Excavation revealed a flat, tightly fit sandstone floor that was circular in shape with up to three courses of dry-laid stone remaining around the perimeter. The exterior dimensions were about 5 by 5½ feet, oriented northwest to southeast.

### **5LP1921: The Hook**

The site is the remains of a railroad section house adjacent to the abandoned Rio Grande Southern Railroad grade in the San Juan National Forest in La Plata County. The site is on the southern edge of the La

Plata Mountains approximately six miles east of Mancos, Colorado. The Rio Grande Southern Railroad (RGS) consisted of a narrow gauge line 172 miles in length with 142 bridges and trestles. It served the mines of the San Juan Mountains and facilitated the growth of the region's logging, coal mining, and livestock industries. The railroad also served an important role in the development of southwestern Colorado by providing an important transportation system to facilitate the movement of goods from Denver via the Denver and Rio Grande Railroad to the communities of Montezuma County (i.e., Mancos, Cortez and Dolores). The town of Dolores was established to serve as the economic hub of Montezuma County because of the railroad (Horn and Curtis 2003).

Three features were found at the site, consisting of the remains of two structures and a brick retaining wall with an incorporated fire feature. A concentration of stone found in the center of the leveled area was initially believed to be a potential stone oven, but was actually a concentration of natural cobbles. However, one ethnic indicator was found – “a decorative pin made from an Italian five centesimi coin. The pin was found at the section house and may have been worn as a memento by an Italian worker or the wife of an unidentified section foreman of Italian descent” (Horn and Curtis 2003:30.31).

Horn and Curtis summarize their thoughts:

The Hook was an original maintenance facility of the Rio Grande Southern, constructed by at least early 1892, and was occupied until sometime between 1911 and 1919. A full section crew supervised by a foreman was stationed at the facility initially, but with the diminishing fortunes of the Rio Grande Southern, it subsequently was the residence of individual section men. Staffing probably had considerable turnover, and only a few of the section men have been identified. Typically section crews and section men were of a variety of ethnic affiliations. At the Hook, an Italian individual is suggested by an Italian coin turned into a pin, and a Japanese section man is mentioned in the historical records. Except for the Italian coin, no artifacts or other evidence were found that were ethnically distinctive (2003:30.36).

## **Other Ovens—Other Ethnicities?**

### **5GF1562: CARBONERA**

The historic Uintah Railway townsite of Carbonera is located on 10-acres in West Salt Creek Canyon, approximately 29 miles northwest of Mack, Colorado. The town of Carbonera was a coal-mining and track-maintenance community that developed to supply the Uintah Railway with coal between 1906 and 1939. The expansion of gilsonite mining by the Gilson Asphaltum Company also necessitated an economical transportation system and connection to a transcontinental railway. Many of the section gang workers working for the Uintah Railway were of Greek ancestry. In the 1930s, the population of the town was 24. Just prior to the closing of the railroad in 1938, only between 10 and 20 individuals resided in the town (Pfertsh 2003d).

The site contained two standing dugout structures, four structure locales, and 13 features. One of the features was the remains of the tipple siding coal chute used to load coal from the mine above the town onto Uintah Railway cars.

As with the previous sites found along the TransColorado Natural Gas Pipeline, this site also contained a masonry bread oven (Figure 12). Feature 5 was a masonry brick-lined bread oven set on the slope of a hill near the central portion of the site. The brick-lined bread oven appears to have originally been dome-shaped. The shape of the oven is thought to be a southern Mediterranean type that originated with the Romans. With the expansion of the Roman Empire, the construction style became increasingly widespread throughout the Mediterranean region. In the United States, this type of construction is generally associated with Italian and Greek immigrant railroad construction crews (Rosillon 1984 cited in Pfertsh 2003d; Wegars 1987). The historical record does not indicate the presence of Italian workers living in Carbonera; however, the record indicates the presence of George Komatas, a Greek who immigrated to the United States in 1901 and began working for the Uintah Railway about 1909. He began as a laborer but was promoted to section

crew foreman in the 1910s or 1920s. It is probable that the oven was actually used by Komatas's wife Helene Behrendt, an immigrant from Memel, Germany (Pfertsh 2003d).



Feature 5, a masonry oven possibly of Italian origin, at Carbonera (5GF1562).

**Figure 12.** Feature 5 at Carbonera (5GF1562) (photo from Pfertsh 2003d).

## **Germans and German-American Immigrants in the U.S.**

During the 100-year period from 1815 to 1914 Germans migrated to North America, first from southern Germany, later from northern, and then from eastern Germany. A disproportionately vocal and visible minority of the German migrants were political liberals, facing reprisals from their efforts in the failed March Revolution of 1848 in the German Confederation. The great majority, however, sought to escape from an unpromising and circumscribed peasant life in Germany and to become independent farmers in the American West (Schrover 2006).

The Germans had been invited to emigrate to Russia in 1762 by Catherine II, the German-born empress of Russia, to establish colonies as frontier buffers against Mongols and Turks. They were promised freedom of religion, exemption from military service, free land and monetary subsidies. In 1871 Czar Alexander rescinded their special privileges and from 1873 to 1914 approximately 115,000 German-Russians emigrated to the United States as well as other parts of North and South America. Most migrated to the Great Plains states of North Dakota, Kansas, South Dakota, Nebraska, and Colorado. By 1920, there were 303,532 first- and second-generation German-Russians living in the United States. Colorado had 21,067 German-Russians at that time. The German-Russians successfully adapted to the Great Plains, which were similar to the Russian steppes, and became grain farmers (Lamar 1977:436).

## **Germans and German-Americans in Colorado**

Germans made up the largest and most prosperous of the historic European immigrant classes. They tended to arrive with more wherewithal and usually remained financially well-off once here. A list of prominent historic Germans includes such well-known names as Coors (brewing), Zang (brewing), Richtofen (development), Boettcher (business and finance), and Kuner (canning). (Noel 2005)

Boettcher and other German-born immigrants were joined by Germans from Russia in the 1890s. The Volga-Deutsch, as they were sometimes called, had been enlisted by Catherine the Great to settle in Russia's Volga Valley. After the German-born czarina died, other Russian rulers were less kind to these Teutons, forcing them to join the Russian military and to otherwise become more Russian. Subsequently, thousands fled Russia. Many settled on the Great Plains of North America, including eastern Colorado's South Platte Valley (Lamar 1977:436; Noel 2005).

Germans formed ethnic clubs as early as 1865 when they organized a local branch of the German Turnverein, an international organization dedicated to German culture, exercise and sociability (Noel 2005). Such clubs allowed their members to participate in activities in their native language and partake of resources from their home country. These clubs served to promote retention of many cultural traits. In fact, the Denver Turnverein remains active today.

Germans took a keen interest in public education and persuaded the Colorado legislature to pass a law in 1877 requiring the teaching of German and of gymnastics in the public schools. Colorado, led by an active German element, printed its laws, from 1877 to 1889, in German, as well as in English and Spanish. Several German newspapers were published in Denver. The *Colorado Herald* lasted the longest and championed German causes until it became a casualty of World War II (Noel 2005).

The German population in Denver owned one third of the saloons in the city in 1880 and were active brewers. They also were responsible for the construction of many of Denver's now-historic churches, including Temple Emanuel and St. Elizabeth's. The German religious community represented a diverse array of faiths, including congregations of Catholics, Jews, Methodists, Congregationalists, Baptists, Lutherans, and German Reformed. (Noel 2005)

The German immigrant population and their descendants were relatively prosperous until the early twentieth century when national and international events conspired against them. World War I caused the start of negative feelings in non-Germans ranging from widespread distrust to outright hatred of Germans. Xenophobia made it difficult in all aspects of life for the German population of the country at this time. The embracing of German culture and language prominent in Colorado politics and education came to an abrupt halt. Sauerkraut was renamed "liberty cabbage" and hamburgers "liberty steaks" (Noel 2005), eerily foretelling the modern term "freedom fries," a negative reaction to the French. To make matters even worse, Prohibition, which was implemented in Colorado in 1916, deprived the many brewers and saloon owners of their livelihood. In Colorado, the German population never fully recovered from these unfortunate circumstances (Noel 2005).

### **5ME6826: THE STITZ PLACE**

Site 5ME6826, the Stitz Place, is a historic residential complex that is located on the south side of Plateau Creek about two miles northwest of Mesa in western Colorado. The site is on land purchased from the U.S. government as a 160-acre homestead by Isaac Harvey in 1896. After passing through three landowners, the property was bought by Anna E. Stitz in 1900. She retained ownership until 1918. The artifacts at the site suggest that all the remains present are related to the occupation of Anna Stitz and her family between 1900 and 1918. Karl Stitz was born in Bavaria, Germany, in 1865 and was 45 in 1910. He worked as an engineer at a pumping plant. He became a naturalized citizen in Leadville in 1899. Anna was born in 1876 and was 34 in 1910. She was born in Nebraska to German immigrants. All of their children were born in Colorado (Horn 2001d).

A native-stone bread oven with a domed cap of concrete (Structure 1) was identified on the southeast section of the site, in addition to five other features. The bread oven is constructed of dry-laid, semicoursed sandstone slabs and blocks and basalt cobbles (Figure 13). The interior is finished with a smooth concrete and a nine-inch diameter ribbed can is built into the concrete roof near the back of the oven for a chimney (Horn 2001d).

The stone oven was initially thought to represent a possible Italian ethnic background for the site occupants. No artifacts of Italian affinity were recovered from the site, and it appears that stone bread ovens may have precursors over a larger area of southern Europe than had been previously assumed and may be more typical of Greece, northern Italy, and southern Germany and even extending into Austria and Switzerland. Additionally, rectangular ovens with arched roofs may be more typical of southern German ethnicity, in contrast to the dome-shaped ovens associated with Italians and Greeks. Certainly, in this case, the inhabitants were of German ancestry, supporting the idea of a broader distribution of the oven style than just Italy and Greece.



Structure 1, a masonry bread oven possibly of German origin, at the Stitz Place (5ME6826).

**Figure 13.** Structure 1 at the Stitz Place (5ME6826) (photo from Horn 2001d).

### **Historic Ethnic Groups Having No Archaeological Contexts**

Before the New Mexican Hispanic sites are addressed, which have an array of archaeological manifestations, I will briefly review the largest ethnic groups in Colorado that have no archaeological associations, either real or perceived. The goal is to prod all Colorado archaeologists into beginning to develop methods to address all ethnic groups in Colorado to better understand the rich archaeological history of these historical groups. The following groups – Irish, English, Swedes and Scots – are the most numerous and typically represent Colorado’s ethnic white majority, which, along with the previously discussed Italians and Germans which have some, albeit limited, historical archaeology contexts.. According to Thomas Noel, these ethnic groups made up many of Colorado’s pioneer population that “came from New York, Ohio, Illinois, and Missouri. In more recent times, many have also come from Texas and California in Denver” (Noel 1997). A brief review of these groups is provided below.

The people who migrated to Colorado in the 19<sup>th</sup> century were derived from diverse origins. Many of them were immigrants from the Great Britain and the British Isles. The Colorado gold rush in 1858 and 1859 created the first permanent settlements of Northern Europeans and Americans of European descent in Colorado. Many of the immigrants were former hard rock miners from Cornwall, England. Later, farmers from central Europe immigrated to Colorado (Smith and Huber 2002).



## **THE IRISH**

The Irish initially began to immigrate to America during the Colonial Period. They immigrated in increasingly large numbers over the next two centuries. Between 1820 and 1860, the Irish constituted over one third of all immigrants to the United States. In the 1840s, they comprised nearly half of all immigrants to this nation. Between 1820 and 1930, approximately 4.5 million Irish arrived in America. The migrations that occurred prior to the Irish famine were primarily made up of males. During the famine years and after, entire families were migrating to America and in the later years the majority of the immigrants were comprised of women (Library of Congress 2002a, b).

The Irish population constituted Denver's second largest immigrant group in the nineteenth century, after the Germans. The Irish were a visible constituency in Denver and involved in politics, saloons, clubs, and churches. Irish were elected to positions on the Denver city council, and as mayor, though they did not reach the governor's office until 1957 (Noel 1997).

The Irish came to Colorado and Denver often as miners or railroad workers, calling themselves "terriers" (Noel 1997). This group of Irish tended to make Denver their home, and congregated in northeast and northwest Denver (Noel 1997).

Lamar indicates that:

Even before the United States had obtained the Mexican cession, Irishmen appeared in the Far West, not as forerunners of later immigrants but rather as solitary adventurers... Even though the immigrants worked the soil in Ireland, they showed little inclination for turning to it in America... The persistent Irish choice, even in the West, was urban rather than rural life (1977:577).

## **THE ENGLISH**

In Denver the English were the third most populous group historically. Because they shared the language of the United States, and many of the cultural traits of this country, the English tended to be less visible and tended also to assimilate more into the American way of life rather than preserve nuances of their own culture. This was fostered by the significant amount of English investment in Colorado industries, including mining and ranching but perhaps most importantly, railroads (Noel 1997).

Railroads were first developed in England and with financing from British interests, helped to boost the development of the railroad industry in Colorado. One example was the Denver and Rio Grande Railroad (D&RG) which was financed with British investments. A book entitled *New Tracks in North America* written in 1870 by Dr. William A. Bell, Jr., served to promote Colorado railroads to English capitalists (Carrillo and Jepson 1995; Lamar 1977:992-998; Noel 1997). An interesting assertion by Noel (1997) concerning the English and Angloamerican's perceived inherent superiority is buttressed in an 1869 review of Bell's then newly released book. The article states:

This is an unusually important book of travels, giving interesting particulars of the vast wild Western country which, though still the home of the Apache and the Buffalo, is every day being more and more brought into subjection by the settlers, traders, miners, capitalists, and railways of the "Anglo-Saxons" of America, as Dr. Bell calls them (Board of Regents of the University of Wisconsin System 2004).

Ranching was also an avid interest to the English. Visitors who stayed at the Brown Palace and Denver's other elegant hotels and toured Capitol Hill's elegant mansion districts might be led to conclude that the English were responsible for setting Denver's standards (Noel 1997).

## **THE SWEDISH**

Denver had the eighth-largest population of Swedes among cities in the United States in 1890. Other Scandinavian populations included the Danes and Norwegians, though neither as numerous as the Swedes.

Swedish immigrants made up the fourth-largest foreign-born group in Denver according to the 1900 census. Like the Germans, clubs and societies were an important part of life here; the Skandia Benevolent Association was founded in 1876. (Noel 1997)

Scandinavians and Germans also formed a small population in rural areas of the Plains states living on ranches and in small towns away from the major metropolitan areas (Lamar 1977:535-537; Luebke 1977).

Most Swedes who immigrated to the United States and to Colorado probably did not intend to stay. Commonly they were bachelors intent on finding work and then returning home to Sweden, or back to homes in the Midwest if they had already settled there. In the cities of the Front Range of Colorado, especially Boulder and Denver, Swedes tended to take up residence near their churches and many were employed in the smelters in northeast Denver. The gold and silver processing decline in the late 1800s and early 1900s hit many hard, and farming became a livelihood in place of work in the minerals processing industries (Noel 1997).

## **THE SCOTS**

A Scottish population of about 1000 lived in Colorado at the time of the 1890 census. The Scots tended to assimilate into the local American culture readily, as did the English. However, the Scots did form clubs such as the Caledonian Club and the St. Andrews Society, and there was a “Scottish Village” in north Denver laid out not in typical grid street pattern but with curved streets bearing Scottish names. (Noel 1997).

## **SUMMARY**

The groups briefly outlined above are unique in that it appears that they all merged eventually into the dominant Anglo culture, especially the English and Scots. Apparently, ethnicity was not a major factor in defining these groups. When viewed from an historical perspective, these groups are assumed to not maintain former ethnic identities. Some preliminary attempts have been made to identify the potential artifact patterns that can help define Anglo-American sites, in general, but not specific ethnicities. This was carried out to define obvious differences in Hispanic and Anglo-American sites and is described in the following section. There may be specific archaeological patterns that can help define these groups according to their ethnicities even though the groups themselves may not recognize their existence. This need for group definition is one of the reasons that it is important to undertake historical research, in courthouse records, newspapers, church records, etc., relative to historic sites to more adequately define the groups whose remains archaeologists are studying. Understanding the cultural background of former occupants of an historic site is crucial to understanding the archaeological remains.

## **New Mexican Hispanic Sites: The Archaeological Manifestations**

A total of 384 sites are attributable to Hispanic occupants. The sites are distributed mainly along the southern, western, and northwestern counties of Colorado (Table 12, Figure 14). Although sites exist throughout the counties noted above, the Hispanic cultural landscape in southeastern Colorado is emphasized because it represents the region where the major historical archaeology research has been carried out related to ethnicity (Carrillo 1985, 1990a; Carrillo et al. 2003; Church 2001; Clark 2003).

## **THE HISPANIC IMPACT IN *LAS PROVINCIAS INTERNAS***

The New Mexican Hispanics had their historic origins in New Mexico toward the end of the sixteenth century and represent an ethnic group that has an established historical and archaeological settlement history in Colorado beginning in the 1840s. Ethnohistorical and archaeological data from southeastern Colorado is used to outline the basic tenets of this section of this chapter.

**Table 12.** Hispanic sites in Colorado counties.

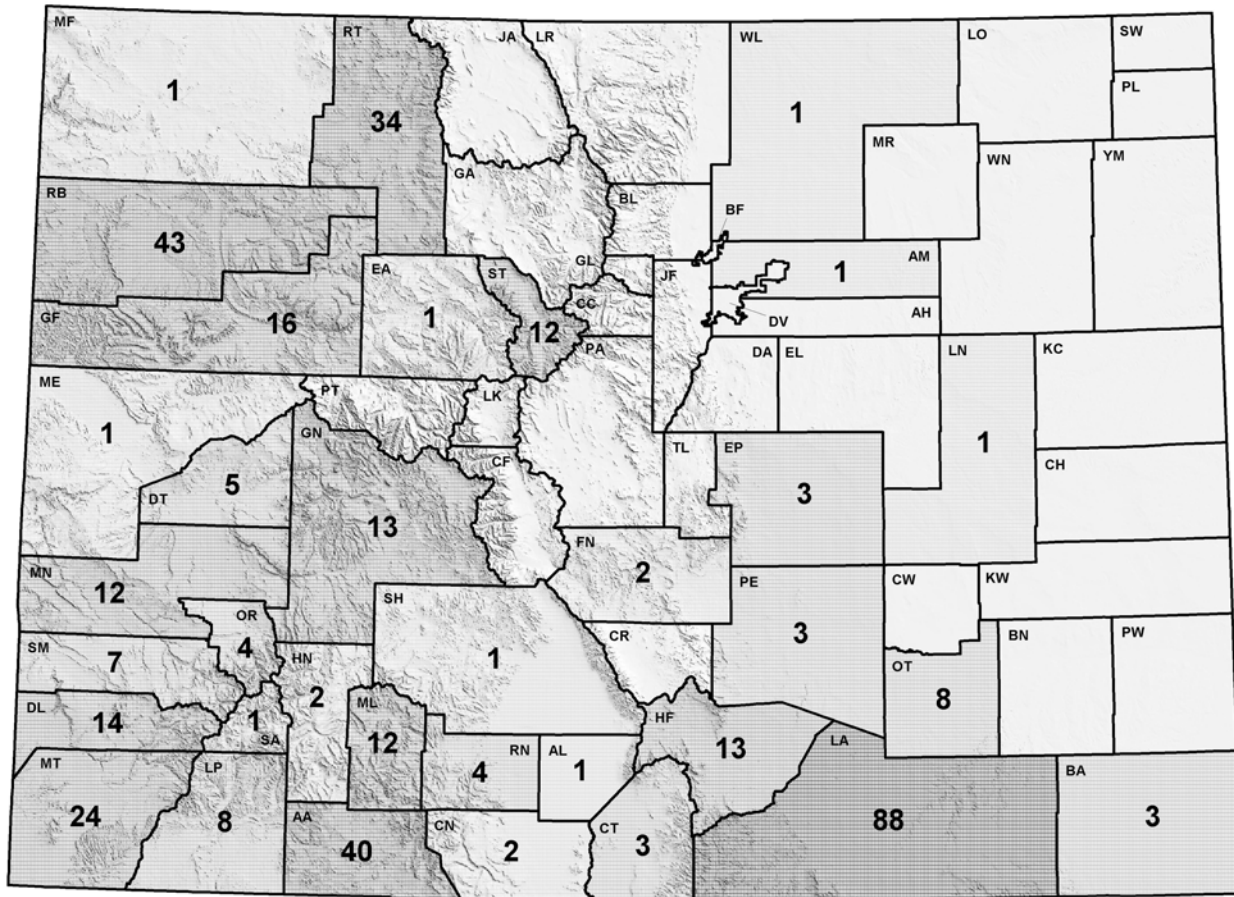
Number of Sites	County	Number of Sites	County
40	Archuleta	1	Lincoln
1	Alamosa	1	Mesa
1	Adams	12	Mineral
3	Baca	1	Moffat
2	Conejos	24	Montezuma
3	Costilla	12	Montrose
14	Dolores	8	Otero
5	Delta	4	Ouray
1	Eagle	3	Pueblo
3	El Paso	43	Rio Blanco
2	Fremont	4	Rio Grande
16	Garfield	34	Routt
13	Gunnison	1	Saguache
2	Hinsdale	1	San Juan
13	Huerfano	7	San Miguel
8	La Plata	12	Summit
88	Las Animas	1	Weld
Total Number of Sites 384			

## THE HISTORICAL CONTEXT

The historical use and occupation of southeastern Colorado spans the period from the A.D. 1600s to the present. Historical documentation indicates the presence of Spanish, French, and American exploration parties beginning in the late 1600s through the 1800s, and New Mexican *Comanchero* trading and *cibolero* hunting parties from the 1700s through the 1870s (Athearn 1985; Friedman 1985:63-74; Kenner 1969; Mehls and Carter 1984; Weber 1982). Historical documentation attests to the extensive Native American utilization of the area during the historic era; however, very few archaeological sites reflecting their use have been identified (Buckles and Buckles 1984:20; Carrillo 1985:77-111; 1990b). The current number of Native Americans sites associated with the historic period is 17 statewide, according to the Compass database. This number reflects a problem that researchers have encountered relative to the idea of ethnicity on historic sites in Colorado. The patterns that define ethnicity [i.e., corner fireplaces (*fogon*) and extraneous artifacts such as modified glass that is attributable to Hispanic New Mexicans, ovens built by Italians, Greeks or Germans and New Mexicans, Italian coins, Chinese-manufactured artifacts, the patterning of structures, and other undefined attributes that may help to identify alternate ethnicities] have not been adequately addressed by those undertaking historical archaeological research in Colorado.

Much of southeastern Colorado was an historical frontier in both the American and European sense. In the American lexicon a frontier represents an unsettled or sparsely settled zone, or the edge of "civilization." On the other hand, the European perspective views frontiers as boundaries or borders between nations, provinces, or ethnic groups. Historically in southeastern Colorado the way people viewed their frontiers varied according to their cultural perspective. The region of the Arkansas River and its major tributaries, the Purgatoire and the Huerfano, represented the extreme northern edge of a vast southwestern Hispanic territory known as *Las Provincias Internas* (the interior provinces) and comprised the provinces of Durango, Chihuahua, New Mexico, and Texas.

The Spanish referred to the present southeastern Colorado region as *El Cuartelejo*, or "The Far Quarter" (Thomas 1935). Today the former Spanish-controlled area is identified by historians as the Spanish Borderlands (Bolton 1964), and the region of southeastern Colorado as the Mexican Rim; (Carrillo 1990b; Carrillo et al. 2003).



**Distribution of sites with Hispanic components, count per county shown (N=384)**

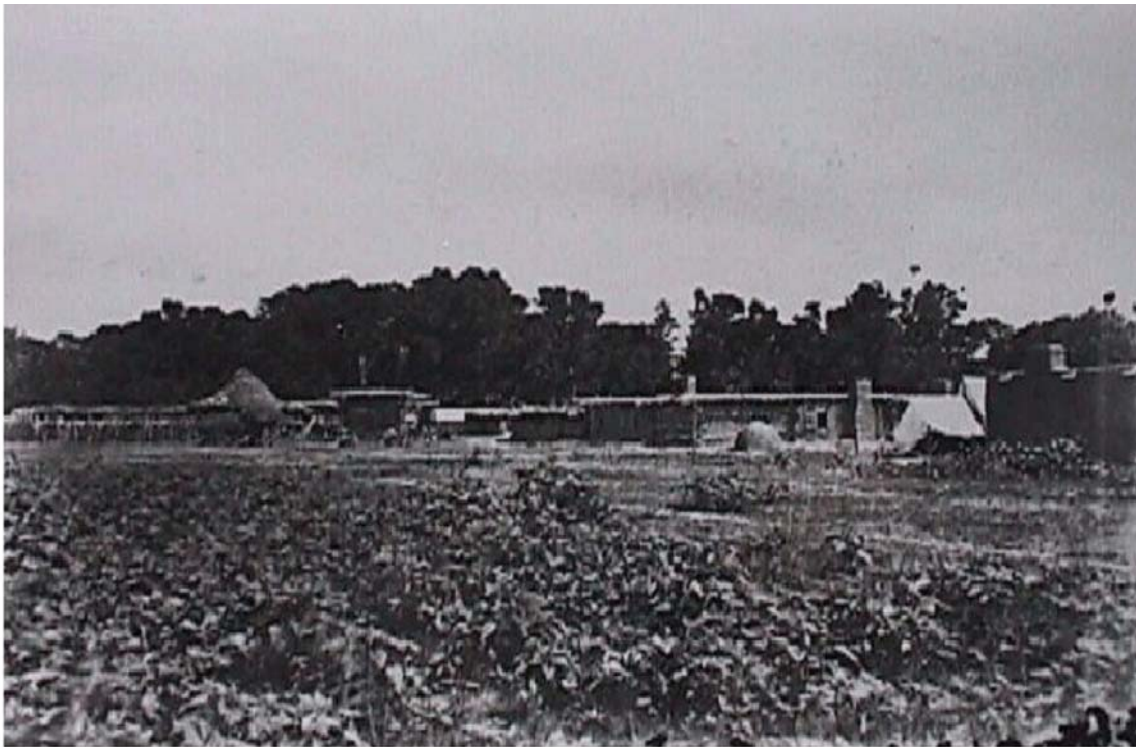
**Figure 14.** Hispanic site distributions in Colorado counties.

Southeastern Colorado at the period of contact represented a corridor used by northern Pueblo and Plains Apache groups for trade and hunting (Baugh 1984, 1991; Church 2001). The region of *El Cuartelejo* is known through historical accounts that document the area by Spanish expeditions beginning in the late sixteenth century, military excursions continuing throughout the eighteenth century, such as Juan de Ulibarri's in 1706, and utilization of the region in the early nineteenth century (Thomas 1935). By the late eighteenth century through the 1870s, the region was used by New Mexican *ciboleros* and *Comancheros* on hunting and trading excursions. The mouth of the Purgatoire River, known as *la nutria* (the place of the beaver), served as a trading location during the last two decades of Spanish control of New Mexico (Weber 1992).

Zebulon Pike mentions Spanish camps along the Arkansas River and “a Spanish trace” (trail) ascending the mouth of Purgatoire River with the Arkansas River (Coues 1987). The Arkansas River served as the international boundary between territories held by France and Spain before 1803, then as the boundary between the territories of Spain and the United States, and was officially recognized in the Adams-Onís, or Transcontinental Treaty of 1819. After 1821, it was the border between the United States and Mexico until 1848, when it became a part of the United States after the Mexican War with the signing of the Treaty of Guadalupe Hidalgo (Carrillo et al. 2003).

The initial New Mexican frontier settlement movements into the San Luis Valley in the late 1840s and early 1850s were followed by permanent settlement in the regions of the Arkansas and Purgatoire valleys in the late 1850s and early 1860s. The settlements were on claims derived through 1840s Mexican land

grants. The earliest settlement in both the upper and lower portions of the Purgatoire River valley occurred almost simultaneously. The upper Purgatoire settlements initially consisted of groups of families who moved into the region from northern New Mexico and built plazas, which housed extended families. The settlements started in the lower Purgatoire valley were mainly composed of Anglo-Americans, specifically Missourians, such as William Bent, Thomas Boggs, John Prowers, Kit Carson, and others. All of these individuals had been employed by Bent, St. Vrain and Company throughout the 1830s and 1840s at the company's adobe fort (Bent's Fort or Fort William) and by William Bent in the 1850s at his new stone fort at Big Timbers. Most of these men were married or cohabiting with Native American or Hispanic women (Carrillo and Petersen 2005; Carrillo et al. 1997; Carrillo et al. 2003; Clark 1996) (Figure 15; Figure 16, below).

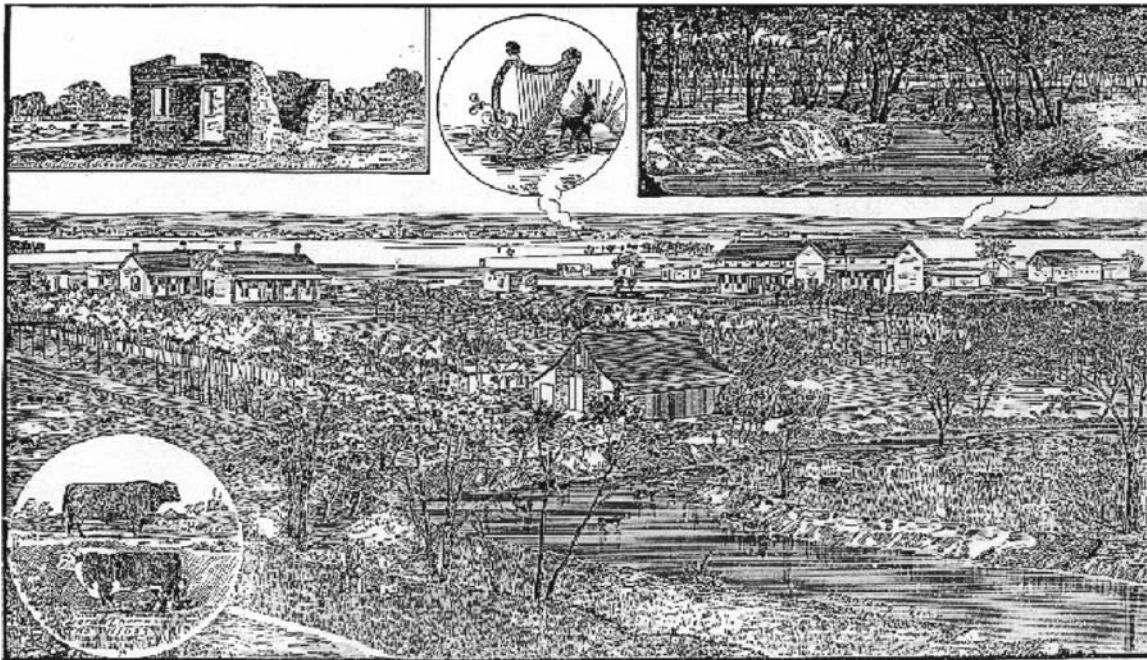


1867 "Boggs Ranche." Architecture is Hispanic New Mexican and consists of *fuertes* (log cabins) and *jacales* (vertical pole) and one adobe structure, which was the newly built trading house. Also note *homo* (oven). The photograph is believed to have been taken by Dr. William Bell during a survey by the Kansas Pacific Railroad to locate a route to California (Courtesy Boggsville Historic Site/Pioneer Historical Society of Bent County/Missouri Historical Society).

**Figure 15.** "Boggs Ranche" in 1867 on the Purgatoire River.

These new settlers brought with them two contrasting cultural systems. The northern advancing New Mexicans brought a 250-year-old frontier tradition that incorporated Iberian, Moorish, Pueblo, and Plains cultural influences (Carrillo 1990b). The Anglo-American introduced the cash-based economic system and all its attendant material manifestations. The material remains of this latter system are found throughout the majority of the historic sites in southeastern Colorado. These sites span the entire settlement periods beginning with the Territorial period (1861-1875) through the first half of the twentieth century, as represented by architectural and artifactual remains. Conversely, the material manifestations of the Hispanic settlers do not mirror those of the Anglo-Americans during the Territorial period, and aspects of traditional culture continue to be evidenced archaeologically into twentieth-century sites through the 1930s. Sites thought to be attributable to New Mexican Hispanics are very much in evidence, but they do not conform to an archaeological pattern that represents what could loosely be considered a nineteenth-century American artifact pattern represented by Euroamerican material culture. To arrive at explanations, the use of ethnohistorical data is necessary (Carrillo et al. 2003).





*San Patricio Ranch in 1888, the former settlement of Boggsville. Boggs House at left; Prowers House at right; Kit Carson House located behind (west) of the barn (former Prower's Trading House). (Courtesy of Boggsville Historic Site/Pioneer Historical Society of Bent County and Denver Public Library, Western History Collection [call # X-11378].)*

**Figure 16.** San Patricio Ranch (Boggsville) in 1888.

The examples of the ethnohistorical data are taken from historical accounts of Anglo-Americans who were involved in the U.S. military, the Santa Fe trade, and sources who settled the Purgatoire and Arkansas River valleys, among others. The time period represented spans from the early 1820s, when Mexico gained independence from Spain and the Santa Fe Trail trade commenced, to the twentieth century. The archaeological data are drawn from field survey and excavations in the region (Carrillo 1990a; Carrillo and Kalasz 1990; Carrillo and Petersen 1996; Carrillo et al. 1989; Carrillo et al. 1997; Carrillo et al. 2003; Church 2001, 2002; Clark 2003; Earles et al. 1987; Hardesty et al. 1995; Kempton and Carrillo 1990; Reed and Horn 1995b). The intent is to present the historical antecedents that were initially observed in New Mexico beginning in the 1820s and to follow them into the Purgatoire Valley, where similar events were still occurring at the time of settlement in the 1860s and 1870s and continued into the twentieth century. This survey serves to demonstrate the deeply rooted traditions of the Hispanic frontier culture and further aids in explaining some of the enigmatic archaeological observations in southeastern Colorado. This discussion serves, in a limited manner, to provide a framework to counteract the false perception that in 1846 New Mexicans were waiting on the south side of the Arkansas River for the Americans to come to their economic and political rescue.

The Hispanic subsistence system of the Purgatoire region had undergone adaptations over a period of 250 years or more and incorporated many of the customs of the indigenous Native Americans. The introduction of the Anglo-American cash-based economic system created extensive changes in the New Mexican system, commencing in New Mexico in the early 1820s and extending into southeastern Colorado in the 1830s with the construction of Bent's Fort on the north bank (American) of the Arkansas River. American influence in the region began to accelerate after the Mexican War in the late 1840s with the construction of military forts in New Mexico and in present-day Colorado. With the discovery of gold in the Colorado mountains in the late 1850s, American influence eventually became predominant in the early 1860s. These

mechanisms caused basic changes in the traditional subsistence system of the New Mexicans. The changes occurred differentially, initially affecting the New Mexican urban centers such as Santa Fe, and over the succeeding years began to appear in the frontier regions, such as the Purgatoire and Arkansas river valleys (Carrillo et al. 2003).

Southeastern Colorado's environment limited the types of human activities that could be carried out successfully. The broad, open spaces and rolling terrain initially led Americans to view the Arkansas and Purgatoire valleys as routes to be traveled to New Mexico and other western destinations. Transportation continued and intensified as a major land use in the area during the period of U.S. control. This activity increased the intermingling of cultures in the area and served to break the isolation of the region by the second half of the nineteenth century. The development of new transportation systems, first stagecoaches and freight wagons and later the Atchison, Topeka and Santa Fe Railway (AT&SF) made the marketplaces and goods of America's emerging industries available to the area's residents with disposable cash.

Additionally, farming in the traditional Anglo-American sense proved all but impossible. Grazing dominated the land-use patterns, and traditional agriculture was limited to those areas along the rivers and streams that could be irrigated by using basic diversion systems comprising large ditches (*acequia madre*) and laterals (*acequias*) (Carrillo 1990b; Carrillo et al. 2003; Taylor 1971).

## **ETHNICITY ON THE HISTORIC SITES FROM SOUTHEASTERN COLORADO**

Most historic sites in southeastern Colorado, based on the recorded sites in the Purgatoire Valley, contain Euroamerican material culture and offer a baseline that addresses both functional and temporal explanations (Carrillo 1990b; Carrillo et al. 2003; Church 2001, 2002; Clark 2003). Based on historical archaeology, and archival and historical research, it appears the majority of these sites are associated with Anglo-Americans who began to settle the region of southeastern Colorado in the early 1860s, largely as a response to the gold rush in the Colorado mountains. A smaller, less well-defined group of sites have been addressed based on studies from northern New Mexico and southeastern Colorado. These sites are considered multicomponent sites, which exhibit few or no Anglo-American artifacts but which do contain lithics and groundstone. In addition, several sites contain minimal and selective amounts of Anglo-American artifacts, mainly tin cans and bottle glass. In some cases the bottle glass appears to have been modified by knapping in a fashion similar to that on flaked prehistoric stone tools. These sites are thought to represent the material remains attributable, for the most part, to New Mexican Hispanics who settled the Purgatoire River valley in the 1860s and 1870s. The sites appear to have undergone considerable change through time, although still retaining some aspects of the traditional culture (Carrillo 1990a; Carrillo et al. 2003).

## **THE HISTORICAL ARCHAEOLOGY MODEL**

The historical archaeology model is based on K. R. Weber's (1980) concept of the economic orientation of Hispanic and Anglo-American settlers. The overall objective is to use archaeological data to attempt to demonstrate sociocultural and socioeconomic variables indicative of cultural change. It is postulated that the archaeological sites representative of Hispanic groups will show, through time, a change from a primarily subsistence economy to the cash-based market economy system introduced by the Anglo-American settlers. The Anglo-American-related sites are expected to show a conspicuous infusion of Anglo-American material culture through time and reflect a cash-based economy (Carrillo 1990a; Carrillo et al. 2003).

The basic archaeological model under which the historical research problems are being tested represents the most relevant approach to generate archaeological explanations. It represents an effort to place southeastern Colorado in its larger ecological and economic contexts and to take into consideration fundamental changes in sociocultural and socioeconomic organization (Carrillo 1985:79-81; 1990a; Carrillo et al. 2003).

The pattern of historic settlement and economy postulated by the historical archaeology model suggests that in the late 1700s, Hispanic New Mexico was small in size but the population was expanding. The population was based on a limited extractive technology and lived by farming and shepherding. As the population increased and the frontier areas were secured, the populations expanded north and east of the nuclear settlement area of Santa Fe and areas along the Rio Grande. This emigration was two-dimensional: from the core areas to the peripheral areas, and migrations to California and, later, to Colorado. Several reasons account for the population expansion: 1) the combination of population pressures in the established settlements, 2) the reduction of the Indian threat, and 3) the availability of open land which continued to attract settlers and herders to the eastern Plains through the mid-1800s. Additionally, economic opportunities not available in the New Mexico economy helped spur emigration. In the early 1850s this consisted particularly of imported goods and the potential for marketing sheep outside the region (Carrillo 1985:79-81; 1990b; Carrillo et al. 2003; Kutsche et al. 1976:5-6; Weber 1980:54).

By the 1860s, the emigrants learned that

available land was finite. It was not so much a question of reaching the ecological boundaries for sheep grazing but of encountering others using the same resource base. Hispanic ranchers had by this time expanded far beyond their own nuclear areas into what is now eastern Arizona, eastern New Mexico, western Texas, and southern Colorado where they encountered other ranchers who also thought the range was unlimited and theirs for the taking (Weber 1980:54-55).

## **The Historical Archaeology of the Hispanic Cultural Landscape**

### **INTRODUCTION**

In 1990 a historical context represented by a historical overview, a historical research design, a historical feature and site-type analysis, and an artifact analysis were undertaken for the Piñon Canyon Maneuver site (PCMS) in southeastern Colorado. The context was a result of previous surveys conducted during 1983, 1984, and 1987 (Carrillo 1990a, b; Carrillo and Kalasz 1990; Kempton and Carrillo 1990). The 1990 effort was the first concerted attempt to understand the historical archaeology of southeastern Colorado. Subsequent historical archaeology research has been undertaken by Church (2001) and Clark (2003), and an updated context was developed in 2003 (Carrillo et al. 2003). The following represents a synopsis of both the initial and subsequent study results.

As previously noted, the historical use and occupation of southeastern Colorado spans the period from the A.D. 1600s to the present. Historical documentation indicates the presence of Spanish, French, and American exploration parties beginning in the late 1600s through the 1800s, and New Mexican *Comanchero* trading and *cibolero* hunting parties from the 1700s through the 1870s (Athearn 1985; Friedman 1985:63-74; Kenner 1969; Mehls and Carter 1984; Weber 1982). Although documentation exists for extensive Native American use of the area during the historic era, very few archaeological sites representing this use have been identified (Buckles and Buckles 1984:20; Carrillo 1985:77-111).

A historical schematic was developed in an attempt to place the archaeological sites within a temporal framework. The historical framework encompassed the Spanish and Mexican periods in Colorado; however, because of the high occurrence and complexity of the majority of the sites at the PCMS representing the American period, a series of subperiods were developed using the historical framework that had been utilized by Buckles and Buckles (1984) (Figure 17).

Most of the sites recorded to date relate to the settlement and utilization of the project area by agriculturists. Some of the remaining sites are related to transportation and attempts at increasing urbanization in the region. Subperiod I of the American period officially begins in the late 1840s and lasts through the 1850s after the Mexican-American War; however the majority of the sites in the PCMS and throughout southeastern Colorado date to Subperiods II, III, or IV of the American period, and these are therefore emphasized (Buckles and Buckles 1984:20-72). A brief review of each of these periods follows.



## Subperiods and Events of the American Period (1850-1983)

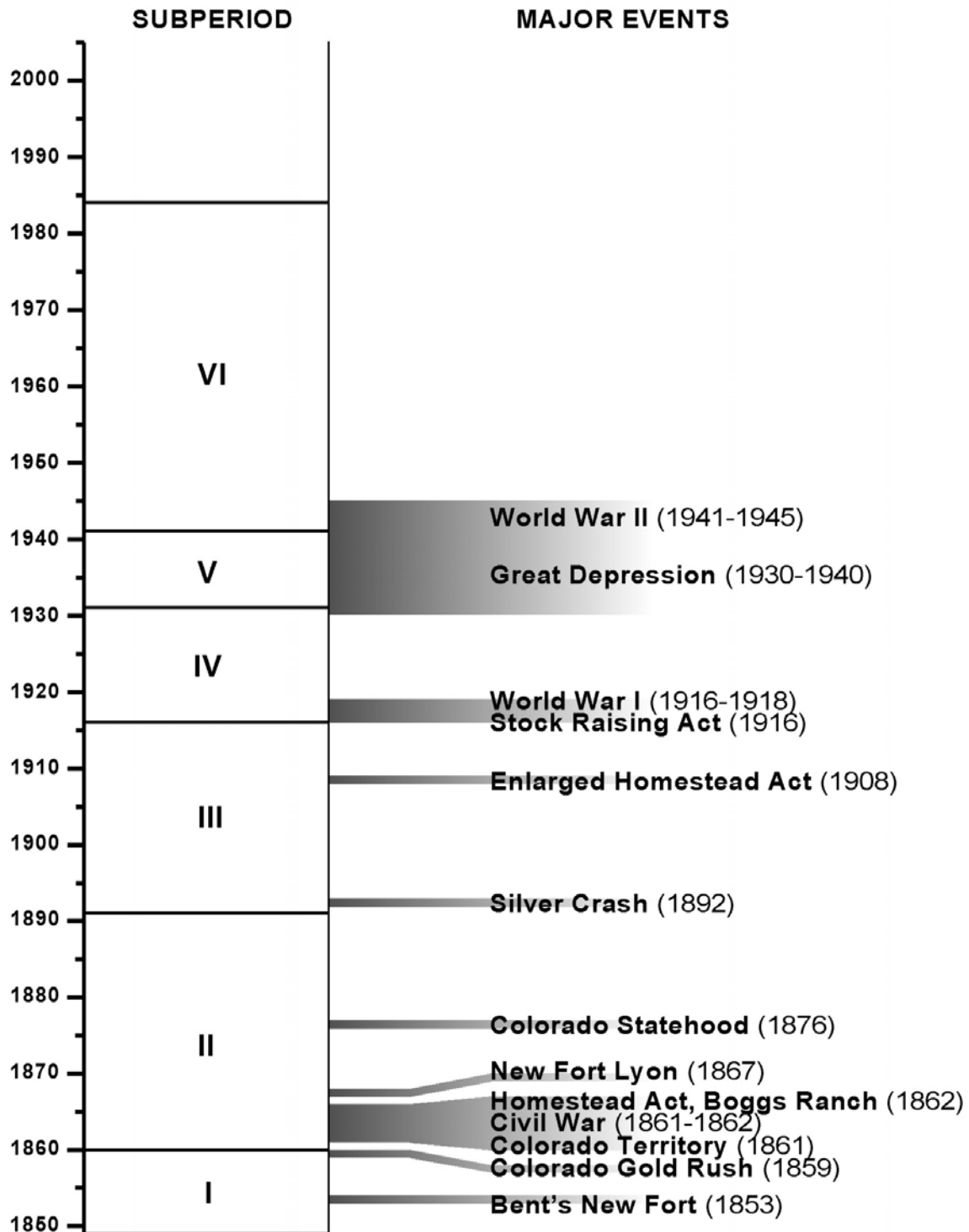


Figure 17. Southern Colorado historical chronology – American Period.

## **SUBPERIOD I, 1848-1859**

The earliest archivally documented settlement in the southern Colorado, Subperiod I, dates to the early 1850s, a few years after the Treaty of Guadalupe Hidalgo was signed in 1848, when settlement in the San Luis Valley began to occur. Documented use of the Purgatoire includes trade fairs by New Mexican at the mouth of the Purgatoire around 1819. Sheep ranching and livestock raising in the Purgatoire area that was the precursor to *Boggsville* around the 1840s and 1850s also took place.

## **SUBPERIOD II, 1860-1890**

Permanent settlement in the general Purgatoire Valley began in the 1860s, during Subperiod II. Many of the initial settlers of southern Colorado were Hispanics from northern New Mexico, along with a minority of Anglo-Americans from the eastern, midwestern, and southern sections of the United States or northern European immigrants. They acquired their land under the provisions of the Homestead Act of 1862, although many squatters were also present. The early residents resided primarily along the Purgatoire River and its tributaries. Severe drought and blizzard conditions forced many of the early settlers out of the area in the mid- to-late 1880s (Carrillo 1990a, b; Carrillo et al. 1989; Carrillo et al. 2003).

Based on known archival and archaeological data, the early settlements have only a few archivally documented sites dating to the early Subperiod II. Sites from this time are identified by the presence of a distinct artifact assemblage. This assemblage includes diagnostic firearm cartridges, initially rimfire in large calibers (.50 and .40 calibers), and after 1873, centerfire cartridges in large calibers (e.g., .40 caliber); bottle glass (olive green, amber, and lime green in the 1860s; aqua in the 1870s; amethyst in the 1880s). Both bottles and canning jars are present. Clear glass may be present throughout all of these periods, although in varying quantities. Hole-in-top hand soldered tin cans date to the 1860s and 1870s and machine soldered cans to the 1880s through early 1900s. Machine-cut nails would be from the early 1890s as would and ceramics (both white and decorated earthenware, improved earthenware, and both earthenware and stoneware utilitarian wares) (Buckles and Buckles 1984:33; Carrillo 1990a, b; Carrillo et al. 1989:421; Carrillo et al. 2003).

## **SUBPERIOD III, 1891-1915**

During Subperiod III, large Anglo-American and European interests controlled and dominated the open range. Settlement was sparse, and as a result this subperiod is not well documented. The typical artifact assemblage generally resembles that of earlier subperiod sites with some stylistic differences. These include, but are not limited to, smaller caliber smokeless powder cartridges in the range of .30 caliber for rifles. The use of shotgun increases around the turn of the century. Although the shotgun was available, the pattern in southeastern Colorado reveals a conservatism in their use because of their cost. The earlier black powder cartridges continue to be utilized at least into the 1930s and possibly the early 1940s, when production ceased at the beginning of World War II. Machine-cut and wire nails and machine-soldered and sanitary tin cans were also present (Buckles and Buckles 1984:47-52; Carrillo 1990a, b; Carrillo et al. 1989:422; Carrillo et al. 1995; Carrillo et al. 2003).

## **SUBPERIOD IV, 1916-1930**

The Enlarged Homestead Act of 1909 and the Stock Raising Act of 1916 caused the demise of raising livestock on the open range.

A few years of rainfall on the Plains, rising agriculture prices, the introduction of the railroads in conjunction with the Dry Farming Movement, and the increased size of homestead parcels allowed by new Federal regulations, all worked to stimulate a land rush to this region. The new homesteaders were mainly Anglo Americans who came from the neighboring Plains states of Texas, Oklahoma, Kansas, Nebraska, and Missouri. They staked out their 320 and 640 acre [129.5 and 259.0 ha] claims on the flats and tried to dry farm. Then came the drought of the mid-1920s and the Great Depression of the 1930s. Many of the new homesteaders were forced off of their land, losing their property for back taxes or selling out to their more successful neighbors (Friedman 1985:395).

The abandonment of these homesteads allowed the more established ranchers to acquire or lease larger tracts of land. However, some post-1910 homesteaders adapted to raising livestock and managed to acquire sizable land holdings. By 1930, the development of new settlement in the area was terminated with the establishment of the large family ranching operations (Carrillo 1990a, b; Carrillo et al. 2003).

The 1916-1930 Subperiod IV sites are the most numerous in southeastern Colorado. These sites contain considerable evidence of conspicuous consumption through greater quantities of material remains than the earlier sites. The sites can be identified by certain types of diagnostic artifacts comprising large quantities of bottle glass (amethyst, amber, clear, and blue); cartridges (smaller caliber [.30] and more manufacturers) and shotgun shells; primarily sanitary-type tin cans (milk cans continue to have a small lead seal on top); and the exclusive use of wire nails and more window glass in building construction. Architecturally, the sites may range from a single dugout depression to several elaborate stone foundation remains or ruins (Buckles and Buckles 1984:53-57; Carrillo 1990a, b; Carrillo et al. 1989:423; Carrillo et al. 2003).

## **Ethnicity on the Historic Sites from Southeastern Colorado: An Example from the PCMS**

### **INTRODUCTION**

As noted above, historic sites in southeastern Colorado usually contain manufactured items attributable to Euroamerican material culture. Some historic sites, however, lack these indicators or have very few items that can be so classified. The PCMS project provides a good example of the difficulties, as well as research potential, posed by these more ambiguous sites.

### **PAST RESEARCH IN SOUTHEASTERN COLORADO**

The results of earlier research in southeastern Colorado were reviewed in an effort to find supporting data from which to set forth explanations for the observed ambiguity present on some sites in the PCMS. Alternate explanations were sought for sites that did not neatly conform to the traditional historic/prehistoric frameworks. A review of the regional archaeological literature was conducted at the OAHP, Denver. Additional collections were examined at the Loudon-Heinreitze Museum at Trinidad State Junior College in Trinidad.

The earliest report about historic archaeological sites in the upper Purgatoire valley is a 1963 work by Herbert W. Dick of Trinidad State Junior College. He indicated that the historic sites in the Trinidad Reservoir survey area just west of Trinidad consisted "of ruined house[s] of Spanish speaking people who have settled in the upper Purgatoire region between 1850 and 1890" (Dick 1963:4). He went on to state that it was not necessary to describe the sites, which consisted of foundations, because there were examples of similar farms in the Taos region that could be used for comparative purposes. He did describe the artifacts as representing "porcelain, hand wrought nails, brown pottery, micaceous pottery, porcelain pipes and bottles of the pre-1900 A.D. era" and noted that coal was used for fuel (1963:4). These sites were defined as belonging to the "Lucero phase" of the "Ranchero Complex".

Dick briefly described three Lucero phase sites in his report. Site TC:C9:17 was described as possibly being the earliest Lucero phase site. It had "no evidence of buildings but trash is distributed over a wide area" (1963:6). The second site (TC:C9:6) was located on an alluvial terrace 24.4 m (80 feet) above the Purgatoire River where a few foundations were in evidence. The third site (TC:C9:18) consisted of foundations and a trash area. Dick observed that "the main importance, as with other Lucero Phase sites, rests on the presence of native Spanish hand made pottery of the Micaceous series and Rito Red-on-Brown pottery" (see also Dick 1968:77-93).

General observations were made for the current study of the available collections recovered from six sites in the Trinidad Reservoir area (TC:C9:6, 10, 11, 40, 183, and 219). There were some obvious differences noted between the observed Trinidad Reservoir samples on the one hand and the general historic artifact inventory of the PCMS on the other. The Trinidad Reservoir collections are characterized generally by earlier historic artifacts. These include hand-wrought nails, earlier ceramics and bottle glass, and large quantities of smooth, burnished, handmade ceramic fragments.

In addition to the artifacts just noted, four sites exhibited obvious examples of worked glass, mainly early olive and dark brown colored fragments. Site TC:C9:6 consisted of many fragments of predominantly olive and brown glass. A note accompanying the boxed artifacts and written on December 21, 1957 by Dick contained the following comments: "Heavy glass ca. 1865-70; glass used to make scrapers; and several pieces chipped into scrapers." (1957). Dick thought this site was occupied by a historic Indian settler (1957). The three other sites exhibiting worked glass were TC:C9:40, with five pieces of worked purple glass; TC:C9:183, with two worked olive glass fragments and several fragments of gray-tan burnished pottery; and TC:C9:219, with two worked olive glass fragments. The last site named also had yielded a sizable assemblage of red-on-brown and burnished gray-brown ceramics.

The other obvious difference noted between the worked glass artifacts from these sites and those from the PCMS was that artifacts from the Trinidad Reservoir sites showed long flake scars over the entire surfaces of the fragments, whereas the retouched artifacts from the PCMS appear worked mainly along the edges.

In *Historic Chronological Outline of Upper Purgatoire Valley* by Hand et al. (1977), the historic sites of Trinidad Reservoir dated between 1860 and 1900 were assigned to the "Baca phase" of the "Ranchero Complex". The former name of "Lucero" applied to the phase by Dick was changed to "Baca," as a "Lucero phase" had previously been designated elsewhere.

A more detailed account of the Baca phase and Ranchero Complex was presented by Wood and Bair (1980:23-25). The Baca phase was named for Felipe Baca, who established his ranch on the Purgatoire River at the location of present-day Trinidad in 1861. He was among the earliest Spanish-speaking pioneers in the region. The Ranchero Complex represented "small sheep ranches with evidence of both adobe and sandstone foundations, porcelain, hand-wrought nails, late Taos, or Picuris micaceous pottery, as well as other late ceramic types of 'Spanish' origin as those described by Dick (1968)," according to Wood and Bair (1980:23). Wood and Bair (1980:23-24) noted that the status of work on this very important phase in the history of southeastern Colorado had not changed since the time of Dick's tenure at Trinidad.

All post-1900 sites were regarded as "modern" in the current analysis and refer specifically to mining-related Hispanic and Anglo-American communities surrounding the Trinidad area. The area remains largely Hispanic, much the same as northeastern New Mexico. With the introduction of the Santa Fe Railroad in the mid-1870s, the small subsistence sheep ranches began to be replaced by large cattle operations. Many of the small communities established during the Baca phase ultimately became coal camps (Wood and Bair 1980:23-24).

Colorado College has undertaken archaeological surveys since 1974 in the southeastern corner of Las Animas County and the southwestern corner of Baca County on the properties of Carrizo Ranches, Inc. The initial report (Kingsbury and Nowak 1980) described the sites found between 1974 through 1979. It suggested that homesteaders began to settle the area in 1886, and that the population peaked in 1888, with approximately 6000 individuals. The remains of several hundred sites, according to the report, were known to be situated throughout Baca and Las Animas counties and were located beside canyon-head springs or close to drainages. Kingsbury and Nowak (1980:69) went on to describe the sites:

The outstanding feature of each homestead site is the buildings. They are unique in character, utilizing available materials and skills in construction of the buildings. The reddish Dakota sandstone, native to the area, used as building material was roughly shaped, or not shaped at all, sorted to size and mortared

together with mud to form strong single, or two-room homes and outbuildings. Large straight growing junipers were used as the main supporting beam for roof construction in the smaller structures.

There were six sites listed, but only three of the sites were described to the extent that the data were usable for comparative purposes, and just one is of direct concern here because of its physical properties. 5LA1731, located on the head of McKenzie Canyon, consisted of a house made of roughly shaped, mud-mortared sandstone blocks, and a corral built of long pieces of juniper trunks and limbs that had been wired together. Lithic artifacts were found at the site, but no historic Anglo-American artifacts were reported.

The subsequent 1983 Colorado College survey resulted in discovery of three historic sites, two of which are of interest here. The report indicated that the sites were recorded, but that the project goals did not include detailed investigation or interpretation of these sites (Nowak and Jones 1984:24-26). Sites 5LA5775 and 5BA329 are described briefly. 5LA5775 was interpreted as a shepherd's camp, containing four features. Feature A was thought to represent either a shelter or corral built with dressed basalt slabs. The structure was collapsed, but the outline suggested a roughly square enclosure. The structure incorporated the use of the canyon wall for two sides. Walls were constructed on the east and south sides. Feature B was also believed to be either a corral or habitation structure and was similar in construction and material types to Feature A. Features C and D consisted of shepherd's ovens, built of dressed basalt slabs and dressed sandstone, respectively. 5BA329 was a historic rockshelter, consisting of a large natural overhang with dressed sandstone slabs forming enclosure walls (Nowak and Jones 1984:24-26).

During the 1984 field season two historic sites, 5BA342 and 5BA344, were found and recorded by Colorado College. Site 5BA342 was described as follows:

...includes the remains of a habitation or corral structure and quarry area...The structure has deteriorated to one course of dressed sandstone slabs....There is a 1.0 m opening along the south side that most likely served as an entryway, and mortar is present between some of the slabs. Two rock cairns appear outside of the structure at the southeast and southwest corners. There were not any other cultural materials observed on the surface at the structure....The quarry for the sandstone slabs is located approximately 250 m to the west of the above structure. The outcrop of sandstone in this area has made the lithic material accessible and is evident by the piles of dressed slabs. There were not any other historical cultural material observed in the immediate vicinity of the quarry, but isolated lithic debitage appears here (Nowak and Jones 1985:31).

Site 5BA344 included the remains of a habitation structure with an associated trash scatter and other features located on the first terrace above the floodplain.

The structure consists of a square enclosure constructed of dressed sandstone slabs. The four walls are approximately 5.0 m long with one meter opening along the south side. The west and north walls remain standing approximately 2.0 m high, but the others are mostly in the collapsed state. An additional feature is the rock pile in the northwest corner of the structure that was most likely a fireplace. Also, there are two stone cairns to the north and one to the south of the structure. Artifacts here include purple glass and iron pieces as well as some scattered lithics (Nowak and Jones 1985:32).

Five of the sites described above (5LA1731, 5LA5775, 5BA329, 5BA342, and 5BA344) appear to contain traits similar to those of sites in the PCMS that are considered to be Hispanic in origin. Architecturally, these include stone structures with south-facing entryways and corner fireplaces, "cairns" probably representing supports for ramadas, modified rockshelters, cliff walls incorporated into structures, ovens, juniper brush corrals, and an absence of associated outbuildings. Material culture consists in some cases of lithic artifacts and minimal amounts of recognizable Anglo-American artifacts.

The most recent archaeological investigations in the Purgatoire valley vicinity were conducted in the John Martin Reservoir area at the site of Old Las Animas City (5BN176) (Earles et al. 1987). Old Las Animas was the first pre-railroad town in southeastern Colorado. It was established in 1867 on the south bank of the Arkansas River, approximately 2.4 km (1.5 miles) east of the mouth of the Purgatoire River. It served the needs of the surrounding population, but its brief success was tied to Fort Lyon, located

approximately 1.6 km (1 mile) northeast on the north bank of the Arkansas River. Although the town existed for only about 18 years, considerable activity occurred there, as was demonstrated archaeologically (Carrillo 1987:96-108).

One important archaeological aspect of the site was the observed variability of the architectural and artifactual remains. Architectural variety was suggested by contiguous shaped sandstone foundations and cut stone piers, particularly in an area (A) thought to represent the commercial district. The contiguous walks suggested adobe and possible log cabin-type structures. Stone piers indicated the use of frame structures as well. According to newspaper accounts the town in its early years had many frame structures, but adobe structures were also built. The adobe construction was undertaken by Hispanic individuals residing in the town (Carrillo 1987:106).

Two historical accounts attest to the architectural and ethnic character of the settlement. An article appeared in the newly-founded *Las Animas Leader* newspaper, on May 23, 1873, from which the following is drawn:

Crossing the river from Fort Lyon about 1/4 mile [0.4 km] distant you enter the new town of Las Animas, county seat of Bent. It now has a population of about 250, two hotels, about 20 places of business, and others opened daily. Several houses are built of adobe and several of stone, both of which are cheap and easily obtained - Mexicans may be seen making "dobies." Las Animas is a fast town. It has two dance houses, one American, and the other Mexican... (Carrillo 1987:100).

The second account is of a shopping expedition by Frances Roe to Las Animas. Mrs. Roe was the wife of Lt. Faye Roe, an officer at Fort Lyon. Although no date is available for the reference, it probably occurred during the early years of the town when Native Americans were still in the area prior to their removal in 1869. Mrs. Roe described "shopping with a friend in a store in Las Animas, a small Mexican town near the Fort..." (Smith 1984:47). One area of the town in particular, Area B, located in Block 86, north across Craig Street, did not conform to the patterning described above:

The architecture consists of circular depressions and marginal stone alignments, suggesting jacal type of structures. The architectural to subsistence artifact ratio is low. Window glass was relatively thin, possibly suggesting an early occupation. In conjunction with these remains is found bottle glass which has been subjected to modification by pressure flaking, chipped stone artifacts and groundstone fragments. Lithics were concentrated in this area and Area C. These structures have a resemblance to those found in Piñon Canyon, approximately 40 miles [64.4 km] upriver in a tributary area of the Purgatoire River. They could represent occupations of Hispanic individuals from New Mexico who came into the region c. mid-1860s and began to acquire Euroamerican material culture (Carrillo 1987:106-107).

## **CULTURE CHANGE AND TRANSITION IN NEW MEXICO**

Important antecedents of New Mexican material culture, both architectural and artifactual, are described in the following paragraphs. These traits are indicative of New Mexican culture in the early 1820s when Anglo-American trappers and traders began to travel to Santa Fe and Taos on a regular basis; their traditional importance was still manifested in the Purgatoire valley 40 to 60 years later.

From the time that New Mexico was founded in 1598 until 1821, when Mexico became a republic, New Mexico was somewhat isolated. As a result, New Mexicans developed unique traditions in response to the climate and terrain around them. Contact with their sedentary Pueblo Indians neighbors and nomadic tribes with whom they alternately fought and traded was also a significant influence on them. Incoming foreign trappers, traders, and travelers further altered the lives of New Mexicans through introduction to traditional New Mexican society of "new materials, new skills, and attitudes" (LeCompte 1981:17). D.J. Weber notes that

between 1821 and 1846, economic, political, ecclesiastical, military and demographic changes combined to alter frontier society and culture more profoundly than any previous twenty-five year span. Fresh ideas, technological advances, and new commercial opportunities brought changes that directly or indirectly touched the daily lives of most of the *pobladores*. Change took place at different rates, depending on particular local circumstances. (1982:207)

New Mexico and California were the most profoundly affected of the Mexican provinces during this era. The size of the upper class increased, and the new material began to alter New Mexican frontier society. Whereas during the Spanish era the harsh conditions on the frontier had served to make it a more egalitarian society, a small aristocracy now developed. The lack of hard cash was not a criterion for this class, as status was derived instead "from family, racial purity, land and livestock" (Weber 1982:207-208).

In New Mexico the members of the old upper class took advantage of the new commercial opportunities offered by the opening of the Santa Fe trade, and many became merchants. New Mexican society was an "older, more complex and sophisticated society than either California or Texas" (Weber 1982:209-210), and by the end of the Colonial era had an established moneyed elite. In the Rio Abajo region south of Santa Fe, a few families monopolized land and became rich selling sheep in Chihuahua. The Santa Fe trade enabled the landowners or *ricos* to attain capital by merchandising and to acquire additional property. In 1844, some New Mexico families were able to send between \$25,000 and \$28,000 apiece in merchandise from Santa Fe to Chihuahua. By the early 1840s, the New Mexican merchants were beginning to gain control of the Santa Fe trade (Weber 1982:209-210).

The majority of the sheepherders in the region were Indian slaves captured as children and raised by the Hispanic families. Upon attaining adulthood, they were released and carried the label *genízaro*, signifying their native tribal origin. During the Mexican era the slave trade expanded, representing a sharp increase over the last decades of the Spanish Colonial era (Carrillo 1990b; Weber 1982:211-213).

By the end of the Mexican era, nomadic Native Americans began to increase raids, causing herders to take tremendous losses. As a result, many sheepherders were forced into debt. On the large estates, a peonage system similar to sharecropping, but involving sheep raising, was created using the *encomienda* system. This practice also increased sharply during this period. Certain livestock-related sites in the PCMS may reflect the presence of this system. In the system

the herder, or *partidario*, was an independent contractor who agreed to guard and breed a flock of sheep belonging to a wealthy man in exchange for a share, or *partido*, of the newborn animals....The shepherd usually received a cash "advance" for his services, and in good times built up his own herd and prospered (Weber 1982:212).

The changes brought on by the growing affluence and availability of Anglo-American manufactured goods began to affect the households of the *ricos*:

Furniture multiplied; mirrors appeared on walls; clocks began to tick off the hours in the parlors of the well-to-do; and such extraordinary luxuries as pool tables, pianos, and organs found their way to the frontier....Dwellings began to change as a few of the wealthy began to replace the mica and hides that covered windows with glass; double sash windows that let in more light appeared; wooden doors began to take the place of hides; planked floors began to replace hand-packed dirt... (Weber 1982:223-224).

The change in architecture and household furniture was partially the result of the introduction of iron and steel woodworking tools, such as manufactured planes, scroll saws, nails, hinges and metal locks, which allowed frontier carpenters to undertake more sophisticated work. Since the Spanish era, iron had been a scarce and prized commodity in New Mexico. Carpenters had to make do with a modest inventory of crude axes, adzes, drills, chisel and saws, many of which had been made from remnants of other worn tools or metal pieces (Carrillo 1990b; Gregg 1962:107; Kempton and Carrillo 1990; Weber 1982:224).

An important aspect of the changes that did occur at the end of the Mexican era was that most of the *pobladores* continued to live in small, minimally furnished households and were still having to contend with Indian adversaries. Architecturally, aesthetic considerations were pushed aside in favor of defensive and practical needs. While *ricos* used tables and dined on silver plates, the majority of the frontiersmen continued to eat a traditional diet of "meat, beans, corn, red chili, and tortillas as they had a century before" using minimal utilitarian utensils (Weber 1982:224-225).

## NEW MEXICAN MATERIAL CULTURE, CIRCA 1820-1880

This section presents descriptions of material culture initially observed in New Mexico beginning in the 1820s and similar to traits that are present archaeologically in the Purgatoire River region. The initial emphasis is on architecture, with artifactual descriptions mainly focusing on items related to subsistence activities. In terms of archaeological implications, a very important aspect of the New Mexican material culture is that it continued to endure for many years after the American conquest. D. J. Weber made an especially relevant point about studies concerned with culture change:

Although some American visitors to the Mexican frontier flattered themselves that their very presence would cause the *pobladores* to "rapidly improve," it is clear that impetus for societal and cultural change in this era [1821-1846] came from Mexico as well as abroad. Mexican settlers, like their counterparts on the American frontier, remained open to new ideas but at the same time sought to replicate familiar aspects of the culture of the interior as their fortunes and circumstances permitted....All cultures change slowly and selectively, as demonstrated by Angloamericans who went to great lengths to build log cabins on the treeless high plains to imitate the familiar architecture of the eastern woodlands. Any analysis of periods of change and transition – the periods that hold the most interest for students of history – should not lose sight of continuities... (1982:238).

Josiah Gregg had noted the inherent resistance to change in 1844:

The immense expense attending the purchase of suitable furniture and kitchen-ware, indeed, the frequent impossibility of obtaining these articles at any price, caused the early settlers of Northern New Mexico to resort to inventions of necessity, or to adopt Indian customs altogether, many of which have been found so comfortable and convenient, that most of those who are now able to indulge in luxuries, feel but little inclination to introduce any change (1962:109).

W. W. H. Davis went to New Mexico in the mid-1850s as the U.S. attorney. As a young Victorian-American, Davis was quite shocked by much that he saw in New Mexico, but he was also an excellent observer and had a good eye for detail. He described the interior of a house in Santa Fe, which contrasted with those on the frontier. He indicated that the internal arrangement was different from an Anglo-American house, as was the building itself. "The style is essentially Spanish, blended with which are observed many traces of the Moors" (Davis 1962:50-51). Floors with boards were rare and were covered with a coarse rug called a *gerga*. The storage items consisted of trunks and antiquated chests. Folded mattresses, or *colchones*, were used as couches and covered with blankets which were made in Saltillo, Mexico, and sold for between 50 and 75 dollars. Davis indicated that some of the wealthy people had a few chairs and tables made of rough pine, but that many such items were heirlooms. He pointed out, as Gregg had 10 years earlier in 1844, that even in the mid-1850s when Anglo-American carpenters had established businesses in Santa Fe, few people adopted their furniture, and "cling to that of olden days" (Davis 1962:52). People preferred the *colchon* to chairs and settees (Davis 1962:50-53).

Davis described the ceilings as consisting of vigas, usually rough timber, but noted that in the homes of some of the wealthy individuals the vigas were planed and painted in various colors. He also indicated that in some sections of the country "small round sticks [*latillas*] were laid from beam to beam in herringbone-style, and painted red, blue, or green" (1962:51). Davis noted that the large family room, or *sala*, was used in warm weather by the entire family to "receive their visitors, sleep at night, and hold the *baile*" (Davis 1962:52-53). This room was adorned with rude engravings of saints, among which the Virgin of Guadalupe was always conspicuous (Davis 1962:52-53).



Davis also made mention of the fireplace, which he indicated was built into one corner. The mouth was horseshoe shaped and 46 to 61 cm (18 inches to two feet) higher. He also mentioned that no stoves were observed (Davis 1962:52-53). Several other individuals also describe the use of corner fireplaces. This phenomenon was also recorded at 40 domestic architectural structures in the PCMS. Twitchell (1912:156) noted that "the fireplace was always built in one corner, and occupied a very small space." Boyd noted that there were two types of corner fireplaces: (1) the *fogon de campana*, or bell-shaped fireplace, for cooking and (2) the *fogon de padercita* for heating. Boyd (1958a:223) stressed the fact that "in no case did the Spanish ever use the fireplace built in the center of a wall; this came in with the Anglos." Corner fireplaces occurred in four of the domestic architecture types in the PCMS.

Matthew Field, in 1839, described the interior of a room in Santa Fe and commented on the fact that "the chief sign of wealth among the people consisted of elegant Mexican blankets" (Sunder 1960:204), which sold for as high as 75 dollars in Mexico. Field's account, if compared with observations of W. W. H. Davis made approximately 15 years earlier, indicates the slow rate of change and further attests to the phenomenon of selective rather than wholesale change. Field continued by denigrating other fixtures observed by indicating that

an American eye can never reconcile itself to the wall decorations of a Santa Fe "drawing" room. Coarsely engraved and colored pictures; rude images of saints; religious charms; broken looking glasses (every bit of a looking glass is a treasure); broken flower vases; any little shattered ornament brought from the States; such things are arranged about the walls with ostentatious display (Sunder 1960:204-205).

Gregg, in New Mexico in the early 1840s, made mention of the houses located in villages away from Santa Fe. He noted two distinct types, *jacales* and dugouts, both of which also occur in the PCMS.

Wood buildings of any kind or shape are utterly unknown in the north of Mexico, with the exception of an occasional picket-hut [*jacal*] in some of the ranchos and mining places....The houses of the villages and ranchos are rarely spacious as those of the capital, yet their construction is much the same. Some very singular subterrene dwellings are to be found in a few places. I was once passing through the village of Casa Colorada, when I observed some noisy urchins just before me, who very suddenly and mysteriously disappeared. Upon resorting to the spot, I perceived an aperture under a hillock, which, albeit considerably larger, was not very unlike the habitations of the little prairie dogs (1962:109).

Frank S. Edwards, who was a soldier during the Mexican War, observed houses in Moro. He stated that "the houses or huts were built half underground, and consisted of but one room roofed with logs" (1966:41).

Wesley Hurt undertook an ethnographic study of the village of Manzano in 1939. It is located on the eastern slope of the Manzano Mountains to the west of the Estancia Valley in New Mexico. Manzano, even in 1939, existed in relative isolation from places such as Santa Fe. The village was founded prior to 1824 and up to 1870 was subjected to Indian raids (Hurt 1939:245-246). Hurt noted the tremendous Indian cultural influence on the village, manifested in many ways. He indicated that this influence extended to the houses and, in particular, to the *jacal*:

The houses at Manzano and in the surrounding area indicate the strong Indian element in the Spanish-American culture. The four main types listed in the order of their importance are: the pole house or *jacal*, the stone house, the adobe house, and the log house or *fuerte*. Of these types, the *jacal* was certainly derived from the Indian. The house was built by placing four upright heavy posts with forked tops in the corners. Then four poles are laid in the form of a square or rectangle in the forked tops of the corner posts. A series of smaller poles are laid against the cross beams to form an upright pole wall. The walls were then chinked and plastered with mud. Typical of Indian houses, the door is usually built too low for a man of average height to enter without stooping. *Vigas* and small cross sticks are used in the roof structure. Over the wooden portion of the roof is placed a layer of adobe or a gabled corrugated iron roof....In the houses of the poorer families the floor consists of nothing more

than packed adobe. Although the *jacal* type of dwelling is easier to build and is less expensive, it is not the preferred type for the upright poles tend to rot at the bottom (1939:250).

The majority of the domestic structures in the PCMS contain similar characteristics to the structures described above. They consisted of stone, adobe, *jacal*, and dugout construction, with 40 structures containing corner, or *fogon*, fireplaces (Carrillo and Kalasz 1990).

An additional observation made by Davis in the mid-1850s, which is relevant to the sites in the PCMS region, relates to the use of outbuildings. He stated that "there are no barns among the rancheros" and that the grain was either stacked outside or "housed under a kind of barrack built of poles, and covered with brush and grass" (Davis 1962:72). This observation may be one important indicator of ethnicity, as many of the homesteads sites, and in particular those that occur in HST 1 and HST 2, do not contain outbuildings of any kind.

The next important aspect of the material culture is concerned with the implements utilized by New Mexicans beginning at the time of Mexican independence in 1821. Most of the accounts refer to artifacts relating to subsistence activities, particularly hunting and agriculture. Many of the multicomponent sites in the PCMS having historic features also yielded either minimal amounts of Anglo-American artifacts and chipped stone and groundstone materials or strictly chipped stone and ground stone. There are precedents for the use of chipped stone by Hispanics going back to the Spanish Colonial period in Texas. Excavations undertaken in San Antonio at the San Fernando and Alamo plazas and at the Governor's Palace Park revealed numerous chert fragments from within sealed deposits, resulting from the production of chipped stone artifacts (Fox 1977; Fox et al. 1976; Fox et al. 1977). In regard to these phenomena, Fox stated:

It is becoming apparent that some flint working activity must have continued among local residents throughout the Spanish Colonial period. This may reflect the need for cutting and scraping tools during severe shortages of metal such as occurred in San Antonio during the early 1800's. Governor Antonio Martinez repeatedly begged his superiors to send iron in order that cannon and small arms of the troops might be made workable...and implied that all available iron in the settlement had been melted down to make such repairs. The settlers may have been acquainted with the technology of flint working either from their contacts with the local Indians or from prior experience elsewhere...it should be borne in mind that the presence of chert flaking debris may not necessarily indicate Indian occupation in the San Antonio area (1977:16).

The Hispanic frontiersmen who settled the Purgatoire Valley probably continued the tradition of making and utilizing stone tools in the frontier regions. This may account, at least in part, for their presence on historic sites and suggests the adaptation and transference of the lithic technology to working with bottle glass. The historic and archaeological literature indirectly implies that the Hispanics possessed an aboriginal-type technology, with several accounts recorded of the use of the bow and arrow both for defensive purposes and for hunting. No direct references were found for the manufacture and use chipped stone and groundstone tools. An indirect reference to the use of *pedernal* (obsidian, agate, chalcedony, quartz), in conjunction with a *chispa*, or iron striker for starting fires, lighting cigarettes, etc., suggests knowledge of lithic technology (Boyd 1958b:103). The introduction of iron and iron arrow points manufactured for trade with the opening of the Santa Fe Trail may have obviated the need for using stone projectile points during the later periods.

There are several accounts that mention the use of the bow on the frontier by Hispanic *pobladores*. D. J. Weber stated:

Fighting scattered bands of Navajoes and other large groups of mounted Indians on their own ground and on their own terms, the outnumbered and poorly equipped volunteers had no more chance of complete victory than did the regular army. Mexican volunteers lacked even the advantage of firepower, due in no small part to an annoying government monopoly of gunpowder and governmental restrictions against the importation of foreign arms and munitions. In New Mexico most *pobladores* fought with bows and arrows instead of guns. In 1833, one district mustered 467 men, of whom 318 had bows and arrows and 149 had firearms. Meanwhile, thanks to foreign traders, hostile Indians had more guns than ever (1982:120).

Kenner basically reiterated this point by stating:

In combating the Comanches, the New Mexicans, when well led and adequately armed, were more than able to hold their own. Had they been as timid and cowardly as many Anglos have claimed, their province could never have endured two centuries of constant exposure to Indian attacks....New Mexican youths grew up well prepared for war, for they learn to use weapons and ride horses when they are very young. The Pueblos generally relied upon the bow and arrow, pikes, and lances and, as a crude sort of armor, wore leather jackets. The Spanish settlers, handicapped by lack of gunpowder for their few firearms, used similar weapons, the most effective being the lance. (1969:41)

In 1839 Matthew Field, after spending time at Bent's Fort on his way to Santa Fe with a trading party, stopped at Pueblo de Leche, or Milk Fort, located on the Arkansas River 6 to 8 km (4 or 5 miles) above Bent's Fort. He described the inhabitants as "of dark-skinned, half Spanish half Indian tribe, who inhabit Taos and the Department of Santa Fe" (Sunder 1960:149-150). He also noted that the men of Milk Fort were as expert with the bow as the Indians, and although they had firearms, they killed more buffalo with arrows than with firearms (Sunder 1960:151).

The men...were armed also, some with, some without pistols, but not one was without his large knife; and as they lounged about the ground they were employed filing up arrow heads from bits of sheet iron, cutting and trimming the long sticks and fixing the delicate feather at the end (Sunder 1960:152).

Gregg, in 1844, noted a similar shortage of firearms, and use of the bow by the militia:

It is true that most of the regular troops are provided with English muskets, but a great portion of the militia are obliged to use the clumsy old fashioned *escopeta*, or firelock of the sixteenth century; while others have nothing but the bow and arrow, and sometimes the lance, which is in fact a weapon very much in use throughout the country (1962:117).

The shortage of firearms was still apparent in the 1850s, as was evidenced by an account from the San Luis Valley in southern Colorado:

The people of each settlement, moreover, were united for their mutual protection. Thus, a group of settlers was delegated to watch and care for the crops, another to care for the stock, and a third to manufacture the bows and arrows – for in 1854 there were in Costilla only two guns, one a musket (Tushar 1975:32).

Hurt indicated that due to the isolation of the people at Manzano

they were forced many times to defend themselves with Indian weapons when their supply of bullets ran out or when there was a shortage of rifles. They frequently used a simple arched type of bow made of *manzanita* or *jicle* wood with a string of cow or goat sinew. These bows were small, seldom exceeding four feet [1.2 m] long. The arrow was made on *ponil* wood with a turkey feather base and an iron point that was tied on with threads from the central shaft of the turkey feather. The arrow was held between the thumb and index finger (1939:246).

A subsistence activity for which there is considerable evidence in the PCMS, and which is thought to be attributable at least in part to Hispanic settlers, is the use of groundstone as manifested by manos and metates. Campbell (1969) had some problems determining whether certain sites on the east side of the Purgatoire River were prehistoric or historic, since similar locations and resources were used by both prehistoric and historic groups.

For example, it is known that Spanish-speaking homesteaders collected, and on rare occasions, produced typical *manos* and *metates* and discarded them randomly. Also, early shepherders in the area used rock shelters as temporary encampments and left evidence of use; it is difficult to determine who used them (1969:75).

In the mid-1840s Gregg observed that the staple productions in New Mexico were Indian corn and wheat:

The former grain is most extensively employed for making *tortillas* – an article of food greatly in demand among the people, the use of which has been transmitted to them by the aborigines. The corn is boiled in water with a little lime: and when it has been sufficiently softened, so as to strip it of its skin, it is ground into paste upon the *metate*, and formed into a thin cake (1970:49).

In the mid-1850s Davis also commented on tortilla-making in New Mexico:

The corn is boiled in water with a little lime, to soften the skin so that it can be peeled off, when they grind it into a paste upon an oblong hollowed stone, called a *metate*. The operator kneels down behind it and takes another long round stone like an ordinary rolling-pin, between which and the *metate* she mashes the corn (1962:53).

Hurt addressed the use of *manos* and *metates* at Manzano:

The *mano* and *metate* was used to a large extent in the past for grinding meal for tortillas and still can be found in occasional use today. The *metate* is of the three-legged type that resembles those of Mexico. Both the *mano* and *metate* are made of basalt, while those found in the nearby pre-Spanish ruins are of sandstone and quartzite. Some of the *manos* and *metates* used in the early days were made locally, while others were bought from a man at Tome, New Mexico, who made them. A few *manos* and *metates* that were picked up from the nearby Indian ruins were also used. They were not preferred, however, since particles of grit would rub off to become mixed with the meal...(1939:250-251).

## **NEW MEXICAN MATERIAL CULTURE IN THE PURGATOIRE VALLEY**

Taylor indicated that in the Red Rocks area of the lower Purgatoire valley "the women ground their blue corn meal on stone *metates* – Indian style. Most cooking was done over fireplaces" (1964:23).

Elfido Lopez was born in Trinidad in 1869. In 1871 his father moved the family to the Red Rocks area and filed a homestead claim. Lopez recalled that the "women would grind blue corn for tortillas as they had no wheat flour" (Darde 1962).

The following observations, made in New Mexico in the 1840s, are suggestive of conditions documented in the Purgatoire region in the late 1860s and early 1870s in terms of food consumption items. Gregg indicated that

the rancheros, and all the humbler classes of people, very seldom use any table for their meals, an inconvenience which is very little felt, as the dishes are generally served out from the kitchen in courses of a single plate to each guest, which usually takes it upon his knees. Knives and forks are equally dispensed with, the viands being mostly hashed or boiled so very soft as to be eaten with a spoon (1970:50).

Davis (1962:53) further indicated that "the kitchen utensils were meager," while Taylor stated that in the Red Rocks in the late 1860s "tables were a rarity; buffalo hides spread on the floor (usually hard-packed dirt) served as substitutes. Dishes were not plentiful, often being limited to a few cups and saucers. The chief eating implement was the whittled wooden spoon" (1964:23). Elfido Lopez recalled that "they did not have many dishes mostly only saucers and teaspoons. Some of the spoons were made out of wood. After you got through eating there weren't many dishes to wash" (Darde 1962).

Even though historic Hispanic ceramics have not been identified in the PCMS, there is some reason to suspect that some of the plain, burnished ceramics found in the PCMS may indeed represent ceramics produced by Hispanic settlers. The archaeological survey conducted by Dick (1963) in the upper Purgatoire region yielded considerable quantities of historic ceramics. Dick (1968:77) defined historic Spanish ceramics as "clay vessels made or used by Spanish colonists who emigrated from south of the present United States-

Mexico boundary, by Spaniards born in the New Mexico area, or by indigenous people who partly or fully adopted Spanish culture. Although Dick (1968:77) indicated that the distribution "ranges from Mesilla, New Mexico, northward to Antonito, Colorado, along the Rio Grande axis and its lateral tributaries", in 1963 he defined native Spanish handmade pottery of the Micaceous series and Rito Red-on-Brown pottery in the Trinidad Reservoir area (Dick 1963:9).

The clay vessels used by the Spanish colonists in New Mexico are hand molded; the pottery wheel was never used. The forms most frequently encountered are both deep and shallow-bodied dishes with wide, almost horizontal rims or flanges; small, straight-sided bowls; large, everted-rim bowls; large, wide-mouth jars; very large, everted-rim, constricted-neck, round-bodied jars; neckless, narrow orifice jars (seed jars); and both handle and non-handle cups. The last two are rare (1968:77).

Dick indicated that the vessel finish would occur in a scraped, wiped, slipped, and/or stove polish. The vessel surface colors had a wide range with monochrome occurring in unpolished brown, polished brown, red, gray, or black. Other surface colors were bichrome (red-on-brown) and polychrome (red, black, and white and red-on-brown with smudged interior). The basic construction was coiling with the exception of some small bowls and flanged plates. An interesting aspect of the ceramics was that "table vessels such as the small bowl, flange plate, and cup are more distinctly non-Indian in form, whereas cooking and storage jars are more closely related to Indian forms" (1968:77-78).

Edwards described the ceramics he observed in the mid-1840s in New Mexico:

The jars...are of all sizes; and with the rare exception of a copper pan now and then, are the only articles used to cook or hold water. They are made by the Indians out of a very abundant brick clay, being baked of a red color and glazed only inside, globular in shape, with a short neck and somewhat small mouth...These articles supply the place of metal vessels, as they stand heat well. Articles of metal are very scarce (1966:52).

Davis (1962:53) indicated that the kitchen utensils were meager and cooking was done in earthen vessels in the mid-1850s. He also observed that "the peasantry also make earthenware for domestic use, and carry considerable quantities of it to the towns to be sold. It consists principally of jars – *tinajas* – which are light and porous, and well adapted for refrigerators for cooking water (1962:83).

Hurt, in his ethnographic research at Manzano, indicated that

during the early days at Manzano, pottery was used to the exclusion of porcelain and metal cooking utensils...The shapes were usually restricted to shallow bowls, large ollas, and pitchers. There were also a few small water ollas with handles. The pottery varied in color from black, red, orange, brown to the decorated ollas of several colors (1939:247-248).

As previously mentioned, although historic Hispanic ceramics have not been identified from the surface collections in the PCMS, it is worth noting that excavations may reveal traces of this ware, in particular small bowls, flanged, plates and cups.

The lack of material culture possessed by the Hispanic settlers in the Purgatoire region is further suggested through examination of agricultural practices in New Mexico in the mid-1840s. The use of plows, threshing areas, and shovels is especially illustrative. Gregg observed that

agriculture, like almost everything else in New Mexico, is in a very primitive and unimproved state. A great portion of the peasantry cultivate with the hoe alone – their plows (when they have any) being only used for mellow grounds, as they are too rudely constructed to be fit for any other service. Those I have seen in use are most fashioned in this manner: a section of the trunk of a tree, eight or ten inches [20 to 25 cm] in diameter, is cut about two feet [61 cm] long, with a small branch left projecting upwards, of convenient length for a handle. With this a beam is connected to which oxen are yoked. The block, with its fore end sloped downwards to a point, runs flat, and opens a furrow similar to that

of the common shovel plow. What is equally worthy of remark is, that these plows are often made exclusively of wood, without one particle of iron, or even a nail to increase their durability (1970:48).

Edwards in his observations of plows used in New Mexico in the mid-1840s basically reiterated Gregg's observations. He noted that "their plows are made of wood, without a particle of iron, and very often in one piece, which is in the shape of a three pointed star" (1966:67).

Approximately 10 years later, Davis observed that the manner in which agriculture was practiced in New Mexico was "crude and primitive." He indicated that up to a few years previous all of the implements used were wooden. In the mid-1850s the peasantry cultivated with hoes, and plows were seen only on the properties of the major landowners. Based on the descriptions by earlier observers, the plows appear to have undergone some changes. He described two types of plows which he saw.

The Mexican plow is an implement of a very primitive pattern....It is not seldom the swell crotch or knee timber of a tree, one branch of which serves as the body or sale of the plow, and the other as the handle....[A second type of plow]...is made of two sticks of timber. The body is beveled at the point, which is shod with a piece of sharp iron, which answers for a share (Davis 1962:71-72).

Davis (1962) additionally indicated that this type of plow was in general use, except by some of the wealthier landowners who had purchased more modern plows from the United States. Even those, he said, were not "of the latest pattern" (1962:72).

Taylor discussed the agricultural practices carried out at Red Rocks, stating that "plowing was primitive, of course; a tree fork with a piece of sharpened iron on one of the prongs – a single handle attached – was hitched to a team of oxen" (1964:19-20).

Elfido Lopez recalled that

they had no plows, but they made them out of forks of trees. The plows had only one handle, the points were made out of pieces of iron that the men had sharpened on a rock and nailed to the wood. It was very hard to plow with these plows as they would go every way but straight. They did manage to farm in this way and they raised good crops of wheat, melons, beans, pumpkins, chili.(Darde 1962).

Edwards in the mid-1840s observed the processing of wheat.

After being reaped and bound in sheaves, it is spread over a clay threshing floor, in the open air, and surrounded by high poles. Upon it are men with rude pitch tools, made of limbs of small trees. They throw the straw into the air as oxen, driven round the enclosure, trample out the grain (1966:67).

Davis also commented on wheat threshing in the mid-1850s. He stated that flails and threshing machines were unknown in New Mexico and that the grain was "trod out by mules upon the ground." The procedure, described by Davis, entailed a thrashing floor "generally made in the field where the grain is gathered, by treading or pounding down the earth to make it solid" (1962:72-73).

Elfido Lopez described a similar process in the early 1870s in the Red Rocks area of the Purgatoire.

To thrash the wheat some of them used goats and sheep and there was always plenty of children. They would fix a place near the wheat stack which they called "era." This place was levelled good with hoes and then water was put on it to get it good and wet. They would tramp the mud down and let it dry hard and sweep it clean with cedar brooms. One man would get up on the stack and pitch wheat on this hard place and all the children would make the sheep and goats go around the stack until the wheat was thrashed. They would throw the straw away and put on more wheat until all the wheat was threshed and then they would wait for the wind to blow. That was the way they thrashed the wheat in those days (Darde 1962).

What follows are two final examples that point out the lack of material culture in the late 1860s and early 1870s in the Purgatoire River region. Taylor indicated that in the process of constructing a drain in the Purgatoire River "iron spades were few, and much of the work was done with wooden shovels made from cottonwood" (1964:13).

Elfido Lopez recalled the process involved in digging an irrigation ditch when his family moved to Red Rocks:

They had ox teams, of the twelve men only six could afford to buy shovels the other six made shovels out of wood. The shovels were needed to make an irrigation ditch. They had no way to survey the ditch so they just started digging. The man that had good shovels broke the ground and the ones that had wood shovels threw the loose dirt out (Darde 1962).

## **DISCUSSION OF THE RESEARCH DOMAINS AND RESEARCH QUESTIONS**

Utilizing the information discussed in the previous sections, an analytical framework was designed to incorporate various aspects derived from the historical descriptions that are amenable to examination in the form of material manifestations in the archaeological record. Three specific areas were used and are outlined below.

The research domains are structured in terms of the following research objectives: 1) investment in facilities, 2) elucidation of subsistence/economic-oriented issues, and 3) explanation of patterns of settlement. These objectives are based on existing historical data (Friedman 1985) and are oriented to the major historical occupation periods and to the culturally diverse populations who settled in southeastern Colorado. The research questions outlined can be tested with ecological, architectural, and artifactual data for the major time periods and sociocultural groups (Carrillo 1985:83-109; 1990a, b; Carrillo and Kalasz 1990; Kempton and Carrillo 1990). Both Church (2001; 2002) and Clark (2003) have outlined additional research realms that both expand the role of ethnicity and gender in the archaeological record of southeastern Colorado.

The following archaeological research domains were abstracted from the historical models and consist of demonstrable archaeological correlates that are expected to evidence variability in terms of 1) investment in facilities, 2) subsistence/economic activities, and 3) settlement in conjunction with ethnic and temporal variables. The research domains are outlined as follows:

1. Investment in facilities: The remains of houses, barns, corrals, etc., are associated with the housing of individuals and associated ancillary structures that made up a homestead. The investment is represented by essentially architectural features (foundations) and artifacts [e.g., nails, window glass, building hardware, and related items such as furniture or other items (personal/recreational)] whose association would reflect structures of varying functions (Carrillo 1985:83; 1990a, b; Carrillo and Kalasz 1990; Carrillo et al. 2003; Kempton and Carrillo 1990).
2. Subsistence/economic items: The subsistence system is perceived as comprising a repertoire of basic behavioral units (i.e., food procurement, food preparation, food storage, food consumption, and food remains). Each of the subsistence behaviors has the potential to leave some sort of trace in the archaeological record (Carrillo 1985:84; 1990a; Carrillo et al. 2003; Kempton and Carrillo 1990; Lewis 1977:183-187).
3. Settlement patterns: Selection of areas for settlement varied according to different ecological areas within southeastern Colorado in which the sites, representing settlement, are situated (i.e., canyon bottoms and rims, steppes, and hills) (Carrillo 1985, 1990a, b; Carrillo et al. 2003).

In conjunction with each of the research domains, a series of testable research questions and archaeological test implications encompassing the temporal and ethnic makeup attributable to probable type

sites are presented. These questions are based on the following demonstrable archaeological constructions, which the general model attempts to address. As previously indicated, the assumptions are

1. The historic groups who settled the region of southeastern Colorado introduced two contrasting economic orientations, (subsistence and cash-based) resulting from two contrasting sociocultural groups, Hispanic and Anglo-American (Carrillo 1985:81; 1990b; Carrillo et al. 2003; Church 2001; Weber 1980:53).
2. The nineteenth-century Hispanic settlers were dependent upon a subsistence economy that had developed over a period of 250 years of frontier existence in northern New Mexico. This economy included a) access to all components of the resource base, b) a generalized use of the total environment, c) minimal or no occupational specialization, d) self-reliant local production for local consumption; and e) low level of technological development (Carrillo 1985:80; 1990b; Carrillo et al. 2003; Weber 1980:58).
3. In contrast, the nineteenth-century Anglo-American settlers were oriented toward a cash economy directed toward production for exchange rather than production for use. A cash economy is basically oriented toward the conversion of goods and labor into cash, which in turn is exchanged for goods and services. This type of economy resulted in occupational differentiation and specialization through time. Volume production of a single item for export to the larger economy, occupational specialization, and wage labor are crucial elements of a cash-oriented economy (Carrillo 1990b; Carrillo et al. 2003).
4. There is the demonstration of a socioeconomic shift by the Hispanic occupants from a subsistence economy of local production/local consumption in the region to a cash, wage-labor, specialized production economy (Carrillo 1985:81; 1990b; Carrillo et al. 2003; Weber 1980:58).

The shift from local production/local consumption by the Hispanic occupants in the region to a cash, wage-labor, specialized production for external consumption can be evaluated against the archaeological record. These changes occurred over a period of years in New Mexico and spread to the outlying areas. This resembles the phenomenon referred to as the Doppler Effect (Deetz and Dethlefsen 1965, 1967), which entails the introduction of a concept (expressed archaeologically as material culture) to a specific area and the spread of the concept over time and space. There is a temporal lag from the time the idea is initially introduced until it eventually reaches its outermost limits of influence. By that time, a new concept may have replaced the original one at its starting point (Carrillo 1985:80; 1990b; Carrillo et al. 2003; Deetz and Dethlefsen 1965:196-206; Kempton and Carrillo 1990; Weber 1980:58).

The test implications which are used to address the hypotheses consist of statements that identify the type, amounts or pattern of architectural and artifactual information needed to evaluate particular hypotheses. These are assumed to be temporally and spatially variable with regard to their sociocultural orientation and to the extent and degree that they functioned within the systemic context (Binford 1972:221-222; Schiffer 1972:156-160; 1976; 1977:13-40; 1983:679). The functional classes of proposed artifacts, to accommodate the theoretical expectations were adapted, in part, from South (1977b; 1977c), Lewis (1977:185-187; 1984), and Carrillo (1985:77-111; 1990a; Carrillo et al. 2003).

The research design focuses on three major subperiods of historic occupation that are represented in southeastern Colorado. These generally occurred in the years 1860-1890, 1891-1910, and 1911-1930. The earlier occupation during the years 1786-1860 is also addressed. The research design is based on a model of settlement that emphasizes differences in economic practices between Hispanics and Anglo-Americans, the two principal ethnic groups present in the region. Archaeological expectations initially developed for sites in southeastern Colorado, but which have more universal applicability, are drawn from the model. Testable research hypotheses relating to subsistence, investment in facilities, and settlement are then developed on the basis of these expectations (Carrillo 1990a, b; Carrillo and Kalasz 1990; Carrillo et al. 2003; Kempton and Carrillo 1990).



## **Research Domain 1: Investment in Facilities**

### **Research Question 1: Hispanic, 1860-1890**

This domain deals with the remains of houses and associated features representative of the housing of individuals and associated ancillary structures that made up a homestead. The activities involved in investment of facilities are represented by essentially architectural features (foundations) and limited quantities of artifacts. These artifacts include nails, window glass, building hardware, and related items such as furniture or other items (personal/recreational) that would reflect structures of varying functions through their association (Carrillo 1985:85-88). The questions are oriented toward both survey and excavation results.

Structure and architectural remains identified as being the product of Hispanic activity during Subperiod II (1860-1890) should demonstrate styles, elements, and arrangements associated with traditional Hispanic architecture and culture.

Architectural styles, elements, and arrangements associated with traditional Hispanic settlement include, but are not limited to, log cabins (*fuertes*) or their remains; *jacales* or their remains; and square stone structures or foundations with probable corner fireplaces. The entryway will probably be located to the south. The structure may not contain windows, and if present, windows will be small openings. The stone masonry consists of slab, block, and rubble or a combination of each with mud mortar. Lintels, vigas and *latillas* will be unmodified and cut with an axe. Stone, log, jacal or adobe (with stone foundations) buildings are the most likely materials of construction. Other architectural features may include ramadas, modified rockshelters, and *hornos* (beehive ovens) or their remains. Other features on the site may include stone or brush corrals or a combination of both. However, outbuildings or their remains are infrequent (Carrillo 1985:85-88).

Arrangements of structures may be in a cluster or oriented in a linear arrangement. These clusters or linear arrangements may incorporate stock pens or corrals (Buckles 1993b; Buckles et al. 1986; Carrillo 1985:85-86). Artifacts related to personal use may occur, but not in high frequencies. These items are believed to have been highly curated and become part of the archaeological record as a result of accidental loss or breakage (Lewis 1977:187; South 1977b:86). These items, which may occur within and around architectural household remains, may include iron or silver crucifixes, rosary beads, religious medallions, jewelry, buttons manufactured of bone, horn, or wood, and glass and bone combs (Carrillo 1985:86).

It is expected that these styles, elements and methods of construction will be dominant on habitation sites formed as a result of Hispanic activity during Subperiod II. Sufficient data should be available from the surface assemblages of recorded sites to compare the architecture with data pertaining to the ethnicity of those responsible for the site's formation.

If the architecture is a product of the environmental conditions or some factor other than tradition, then it is expected that structures and architectural remains will demonstrate a variety of styles, elements, and arrangements, few of which will be associated with Hispanic tradition. Examples of such styles, elements, and arrangements include, but are not limited to, square and rectangular (may be the result of additions) stone buildings and foundations utilizing various construction techniques. Construction techniques include slab (mud mortared), slab and block (mud mortared), slab block and rubble (mud mortared), and double-coursed with rubble filled center and mud mortar bond. Combinations of these techniques have been observed within the PCMS. Entryways may occur facing any of the cardinal directions. Outbuildings may be present. Most commonly, outbuildings will be represented by foundation remains or barns, sheds, and privies. Additional features may include wells, stone/picket corrals, stone fences, and dams.

### **Research Question 2: Hispanic, 1891-1915**

Structures and architectural remains identified as being the product of Hispanic activity during Subperiod III (1891-1915) should demonstrate styles, elements and arrangements associated with traditional

Hispanic architecture and culture, and limited amounts of items associated with Anglo-American architecture and culture (Carrillo 1985:91-96).

Structures and architectural remains associated with this subperiod will consist predominantly of square stone structures, represented by foundations, with probable corner or wall fireplaces. Entryways will generally face south. Other architectural structure or their remains may include circular depressions (jacal/vertical log superstructures), stone foundations (adobe/vertical log superstructures), and rockshelters modified into structures, or their remains. Other associated features may include wells, stone/brush corrals, root cellars (*soterranos*), and garden plots/furrows. Artifacts in association with the structures will include both machine-cut and wire nails and window glass. Personal items that may be collected from the surface of these sites include glass buttons, pocket knives, and tobacco tins. It is expected that this group of attributes will predominate on habitation sites if Hispanic architecture and culture maintains the greatest influence on Hispanics in the PCMS region. Sufficient data should be available from the surface of systematically recorded sites to compare the structures and architectural remains with data pertaining to the ethnicity of those responsible for the site's formation (Carrillo 1985:91-93).

If the greatest influence on the construction of the structures on the sites was a factor other than ethnicity, then it is expected that a variety of styles, elements and arrangements will be recorded. The pattern described in Research Question 1 will not be the dominant pattern.

### **Research Question 3: Hispanic, 1916-1930**

During Subperiod IV (1916-1930), the Hispanic population in PCMS appears to have participated to a greater extent than before in the cash economy. Structures and architectural remains during this subperiod appear to have a greater diversity of styles, elements, and arrangements than during previous subperiods, perhaps as a result of participation in the cash economy (Carrillo 1985:97-100).

If a greater diversity of styles, elements, and arrangements are present during this Subperiod IV, then stone structures or foundations with fireplaces or cast-iron stoves, frame structures of milled lumber (two-by-fours and one-by-twelve planks, used vertically) with fireplaces or stoves, rockshelters modified into a structure with a fireplace, depressions (dugouts), jacal, and adobe structures should be present. Sheds, privies, and stone, picket, or brush corrals are also expected to be present (Carrillo 1985:97-98).

The assemblages from these sites should be similar to those of the earliest periods. However, wire nails, window glass, tobacco cans, glass buttons, metal buttons, glass rosary beads, plastic rosary beads, and plastic combs may be present. Sufficient data should be available from the surface assemblages of recorded sites to determine whether this pattern exists (Carrillo 1985:99-100).

### **Research Question 4: Hispanic Shepherders, 1870-1940**

Hispanic shepherders occupying the PCMS during the time 1870–1940 participated in a specialized occupation that produced a highly visible site pattern (Carrillo 1985:100-103).

The habitation structures will be marginal and will consist of 1) modified rockshelters, 2) semicircular or square stone structures built against sheer cliff walls or extending from shallow rockshelters, 3) marginal structures incorporating tin, milled lumber, and juniper trees, and 4) small semicircular stone structures (possible windbreaks). The associated features will consist of corrals made of 1) modified rockshelters, 2) stone (square, irregular; used in conjunction with juniper brush), 3) juniper brush (used in conjunction with stone and sheer cliffs), and 4) round fencing wire incorporating juniper trees (Carrillo 1985:100-101).

No architecturally related associated artifacts will be present. In addition, rock art will be associated and can be expected to consist of 1) names, 2) dates, 3) religious phrases or graphics, and 4) vulgar phrases or graphics (Carrillo 1985:102-103).

Data from both survey and testing will be needed to establish the age and function of sites believed to be attributable to Hispanic sheepherder occupation during this period. Based on previous work describing the archaeological manifestation of sheepherder's camps (Kornfeld 1983) some pattern is probably present. If any part of the described pattern is not attributable to sheepherder occupation, then the model will have to be modified. It is conceivable that a pattern may not be discernible as a result of some as yet undetermined bias (Kornfeld 1983:51-62).

### **Research Question 5: Anglo-American, 1860-1890**

The sites resulting from Anglo-American activity during Subperiod II (1860-1890) will include evidence of extensive ranching activities in terms of architecture and ranching-related features that contrast sharply with the contemporary Hispanic sites. These will include households, barns, sheds, and corrals (Carrillo 1985:88-91; 1990a).

Artificially, the archaeological record will reveal evidence of participation in a cash economy by the representation of selected artifacts of Anglo-American origin that occur in greater quantities and types than on the Hispanic sites, but not in as great quantities as the later Anglo-American-occupied sites (Buckles and Buckles 1984:37-46; Lichty and McNamara 1984; Weber 1980:52).

Expected architectural manifestations in terms of households are square and rectangular buildings or foundations utilizing various wall construction techniques including double-coursed with rubble-filled center and mud mortar bond. More complex shapes may be the result of additions. Walls are constructed of one (or a combination of) several types: slab (mud mortared); slab and block (mud mortared); and slab, block, and rubble (mud mortared). Additionally, jacal, adobe, and log cabin structures, or their remains, may occur. Entry ways may occur facing different cardinal directions. Milled lumber (whipsawed) may occur (Carrillo 1985:88-89; Carrillo and Kalasz 1990).

The associated architectural features may include 1) exterior fireplace (may represent a summer kitchen), 2) foundation remains of barns and sheds (possibly adobe or log superstructures, and 3) privies. Additional features may include 1) wells, 2) stone/picket corrals 3) stone fences, and 4) dams. The architecturally related artifacts will consist mainly of moderate amounts of cut nails and window glass (Carrillo 1985:89; 1990a; Carrillo and Kalasz 1990).

The artifacts related to personal use will consist of 1) coins, 2) pocket knives, 3) eyeglasses, 4) jewelry, and 5) buttons manufactured of mother-of-pearl, brass, celluloid, horn, pewter, porcelain, hard rubber, shell, wood, and glass. Footwear will consist of standard shoe sizes, rubber heels, few rubber caps on predominantly leather heels, and various methods of construction: nailing, stitching, or construction by means of machine-inserted brass screw wire (Carrillo et al. 1989:422). The artifacts associated with recreation activities may consist of 1) clay tobacco pipes (rare), 2) liquor bottles, 3) games and toys (e.g., clay marbles), and 4) musical items (harmonica) (Buckles and Buckles 1984:37-46; Carrillo 1985:90-91).

Miscellaneous artifacts representing architectural, ranching, and other various functions expected to occur are: 1) kerosene lamps and lanterns (generators and chimney glass), 2) commercially manufactured architectural items (hinges, locks, doorknobs, etc.), 3) medicine bottles, 4) barbed wire (specific styles), 5) celluloid items, and 6) vulcanized rubber items (Buckles and Buckles 1984:37-46; Carrillo 1985:90-91; Carrillo et al. 1989:422).

It is anticipated that sufficient data should be available from a survey to determine whether this pattern is present. Ethnicity can be assigned to sites based on archival information.

### **Research Question 6: Anglo-American, 1891-1915**

The sites from Subperiod III (1891-1915) are considered to be transitional. These sites contain attributes from both the early and later subperiods. The prime architectural criterion for their placement as

transitional sites consists of the occurrence of both machine-cut and wire nails (Buckles and Buckles 1984:49; Carrillo 1985:97; 1990b).

The architecturally related items relative to this hypothesis are similar to the preceding subperiod with the following exceptions: 1) circular sawn milled boards and the widespread use of manufactured, milled, and uniform construction materials, 2) machine-cut nails still present at beginning of subperiod, 3) introduction of wire nails and their gradual increase over the span of the subperiod (Buckles and Buckles 1984:49), 4) none or few outbuildings during the early part of the subperiod, and 5) barns and sheds in the later subperiod sites. Personal and recreational items are expected to be similar to those of the previous subperiod. It is anticipated that sufficient information will be collected from the surface of sites identified as Anglo-American from this period to address this hypothesis (Carrillo 1985:97; Carrillo et al. 1989:423; Sears 1969, 1970, 1976, 1979).

### **Research Question 7: Anglo-American, 1916-1930**

The sites addressed with this hypothesis are the most numerous in the PCMS and are attributable to the post-World War I and pre- Depression era, Subperiod IV (1916-1930). These sites vary considerably from their earlier counterparts basically because they represent a different adaptation to the region – that of dryland farming. These sites were oriented toward the national economy but only for a relatively short time span as they were maladapted to the region, and the interplay of environmental and economic factors quickly lead to their demise. The most distinguishing features that pertain to these sites consist of the occurrence of several architectural remains and considerable quantities of artifacts, both architectural and others that were not encountered on the earlier period sites (Carrillo 1985:103-107; 1990a).

The architectural manifestations should consist of: 1) stone structures or foundations (slab, block with mud mortar), 2) frame structures or foundations (two-by-four frame with vertical one-by-twelve siding), 3) adobe structures or foundations, and 4) dugouts (circular depressions). The associated household-related architectural features can consist of 1) root cellars (in most cases representing recycled dugouts), 2) cisterns, and 3) privies. Associated outbuildings will consist of stone or adobe barns and sheds. In some instances, railroad tie buildings may occur (Buckles and Buckles 1984). Associated fences and corrals may be post and barbed wire or log. Additionally, railroad ties were used in the construction of fences or corrals (Buckles and Buckles 1984:54-55). The major improvements on these sites will consist of earthen dams and ponds and windmills. The architecturally related artifacts will consist of: 1) wire nails (varying sizes), 2) window glass, and 3) building hardware (door locks, hinges, etc.) (Carrillo 1985:103-105).

The personal items associated with the households from this period will include: 1) pocket watches, 2) pocket knives, 3) eye glasses, 4) coins, 5) jewelry, 6) belt buckles, 7) mirrors, 8) perfume bottles, 9) cold cream jars, 10) combs, and 11) clothing (e.g., a. snap, b. eyelets, c. zippers, d. hooks, and e. buttons – agate, bakelite, brass, celluloid, plastic, porcelain, mother-of-pearl, and iron overall buttons). The footwear will consist of cemented shoes, in addition to shoes made using the manufacturing techniques previously stated for the above hypotheses. The recreation-associated items will consist of: 1) hinged tobacco cans, 2) liquor bottles, 3) toys and games (tin and other metals, porcelain dolls), 4) musical items (harmonica), and 5) stemless clay tobacco pipes (limited/curated). Miscellaneous artifacts associated with this time might include the following household items: 1) alarm clocks, 2) clothes irons, 3) lighting devices (oil lamps, lanterns, electric items, e.g., 1930s-1940s generator-operated), 4) hand tools (hammer, pliers, etc.), 5) furniture (bedsprings, drawer pull, etc.), 6) medicine bottles, 7) ink bottles, 8) other bottles (cleansers, poison, etc.), and 9) other cans – paint, kerosene, gasoline, oil, and antifreeze (Buckles and Buckles 1984:54-55; Carrillo 1985:105-107; 1990a; Carrillo et al. 1989:424).

### **Research Domain 3: Subsistence/Economic Activities**

This research domain is quite critical for two basic reasons. 1) It can be a sensitive indicator of change brought on by both environmental and cultural factors. When viewed from an historical perspective, the changes become quite evident, especially as they relate to the sites associated with the Hispanic groups.

2) These sites provide evidence of a number of culture changes through time. These include a gradual adaptation from a solely subsistence-oriented economy to a dependence on access to all components of the resource base. Then moving from a generalized use of the total environment with minimal or no occupational specialization, being self-reliant on local production for local consumption, and having a low level of technology to then reaching the level of selective participation in the larger cash, wage-labor, and specialized production economy, which had been introduced by the Anglo-Americans (Weber 1980).

### **Research Question 1: Hispanic Subsistence, 1860-1890**

The important variable, found in association with the architectural structural remains discussed in the preceding research domains, is the virtual absence of associated Anglo-American artifacts. Artifacts expected are minimal amounts of bottle glass (possibly modified), hole-in-top tin cans (Buckles and Buckles 1984:35, 42), and cartridges (Carrillo 1985:86; 1990a, b; Carrillo et al. 1989:422; Carrillo et al. 2003). Table 13, below, lists artifacts, features, and floral and faunal remains indicative of Hispanic subsistence activity in Subperiod II (1860-1890). Controlled surface collection and testing should take place on sites from this subperiod that are attributed to the activities of Hispanic settlers to determine if the absence of this type of artifact is real or perceived. If the absence is real, then the assemblages from these sites should be compared to other sites of the same age and function in the area to determine whether it is either a product of poor preservation or poor market access.

If the absence is real and the result of culture preference, then the artifacts relating to food procurement may consist of the items outlined in Table 13.

### **Research Question 2: Hispanic Subsistence, 1891-1915**

The important variable, in conjunction with the architectural features discussed in the preceding research domains, is the continued increase in selective Euroamerican goods, although not the total range that would be found on Anglo-American sites for this subperiod. Traditional items would still be in use (Carrillo 1985:91-96). Table 14, below, lists artifacts, features, and floral and faunal remains indicative of Hispanic subsistence activity in the Subperiod III (1891-1915).

Controlled surface collection and testing should take place on sites from this subperiod that are attributed to Hispanic settlers to determine if this increase in Euroamerican goods is real or perceived. The assemblages from these sites should be compared with the assemblages from Hispanic sites dating to the preceding subperiod.

### **Research Question 3: Hispanic Subsistence, 1916-1930**

The subsistence variable relative to the sites representing this group and subperiod, in conjunction with the architectural features discussed in the preceding research domains, consists of the examination of the notion that most Hispanics there were employed by the large Anglo-American ranches and, therefore, submerged into the cash economy on a much larger scale than in the previous time periods. Some traditional items still can be found. The result of their participation in the cash economy should be evidenced archaeologically in the presence of a larger number of consumer items than in the previous periods. These items should increase in frequency through time (Carrillo 1985:97-100). Table 15, below, lists artifacts, features, and floral and faunal remains indicative of Hispanic subsistence activity in Subperiod IV (1916-1930).

### **Research Question 4: Hispanic Shepherd Subsistence, 1870-1940s**

The sites attributable to this question will contain minimal amounts of subsistence artifacts. The earlier sites will contain artifacts similar to those outlined in Research Questions 1 and 2, while the later sites will contain, in addition to lithics and groundstone, light scatters of Euroamerican artifacts, in particular worked bottle glass and tin cans (Carrillo 1985:100-102) (see Table 13, Table 14, and Table 15, below).

**Table 13.** Archaeological signatures of Hispanic subsistence (1860-1890).

Category	Archaeological Expectations	Citations
Food Procurement Artifacts		
Bow and arrow	Stone (obsidian) and metal projectile points	(Kenner 1969:41; Tushar 1975)
Firearms	If present, may consist of limited quantities of unmarked rimfire and centerfire black powder cartridges (large caliber, i.e., 40-50 caliber cartridges). Also cartridges manufactured by Winchester Repeating Arms Co. (WRA)--"H" on 22's; United States Cartridge Co. (U.S.)	(Carrillo 1990a; Carrillo et al. 1987:91; Carrillo et al. 1989:422; Earles et al. 1987:91)
Wooden tools	Handmade wooden tools and implements, i.e., carts, plows, and spades	(Carrillo 1990a; Darde 1962; Kempton and Carrillo 1990)
Containers	Hide, wood, and grass basketry	(Carrillo 1985)
Food Preparation Artifacts		
Lithics (manos and metates and other tools)	Used for processing of wheat, nuts, berries, etc.; utilized and modified chert or obsidian flakes.	(Campbell 1969:75; Carrillo 1990a; Darde 1962; Kempton and Carrillo 1990)
Clay vessels	Pots ( <i>ollas</i> ). Possibly locally manufactured.	(Dick 1957, 1968)
Iron knives	Rarely found. Highly curated. Possible broken blade.	lithics (Carrillo 1990a; Carrillo, Rhodes et al. 1993; Fox 1977)
Modified bottle glass tools	Limited quantities; may evidence time lag	(Carrillo 1990a; Dick 1957)
Cast iron pots and pans	Limited. Highly curated. Possible broken fragment.	(Carrillo and Kalasz 1990; Kutsche et al. 1976)
Fireplaces ( <i>fogon</i> ), interior corner fireplaces	Usually found in both adobe and stone domiciles.	(Carrillo and Kalasz 1990)
Exterior fireplaces, <i>hornos</i> , pits, or hearths	Used for cooking and baking.	(Carrillo 1985, 1990a)
Food Storage Artifacts		
Clay containers	<i>Ollas</i> (small crocks) and <i>jarros</i> (jugs). Possibly locally manufactured.	(Dick 1963, 1968)
Bottle/jar glass	Limited. May represent recycling during this period.	(Carrillo 1990a; Earles et al. 1987)
Tin cans	Limited in quantity. May also serve alternate functions (e.g., sieves, bells, etc.).	(Buckles and Buckles 1984; Carrillo 1990a)
Utilitarian ceramics	Thick earthenware or stoneware vessel, e.g., crock or jug, usually with salt glazed finish (orange peel finish), gray to brown colors. Some have blue hand-painted designs over a salt glaze.	(Carrillo 1990a; Carrillo et al. 1989:422; Earles et al. 1987:91)
Food Consumption Artifacts		
Clay/wooden vessels and implements	Clay and wooden bowls and plates; clay cups; wooden spoons, etc.	(Dick 1963, 1968)
Euroamerican ceramics	Bowls, plates, and cups in limited numbers, if present.	(Carrillo 1990a; Darde 1962)
Subsistence Floral and Faunal Remains		
Animal bone	Goat, sheep, pig, chicken, beef, deer, bison, antelope. Ethnic variability may be detected in terms of cut or saved bone reflecting whole or chopped bone typifying the consumption of stews or soups by Hispanic occupants.	(Carrillo 1985, 1990a)
Seeds & nuts	May occur in the form of corn, wheat, beans, squash, and chili (domesticates) and other nondomesticated plants (e.g., gooseberry, golden currant, and wax currant). Nuts may be piñon nuts.	(Carrillo 1990a; M.A. Van Ness, personal communication 1985)
Pollen	In sealed contexts. May occur for various domesticated and nondomesticated plants.	(Carrillo et al. 1997)

**Table 14.** Archaeological signatures of Hispanic subsistence (1891-1915).

Category	Archaeological Expectations	Citations
<b>Food Procurement Artifacts</b>		
Firearms	Cartridges may be primarily .30 caliber earlier and manufactured by the following companies: Peters Cartridge Company--"P" headstamp on .22's, Winchester Repeating Arms (WRA)--"H" headstamp on .22's, Union Metallic Company (UMC headstamp). Introduction of smokeless powder, ca. 1895. .40 caliber cartridges may be present due to conservatism and cost of smokeless powder.	(Carrillo 1990a; Carrillo et al. 1989)
Handmade wooden tools and implements	Carts and spades.	(Carrillo 1990a; Darde 1962)
Iron tools	Limited. Plows with metal parts, shovels, axes and iron hunting knives.	(Carrillo 1990a; Darde 1962)
Containers	Hide, wood, or grass.	(Carrillo 1990a)
<b>Food Preparation Artifacts</b>		
Fireplaces	Interior corner <i>fogons</i> . Adobe block or stone with soil stucco.	(Carrillo 1990a)
Exterior fireplaces, <i>hornos</i> (ovens), and hearths	Adobe block or stone. Soil stucco.	(Carrillo 1990a)
Iron hunting knives	Highly curated. Rare unless accidentally dropped or broken.	(Carrillo 1990a)
Manos and metates; other lithic tools	Sandstone, granite river cobbles used for food processing. Also bedrock metates. Utilized or modified chert or obsidian.	(Carrillo 1990a; Fox 1977)
Clay vessels	Pots ( <i>ollas</i> ).	(Dick 1957)
Modified bottle glass tools	Utilized and flaked bottle bases, body and neck sections	(Carrillo 1990a; Dick 1957)
Cast iron pots/pans	Rare and highly curated unless accidentally dropped or broken.	(Carrillo n.d.)
<b>Food Storage Artifacts</b>		
Clay containers	<i>Ollas</i> (small crocks) and <i>jarros</i> (jugs).	(Dick 1963, 1968)
Bottle and jar glass	Limited quantities. Amber, amethyst, clear, less aqua, lime green predominant colors.	(Buckles and Buckles 1984; Carrillo et al. 1989)
Tin cans	Limited quantities. Primarily machine-made hole-in-top. Limited sanitary cans.	(Buckles and Buckles 1984)
Utilitarian ceramics	Decline in use of salt glazed ware. Bristol glazed (smooth) utility wares; cream-colored, black or brown lead glazed wares.	(Earles et al. 1987)
Enameled tin wares	Tin wares (e.g., coffee pots, pans, etc.) with blue or gray speckled enamel finish. Also cooking utensils, e.g., spoons.	
<b>Food Consumption Artifacts</b>		
Enameled tin ware	Blue or gray speckled enameled tin plates and cups. Also utensils, e.g., spoons.	(Carrillo 1990a; Carrillo et al. 1989)
Clay vessels	Bowls.	(Dick 1963, 1968)
Wooden and tin utensils	Wooden spoons still present. Limited tin utensils (e.g., knives, forks and spoons)	(Darde 1962)
Euroamerican ceramics	Limited quantities of bowls, cups, and plates.	(Carrillo 1990a; Carrillo et al. 1989)
<b>Floral and Faunal Remains</b>		
Animal bone	Domesticated goat, sheep, pig, and large and small game (e.g., deer, antelope, rabbit, game birds, etc.).	(Carrillo et al. 1997)
Seeds and Nuts	Corn, wheat, and collected nondomesticates; piñon nuts.	(Carrillo 1990a; Carrillo et al. 1997)
Pollen	In sealed contexts. Critical for determining pre- and post-agricultural settings	(Carrillo 1985; Carrillo et al. 1997)

**Table 15.** Archaeological signatures of Hispanic subsistence (1916-1930).

Category	Archaeological Expectation	Citations
Food Procurement Artifacts		
Firearms	Cartridges, predominantly .30 caliber rifle/pistol, with more .22s and shotgun shells. Most cartridges and shotgun shells found on these sites were made by Remington-UMC. The companies merged in 1910. Cartridges made by Peters Cartridge Company are present during the early part of the period. Winchester Repeating Arms manufactured shotgun shells and a few cartridges dating to this period. Some cartridges, mainly .22 caliber, were manufactured by the Western Cartridge Company, the Federal Cartridge Company, and the Savage Arms Company and were smokeless powder cartridges.	(Carrillo et al. 1989)
Iron tools	The presence of axes, hoes and shovels. Iron plows.	(Carrillo 1990a)
Transportation	Iron wagon parts (e.g., wheel hubs, wagon wheels, wagon furniture). Horse-related items (leather harnesses, iron buckles, horseshoes, horseshoe nails, etc).	(Carrillo 1990a)
Hunting knives	Rare, highly curated. Accidental loss or breakage (e.g., broken blade).	(Carrillo 1990a; Carrillo et al. 1989)
Tin containers	Tin wash tubs.	(Carrillo 1990a; Carrillo et al. 1989)
Wooden barrels	Iron barrel hoops. Used to procure water for homesteads.	
Food Preparation Artifacts		
Fireplaces and cast-iron stoves	Interior corner <i>fogons</i> still in use. Cast-iron stoves more common.	(Carrillo 1990a)
Exterior <i>hornos</i> (ovens) and hearths	Adobe block or stone. Adobe stucco on <i>hornos</i> .	(Carrillo 1990a)
Iron hunting knives	Highly curated. Rare unless accidentally dropped or broken.	(Carrillo 1990a)
Manos and metates; other lithic tools	Sandstone, granite river cobbles used for food processing. Also bedrock metates. Utilized or modified chert or obsidian may occur, but not common.	(Carrillo 1985; Fox 1977)
Clay vessels	Pots ( <i>ollas</i> ) not as numerous. Replaced by tin pots.	(Dick 1957)
Modified bottle glass tools	Utilized and flaked bottle bases, body and neck sections. Use of bottle bases extensive. Primarily amethyst and clear bottle glass utilized.	(Carrillo 1990a; Dick 1957)
Cast-iron pots/pans	More common use. Also enameled tin pots and pans.	(Carrillo 1990a)
Food Storage Artifacts		
Bottle and jar glass	Food bottles (e.g., ketchup, etc.) and canning jars. Colors mainly amethyst and clear. Jar glass is light blue. One-piece zinc jar lids with milk glass seal.	(Buckles and Buckles 1984; Carrillo et al. 1989)
Utilitarian ceramics	Bristol glazed (smooth) utility wares; cream-colored, black or brown lead glazed wares.	(Carrillo 1990a; Carrillo et al. 1989)
Tin cans	Baking powder and miscellaneous sanitary food and hole-in-top milk cans.	(Carrillo 1985)
Food Consumption Artifacts		
Enameled tin wares	Plates, cups, and bowls of enameled blue or gray tin wares.	(Carrillo 1990a; Carrillo et al. 1989)
Euroamerican ceramics	Plates, cups, and bowls produced in Europe or the U.S. Limited in number. Plain wares.	(Carrillo 1990a; Carrillo et al. 1989)
Wooden tools	Wooden spoons still in use but being replaced by manufactured items.	(Carrillo 1990a; Carrillo et al. 1989)
Table ware	Sets of silver-plated spoons, knives, and forks more common.	(Carrillo 1985; Sears 1970)
Food Remains		
Animal bone	Domesticated goat, sheep, pig, and large and small game.	(Carrillo 1985)
Seeds and nuts	Domesticates and undomesticates; piñon nuts.	(Carrillo 1985)
Pollen	Sealed contexts.	(Carrillo et al. 1997)



**Table 16.** Archaeological signatures of Anglo-American subsistence (1860-1890).

Category	Archaeological Expectations	Citations
<b>Food Procurement Artifacts</b>		
Firearms	Firearms and related items, e.g., cartridges; unmarked (no headstamps) rimfire (ca. 1860) and centerfire (ca. 1873) cartridges (large calibers, e.g., .40-.50 calibers for Model 1860 Henry or Model 1866 Winchester, Colt .45, and Spencer carbine); also cartridges manufactured by Winchester Repeating Arms Co. (WRC)--"H" headstamp on .22s; Union Metallic Co. (UMC)--"U" headstamp on .22s; United States Cartridge Co. (U.S. headstamp).	(Carrillo et al. 1989)
Iron agricultural tools	Hoes, shovels, scythes, plows, etc.	(Carrillo 1990a)
Transportation	Iron wagon parts (e.g., wheel hubs, wagon wheels, wagon furniture. Horse-related items (leather harnesses, iron buckles, horseshoes, horseshoe nails, etc).	(Carrillo 1990a)
Hunting knives	Rare, highly curated. Accidental loss or breakage (e.g., broken blade).	(Carrillo 1990a; Carrillo et al. 1989)
Containers	Tin or wooden tubs and pails. Tin containers with iron bales.	(Carrillo 1990a; Carrillo et al. 1989)
<b>Food Preparation Artifacts</b>		
Cooking	Cast-iron pots and pans.	(Carrillo 1985, 1986, 1990a; Earles et al. 1987)
Iron utensils	Iron spoons and knives.	(Carrillo 1985, 1986, 1990a; Earles et al. 1987)
Cast-iron stoves	The use of cast-iron stoves appears to begin in the 1860s and continues through all subperiods.	(Carrillo 1985, 1986, 1990a; Earles et al. 1987)
Exterior fireplaces	Possibly related to summer kitchen (South and Midwest).	(Carrillo 1985, 1986, 1990a; Earles et al. 1987)
<b>Food Storage Artifacts</b>		
Glass bottles and jars	Glass containers comprising bottles and jars in common glass colors: amber, lime green, aqua/light blue, sun-purpled amethyst, and clear. Many embossed-label bottles, few pontil-marked bottles. Few free-blown bottles or bottles produced in a dip mold, few hand-applied finishes. Bottles produced in any of a variety of two or three-piece molds and bottles finished with a lipping tool or produced in a closed mold. Other characteristics: cork and glass stoppers common, few milk bottles, and many "French square" extract bottles.	(Buckles and Buckles 1984; Carrillo 1986; Carrillo et al. 1989; Earles et al. 1987)
Utilitarian ceramics	Crocks and jugs of thick earthenware or stoneware vessels. Stoneware usually with salt glazed finish (orange peel finish) and gray to brown colors. Some have blue hand-painted designs over salt glaze. Earthenware ceramics are lead-glazed and may occur in brown, black, or tan colors.	(Carrillo 1986, 1990a; Carrillo et al. 1989; Earles et al. 1987)
Tin cans	Hole-in-top food cans with a thick and heavy hand-soldered seam on the earlier sites and machine-soldered cans (uniform soldered seam) in the 1880s-1890s. Sardine cans: three-piece body, one-piece body, and depressed lid. Other: tapered hole-in-top cans; condensed milk cans; bayonet and scored-strip openers.	(Buckles and Buckles 1984; Carrillo 1986, 1990a; Carrillo et al. 1989; Earles et al. 1987)
<b>Food Consumption Artifacts</b>		
Ceramics	Plates, cups, bowls, serving dishes, etc.; period-specific trademarks, with firm name and "limited" or "Ltd" (bottom of base). A high proportion of undecorated white ware vessels. The following wares will occur in limited quantities: sponge-decorated ware, under-glaze blue transfer painted ware, mocha-decorated ware, hand-painted white ware, luster ware, spatter ware, annular decorated white ware (black, blue, or white bands), relief-molded ware, polychrome decalomania, white ware with stamped-ink designs and flow blue or flow mulberry ware.	(Carrillo 1990a; Carrillo et al. 1989)
Iron utensils	Spoons, forks, and knives. Silver or silver-plated utensils.	(Carrillo 1985; Earles et al. 1987)
<b>Food Remains</b>		
Animal bone	Cattle and large and small wild game. Bison, deer, antelope, rabbits, and game birds.	(Carrillo et al. 1997)
Seeds and nuts	Undetermined.	(Carrillo et al. 1989)
Pollen	Sealed contexts.	(Carrillo et al. 1997)

**Table 17.** Archaeological signatures of Anglo-American subsistence (1891-1915).

Category	Archaeological Expectations	Citations
<b>Food Procurement Artifacts</b>		
Firearms	Most cartridges are .30 caliber or larger in size. Also .22s. Cartridges were manufactured mainly by the Peters Cartridge Company, Winchester Repeating Arms, and the Union Metallic Company. Introduction of smokeless powder ca. mid-1890s. Cartridges indicate conservatism through continued use of black powder. Use of shotguns increases.	(Carrillo 1986; Carrillo et al. 1989)
Iron agricultural tools	Hoes, shovels, plows, etc.	(Carrillo 1990a)
Transportation	Wagon parts of wood and iron (e.g., iron wheel hub; wooden wheel, etc.). Horse tack comprising horse, mule or oxen shoes, nails, bits, buckles, leather, etc.	(Carrillo 1990a)
Iron utensils	Iron knives for skinning and carving.	(Sears 1969, 1970, 1976, 1979)
Containers	Tin or wooden pails and tubs. Tin pails with iron bales.	
<b>Food Preparation Artifacts</b>		
Cooking	Cast-iron pots and pans. Enameled tin pots and pans in use.	(Carrillo 1985, 1986)
Iron Utensils	Iron spoons and knives. Wooden spoons possible.	(Carrillo 1985, 1986)
Cast iron stoves	Cast-iron stoves used throughout all subperiods.	(Carrillo 1986:86-102; Earles et al. 1987; Sears 1969, 1970, 1976, 1979)
<b>Food Storage Artifacts</b>		
Bottle and jar glass containers	Common glass colors (predominantly lighter): lime green, aqua/light blue, amethyst, clear and brown glass. Bottles were produced in a variety of two- and three-piece molds or in turn molds. Some bottles, particularly wide mouth jars and larger bottles, were machine-made. Presence of Owen's ring on bottle bases. Fewer bottles were produced in closed molds than in the previous period. Only a few bottles were finished with a lipping tool. Most extract bottles still have the "French square" shape and use cork stoppers. Crown caps found on beverage bottles. The presence of canning jars with one-piece zinc screw-on lids and milk-glass seals. Milk bottles may be present.	(Carrillo et al. 1989)
Utilitarian ceramics	Crocks and jugs – Bristol glazed (smooth) utility wares; cream-colored, black or brown glazed.	(Carrillo 1990a)
Tin cans	Most cans of the subperiod are hole-in-top solder dot cans with thin, machine-soldered seams. Toward end of period sanitary cans are present as are lard, tuna, and hole-in-top condensed milk cans. The solder dots are smaller in size than those from the initial period. Also present are hole-in-top or hole-in-cap meat cans and sardine cans with a one-piece body and a depressed lid. Also found in these sites are scored-strip and key with scored-strip openers.	(Buckles and Buckles 1984:49; Carrillo 1986:86-102; Carrillo et al. 1989:423; Sears 1969, 1970, 1976, 1979)
<b>Food Consumption Artifacts</b>		
Ceramics	Plates, cups, bowls, serving dishes. Most of the ceramics are undecorated white earthenwares and, to a limited extent, ironstone wares (refined earthenware). Trade marks and firm names are often depicted on the base of the items. Imported ceramics with name of country of origin. Stylistically, wares may include hand-painted and annular decorated white wares (black, blue, or white), flow blue wares, chrome decalomania and relief molded wares.	(Buckles and Buckles 1984; Carrillo 1986; Sears 1969, 1970, 1976, 1979)
Eating utensils	Silver-plated spoons, forks, and knives.	(Buckles and Buckles 1984; Carrillo 1986; Sears 1969, 1970, 1976, 1979)
Glassware	Water tumblers and possibly wine glasses.	(Buckles and Buckles 1984; Carrillo 1986; Sears 1969, 1970, 1976, 1979)
<b>Food Remains</b>		
Animal bone	Cattle, sheep, and large and small wild game. Deer, antelope, rabbits, and game birds.	(Carrillo et al. 1997)
Seeds and nuts	Domesticated plants (e.g., gardens); nuts undetermined.	(Carrillo et al. 1989)
Pollen	Sealed contexts	(Carrillo et al. 1997)

**Table 18.** Archaeological signatures of Anglo-American subsistence (1916-1930).

Category	Archaeological Expectations	Citations
<b>Food Procurement Artifacts</b>		
Firearms	The majority of the cartridges and shotgun shells found on sites from this subperiod were made by the Remington-Union Metallic Cartridge Company (REM-UMC). Cartridges manufactured by the Peters Cartridge Company are present during the early part of the period. Winchester Repeating Arms (WRA) made shotgun shells and a few cartridges during this period. Some cartridges, mainly .22 caliber, were manufactured by the Western Cartridge Company, the Savage Arms Company, and Remington Arms Company (smokeless powder).	(Carrillo 1990a; Carrillo et al. 1989)
Transportation	Automobiles becoming popular. Wagon parts and horse tack present.	(Carrillo 1990a)
Wooden barrels	Extensive use of barrels to haul water to homestead locations where water was not available.	(Carrillo et al. 1989)
Iron agricultural tools	Shovels to horse-drawn and mechanical farm machinery.	(Carrillo 1990a; Carrillo et al. 1989)
Containers	Tin pails and tubs.	(Buckles and Buckles 1984; Guthrie 1985; Sears 1976)
<b>Food Storage Artifacts</b>		
Glass bottle and jars	Bottles and canning jars from this subperiod are typically clear glass with light-colored amethyst, lime green, weathered amber, and dark brown glass also occurring. Machine-made bottles are common, and very few bottles have embossed labels, although manufacturer's marks are commonly embossed into the bottle base. Crown caps almost universally used on beverage bottles; continuous-thread screw caps are common as are milk bottles and canning jars have one-piece zinc screw lids with white milk glass seals.	(Buckles and Buckles 1984; Carrillo 1990a; Carrillo et al. 1989)
Utilitarian ceramics	Crocks and jugs. Bristol glazed (smooth) utility wares, cream-colored, black, or brown glazed.	(Buckles and Buckles 1984; Carrillo 1990a; Carrillo et al. 1989)
Tin cans	Sanitary cans are the most common type during this period; a few hole-in-top cans persist (condensed milk), although all of the specialty cans of the previous period are present. Geared, rotating can openers and key with scored-strip openers are present. Food cans consist of sardine, fruit, vegetable, juice, condiments, baking powder, lard/oil, beer (steel and cone tops, e.g., ca. late 1930s), associated openers known as church keys, cocoa, Vienna sausage, honey/molasses, syrup (i.e., Log Cabin) and others. Baking power cans with slip-on caps present.	(Buckles and Buckles 1984; Carrillo 1990a; Carrillo et al. 1989)
<b>Food Consumption Artifacts</b>		
Ceramics	The majority of the ceramics are undecorated earthenware white wares. Trademarks and firm marks are present, and imported ceramics are required to bear the name of the country of origin. Decorated wares include polychrome decalomania, annular decorated white ware, molded repoussé decorations, and stamped-ink designs on white earthenware. The presence of Fiesta ware (colorful glazes) denotes a late 1930s or early 1940s occupation.	(Carrillo 1990a; Carrillo et al. 1989)
Enameled tin ware	Plates, cups and bowls still in use, but not as common as previous subperiod.	(Carrillo 1990a; Carrillo et al. 1989)
Utensils	Spoons, forks and knives composed of silver-plated iron. Some silver utensils present but rare. Highly curated and loss possibly accidental.	(Carrillo 1990a; Carrillo et al. 1989)
Glassware	Tumblers and wine glasses present. Also milk-glass plates, bowls, and cups are present.	(Carrillo 1990a; Carrillo et al. 1989)
<b>Food Remains</b>		
Animal bone	Cattle and large and small wild game. Bison, deer, antelope, rabbits, and game birds.	(Carrillo et al. 1997)
Seeds and nuts	Domesticated plants; nuts undetermined.	(Carrillo et al. 1989)
Pollen	Sealed contexts.	(Carrillo et al. 1997)

### Research Question 5: Anglo-American Subsistence, 1860-1890

The archaeological record will reveal evidence of participation in a cash economy by the representation of selected artifacts of Euroamerican imported items which occur in greater quantities and types than on the contemporary Hispanic sites, but not as great as the later Anglo-American occupied sites (Carrillo 1985:88-91; Weber 1980:52). Table 16, above, lists artifacts, features, and floral and faunal remains indicative of Anglo-American subsistence activity in Subperiod II 1860-1890.

The following subsistence-related artifacts are expected to be present in assemblages obtained through controlled surface collection and testing.

It was proposed that the assemblages from these sites be compared with the assemblages from Hispanic sites with similar temporal periods to determine whether the frequencies of Euroamerican artifacts are greater on the Anglo-American sites. A successful attempt was undertaken by Church (2001) with a study of two archivally documented historic sites represented by an Anglo-American and a Hispanic homestead.

#### **Research Question 6: Anglo-American Subsistence, 1891-1915**

The sites associated with this hypothesis continue to reveal an increase in the quantities and types of Euroamerican artifacts. The following artifact types representing the material remains of assigned stages that represent components of the subsistence group are expected to be present in assemblages obtained through controlled surface collection and testing (Carrillo 1985:97). Table 17, above, lists artifacts, features, and floral and faunal remains indicative of Anglo-American subsistence activity in the subperiod 1891-1915.

As with the previous subperiod, the assemblages from these sites can be compared with the assemblages from Hispanic sites of this subperiod to determine whether differences exist or whether comparable increases are occurring in both groups.

#### **Research Question 7: Anglo-American Subsistence, 1916-1930**

The most distinguishing feature concerning the sites representing this group and subperiod generally consist of the extensive occupations in terms of architectural remains and considerable quantities of artifacts, in particular subsistence-related artifacts, not encountered with the earlier sites. Table 18, above, lists artifacts, features, and floral and faunal remains indicative of Anglo-American subsistence activity in the Subperiod III (1916-1930).

The following artifacts are expected to be present in assemblages obtained from controlled surface collections and testing from sites of this subperiod.

These sites can be compared with sites from the previous period to determine if the increase in size and density is perceived or real.

### **Research Domain 4: Settlement**

This research domain is oriented toward addressing the diverse settlement patterns established by the historic groups who occupied the Purgatoire River valley region. The domain is structured in terms of a series of eight hypotheses that address the historic settlement both in terms of temporal and sociocultural diversity. These hypotheses are derived from archival data and impressionistic observations. It is expected that most of the locational information will be available through survey. However, information about the age and function of sites may have to be obtained through testing (Carrillo 1985:77-111).

#### **Research Question 1: Hispanic Site Locations, 1860-1890**

For the period 1860-1890, the average homesteader was 1) Hispanic, 2) raised sheep, but generally had a subsistence-level orientation, and 3) probably settled with relatives or people with similar backgrounds to his own (Carrillo 1990b).

Many of the...early Spanish people who came here (Purgatoire Valley) lived a subsistence living. They had their 160 acres [64.8 ha] and they located in a canyon, where there was a water supply, and they had a few sheep and goats, a few horses, and cows. Did a little farming and lived a subsistence living [R. Loudon, personal communication 1984].

Purgatoire River Hispanic American colonists really were subsistence gardeners who depended on mutton for meat and marketed some raw wool and woven textiles for cash with which to purchase

tools, salt, and a few other items. Wartime demand for wool had stimulated expansion of sheep raising. Entire extended families migrated as units into this southern Colorado area. (Stoffle et al. 1984:103)

Site locations attributable to this group, based on historical data and previous observations will occur primarily in areas comprising the Purgatoire Valley or the tributary side canyons and their tributaries, on the wide valley bottoms or on benches overlooking the canyon bottom (Carrillo 1985:88; 1990a).

### **Research Question 2: Hispanic Site Locations, 1891-1915**

The sites representative of this time period are rare and serve to substantiate the fact that no major occupations occurred during this time period. Sites representing occupation in this time period should not occur in extensive quantities. The site locations will be situated along the side drainages of the major arroyos (Carrillo 1985:95; 1990a).

### **Research Question 3: Hispanic Site Locations, 1916-1930**

Based on archival research, approximately 10 percent of the post-1910 homesteads were Hispanic. These people tended to be laborers who were employed as herders or cowboys for the large Anglo ranches. They would often prove up their 320 acre [129.5 ha] claims and then sell them to the ranchers for whom they worked (Carrillo 1990b).

There were some Spanish families there that proved up their little homesteads. But they were mostly people who worked for my dad (Adam Arnet)...I think he got them in there, a lot of them. They would live on those places and prove them up, and when they were ready to move on he would buy the land from them (Margaret Crowder, personal communication 1984).

The following characteristics should apply: the site locations attributable to this group should be minimal, and the locations of these sites will be restricted to the major arroyos and their tributaries (Carrillo 1985:100; 1990a).

### **Research Question 4: Hispanic Shepherd Encampment Locations, 1870-1940**

This hypothesis is presented in conjunction with Research Questions 1 through 3 above in that the groups addressed were probably the major participants in this activity. Sheep ranching was a major economic activity throughout the historic occupation of the Purgatoire River valley. There are indications at Boggsville Historic site that the Purgatoire River was being used for summer sheep pasture in the 1840s and 1850s (Carrillo et al. 1997) and the entire extent of the Purgatoire was being utilized by the 1860s (Carrillo et al. 1997; Friedman 1985:176-177).

The majority of the sites appear to date between about 1900 and 1940, based on field observations. Earlier sites are thought to be represented, although they are not readily evident. Tentatively, the earlier sites do appear to be different and exhibit a lack of Euroamerican material culture. There is a suspected correlation between the earlier shepherding sites and lithic material and groundstone (Campbell 1969). On the later sites, groundstone and lithics have been found along with light scatters of Euroamerican material culture. A further argument for the use of lithic tools by Hispanic shepherders is the observation of possible utilization and modification of glass fragments by retouch methods on these sites and on Hispanic homesteads encompassing the total settlement period. Both Church (2001) and Clark (2003) discuss the alternative use of bottle glass. The 1900 census data also indicate that all 46 adult men occupied as shepherders were Hispanic with New Mexican origins (Carrillo 1990b; Friedman 1985:107). The locations of these sites should coincide, in many instances, with those used by prehistoric peoples, as for example, rockshelters, steppes, and hills (Carrillo 1985:100-103).

### **Research Question 5: Anglo-American Site Locations, 1860-1890**

This hypothesis relates to the early Anglo-American homesteads. It is postulated that as a result of a different sociocultural orientation, the social, economic, and ecological aspects as they relate to this group will be reflected differently than the Hispanic homesteads in terms of the archaeological record. According to Friedman (1985:396-397) the sites relating to this time period should be fewer in number but larger, with more extensive temporal occupation; should be associated with cattle, horse, and sheep ranching; and should be oriented toward the national economy (Carrillo 1985:91; 1990a).

The majority of the homesteads attributable to this time period should occur in the northern portion in the tributary canyons of the Purgatoire River (Carrillo 1990a; Friedman 1985:397).

### **Research Question 6: Anglo-American Site Locations, 1891-1915**

This hypothesis relates to the Anglo-American homesteads that were established during the period between ca. 1891 and 1915. During this period, the settlement that occurred was not as extensive as the preceding and following periods and occurred as two basic small settlements around ca. 1895 and again around 1910 (Friedman 1985:318-337). This period is not well documented historically; it was one in which the earlier established open-range ranches expanded and consolidated their control of the region. These sites are considered to be quite important for two reasons: 1) the sites are not extensively documented in the literature and 2) the sites represent transitional units between the two main settlement periods. As a result, the sites can contribute to an understanding of the settlement of the area as a whole (Carrillo 1985:97; 1990a).

The sites related to this period can be identified on the basis of the earlier settlements and those that occurred toward the last part of the period. The earlier sites in many respects resemble those of the early period but with some stylistic changes. The ca. 1910 sites have not been examined in great detail, but appear to resemble the ca. 1916-1930 sites to a certain extent, i.e., exhibit a more extensive utilization of Euroamerican material culture (Carrillo 1985:97; 1990a).

The sites are expected to be located primarily along major arroyos (Carrillo 1985:97; 1990a), and variability of location may be expected between the earlier and later sites from this subperiod.

### **Research Question 7: Anglo-American Site Locations, 1916-1930**

Although the Purgatoire River valley was used by the large cattle and sheep ranches the greater part of the area was not occupied as late as 1910. As late as 1915, most of the land owned was along the major water sources, such as the Purgatoire River and tributary canyons and arroyos. The area of the Mountain Branch of the Santa Fe Trail was still unoccupied (Carrillo 1990b).

After 1910, thousands of settlers began to move west, establishing homesteads throughout the Plains, including southeastern Colorado. This influx was due to the Enlarged Homestead Act of 1909, which granted 129.5 ha (320 acres) of land to persons who would live on the land, make improvements to it, and farm 16.2 ha (40 acres). Extensive promotions by the railroads also encouraged this migration. A few wet years, improved techniques for dryland farming, and climbing agricultural prices enabled the new settlers to enjoy a brief period of success (Carrillo 1990b).

In 1909, the Model Land and Irrigation Company began construction of an irrigation system, as well as the new town, Model, near the railroad stop known as Poso. Model was platted in 1913, and by 1919 irrigated farmland was being promoted for sale to prospective settlers. Along with Model, several other communities that had been built along the railroad after 1878, including Simpson, Early, Tyrone, Thatcher, and Delhi, began to thrive because they provided essential services to the homesteaders and ranchers. Model contained two stores; there were also stores in Simpson, Thatcher, and Delhi (Carrillo 1990b).

Historical and archaeological records provide tangible evidence of this population increase. Friedman (1985:122), using General Land Office (GLO) survey plats dating from 1869, 1881, 1921, and 1942 for 18 townships in Las Animas County, identified a total of 22 historic sites recorded between 1869 and 1881. On the other hand, for the period between 1921 and 1942, he found evidence of 38 historic sites located in five townships. This clearly indicates that this later period of settlement was considerably more extensive than the earlier pre-1881 homesteading period. Friedman describes additional evidence of this trend:

Using locations recorded by the University of Denver archaeological survey which we believe have high archival research potential, 55 sites [were selected] as a sample. It was found that the earliest date of patent was 1875 and 1887. In comparison, 42 sites, or 76.4% of the sample, were patented between 1920 and 1938. The mean date from this sample was 1918. The mode was 1921. Since it took five years for most people to prove up their claim, this indicated that the years from 1916 through 1919 were the heaviest period of settlement in the PCMS. This brief homesteading boom was dominated by Angloamericans. Eighty-five percent of the homesteaders who acquired patents during this period had Angloamerican surnames (1983:167-168).

Twenty-two sites, or 40 percent of Friedman's sample, were patented under the Enlarged Homestead Act of 1909, which allowed 129.5 ha (320 acres) of nonirrigable land to be claimed. Thirty-six percent, or 20 site locations, were patented under the Stock Raising Homestead Act of 1916, which allowed claims to 259.0 ha (640 acres) of land for use as stock grazing pastures if the land was not irrigable or of value for timber. These 42 sites, which were patented as a result of the two Homesteading Acts, are located in the southern portions of the project area in T. 31S, R. 58W; T. 30S, R. 60W; and T. 29S, R. 60W (P. D. Friedman 1983:168-169). As Friedman goes on to note:

These four townships accounted for 56% of all the sites in the PCMS identified through archival materials; being 49 out of the 88 site locations found in the GLO surveys and U.S.G.S. quadrangle topographic maps. The average date of patent for these 49 sites was 1921. Eighty-four percent of these locations were patented between 1921 and 1926. Given the five years it took to prove up a claim, this would indicate a period of settlement from 1916 through 1921 (1983:18-40, 169).

Additionally, incorporating the 1984 site data, six of the seven homestead sites recorded had been archivally documented (Friedman 1985:207-216). Of these, two were patented under the Enlarged Homestead Act of 1909, and four under the Stock Raising Act of 1916. Therefore, using the adjusted total of 61 sites, 24 of them, or 39 percent, were equally patented under each of the homestead acts.

By 1925 the weather patterns had begun to change, and a dry period occurred in the region. It was about this time that people began to move out of southeastern Colorado. Many of these individuals abandoned their homesteads or sold out to the established ranchers in the area. A few ranchers were able to survive the drought and the Depression by making the transition to primarily sheep ranching. By the late 1940s and early 1950s, most had switched back to cattle raising because of a shortage of Hispanic shepherders. Many older Hispanics were able to retire, and the younger individuals left the area either because of World War II or to take better paying industrial jobs (Carrillo 1990b; Weber 1980:62-63).

By far the largest number of sites in southeastern Colorado should be related to the post-1910 homestead boom. The majority of these sites are located on the steppes away from the Purgatoire River. The average homesteader during this period would have been an Anglo-American from the Plains states of Texas, Oklahoma, Kansas, Nebraska, or Missouri. He would have settled in southeastern Colorado around 1916 and patented 320 acres [129.5 ha] using the Enlarged Homestead Act of 1909 (Carrillo 1990b; Friedman 1985:397).

The majority of the site locations are expected to be located in the steppes and flats along arroyos and their side drainages (Carrillo 1985:107; 1990b).

## CONCLUSION

An attempt has been made to provide an example of a regional and temporal approach utilized to understand the complex historic occupation of a portion of the Purgatoire River valley. The approach involves a temporal framework with three major subperiods of historic occupation of the PCMS and represents a microcosm of the settlement of southeastern Colorado. These subperiods are organized in a series of stages for the years 1860–1890, 1891–1915, and 1916–1930, and to a lesser extent, an earlier occupation during the years 1786–1860. It is based on a model of settlement that emphasizes differences in economic practices between Hispanics and Anglo-Americans, the two principal Euroamerican ethnic groups present in the region. Archaeological expectations for sites in the PCMS, and throughout southeastern Colorado, are drawn from the model. Research questions relating to subsistence, investment in facilities, and settlement were then developed on the basis of these expectations. For a complete background of the utilization and results of this methodology see Carrillo (1990a, b); Carrillo and Kalasz (1990); Carrillo et al. (2003); Kempton and Carrillo (1990).

## SUMMARY: IMPLICATIONS FOR ETHNICITY ON HISTORIC SITES

In the previous sections, an attempt has been made to demonstrate the applicability of the incorporation of the concept of ethnicity using a combination of archaeological, ethnohistoric, and historical data as the basis for evaluating the ethnic character of certain sites in southeastern Colorado. Most of the work has been carried out on sites in southeastern Colorado that are attributable to Hispanic New Mexican occupation from the nineteenth and twentieth centuries (Carrillo 1985, 1990b; Carrillo et al. 2003; Church 2001; Clark 2003). It is argued that Hispanics who settled in southeastern Colorado in the mid-nineteenth century brought with them a different materialist culture that had been influenced greatly by some two and a half centuries of interaction with Native Americans of the Southwest. Both architecture and artifacts found in sites in southeastern Colorado reflect the long Hispanic tenure in New Mexico. Distinctive architectural traits include the use of stone, jacal, *fuerte*, and adobe construction for buildings of various functions; the presence of corner fireplaces in domiciles; and artifact assemblages distinctive mainly in their simplicity. Many items of Euroamerican derivation are scarce in the early period, and even during the twentieth century only selective items occur, and aboriginal-type artifacts – groundstone and chipped stone tools and manufacturing byproducts – may occur, in addition to modified glass fragments. Identification of such traits, and establishment through archival and other historical sources of the presence of New Mexican Hispanics in the nineteenth century in southeastern Colorado, goes a long way to explain seemingly enigmatic architecture-artifact combinations at many sites.

Because of the conflicting nature of the data, that is, the occurrence of aboriginal-type artifacts on sites with traditional historic indicators, historic sites classified as "multicomponent" (i.e., containing both traditionally classified prehistoric artifacts in conjunction with historic artifacts), sites should generally be examined by using a combination of archaeological, ethnohistorical, and historical data. In this manner a case was made for the very probable occurrence of architecture and artifacts on southeastern Colorado historic sites that can be attributed to Hispanics originating in New Mexico and possibly elsewhere in the Southwest. This is only one example.

Generally, the study of ethnicity on historical archaeology sites in Colorado has been minimal in terms of all of the historical ethnic groups that occupied or currently occupy territory within the political boundaries of the state of Colorado. According to the Compass database, the majority of the studies on ethnicity have been carried out in southeastern Colorado, primarily with New Mexican Hispanic groups. The Hispanic-related sites located on the Western Slope occur in Archuleta (40), Montezuma (24), Rio Blanco (43), and Routt (34) counties. A cursory examination of the sites from each county revealed that the majority of the sites in Archuleta and Montezuma Counties relate to aspen art in the San Juan and Rio Grande national forests. The Rio Blanco sites relate to shepherd's camps and rock and aspen art in the White River Resource Area. The Routt County sites contain aspen art in the Routt National Forest as well as other areas. Steve



Baker prepared a five-year treatment plan for cultural resources in Rio Blanco County. It addresses primarily the cultural resources encompassing historic ephemeral campsites or "sheep camps" and associated rock and aspen art for the Southwest Rangely Area in Rio Blanco County (Baker 1991a, 1992).

Although many known historically diverse groups initially occupied various parts of the territory and later the state, very little has been done in terms of systematically examining the archeological record to define potential ethnic attributes of both artifacts and features. For that to occur, a systematic analytical framework must be developed to illuminate this potential. A proposed framework is presented below.

## **An Analytical Framework**

The historical information available about a site can be used to determine the general temporal and spatial framework of the artifact assemblage for the preparation of a site research design and excavation plan. The preliminary framework presented below serves as the basis for the initial development of a system for artifact classification that can be utilized with both surface and excavated artifacts. The system is a modified version incorporating several methodological techniques currently in use in the field of historical archaeology (Andrefsky 1990d; Hardesty 1988; Hardesty et al. 1995; Lewis 1984; South 1977b, c; Sprague 1981). This system has been used successfully in several projects undertaken in Colorado and serves as a basis for undertaking a functional perspective toward the data (Carrillo and Clark 1995b; Carrillo and Petersen 2002b; Carrillo et al. 1989; Carrillo, Rhodes et al. 1993; Carrillo et al. 1999; Carrillo, Quinnell et al. 2004; Carrillo, Pearce et al. 1993; Carrillo, Killam et al. 2004; Carrillo et al. 1997; Hardesty et al. 1995; Wood et al. 1999). This is considered to be an essential step in terms of developing an analytical framework that goes beyond mere artifact counts and identification, and instead focuses on the development of explanations, based on solid observations of the social realm of the historic past.

Stanley South (1977b) has stated that the understanding of past lifeways, culture history, and culture process through the analysis of material things is one of the main concerns of archaeologists. Recognition of broad cultural patterns through quantitative studies is the appropriate methodological approach. According to South,

once pattern is abstracted and synthesized with other patterns these demonstrated regularities are often expressed as empirical laws. The explanation of why these law-like regularities exist is the goal of archaeology. The explanation is addressed to the causal processes in the past cultural system in the form of hypotheses to be tested with new data through research designs specifically constructed to fit the questions being asked. The understanding of culture process and how it works comes through this basic procedure of archaeological science. This understanding provides a conceptual environment in which new theory is invented to explain the phenomena the archaeologist has observed (1977b:xiii).

To discover and investigate activities and broad cultural patterns of behavior at historic sites, a classification scheme based on the function, rather than the material or morphology of artifacts, is used. This is one of the common errors in most artifact classification systems. All similar items are grouped together regardless of their functions. As an example, the function of a bottle can cause confusion over the difference between the container and the contained. Bottles are manufactured to hold liquids as diverse as rum and perfume. Sprague (1981:259) indicates that archaeologists should be "more concerned with the use, meaning, and function of the rum and perfume than the form and technology of the bottle holding the liquids." The functional classification system adopted for the artifact study reflects the concern for arriving at interpretations of cultural meaning. As an example, bottle glass is considered not only with regard to its original context but also to an alternate context, that is, worked glass.

In the final analysis, the purpose of a historic site study is to contribute to our understanding of the culture as a whole. This requires knowledge of the function of cultural elements discovered at that site. Logically therefore, from the point of view of the anthropologist, function is the highest and most productive basis for site analysis (Sprague 1981:252).

The framework used to structure historical artifacts into meaningful integrated units of data is discussed below.

## **The Functional Structure of the Artifact Analysis**

To assess the historic artifact assemblages recovered from historical archaeology sites, a functional classification system using criteria derived from other established classification schemes (Andrefsky 1990d; Hardesty 1988; Hardesty et al. 1995; Lewis 1977, 1984; South 1977b, c; Sprague 1981) is proposed as the basis for classification on Colorado historical archaeological sites. The system is based upon a thorough familiarity with the types of domestic artifacts associated with the nineteenth-century historic period throughout the western United States and includes indigenous (i.e., stone, ceramics, bone, etc.) and modified glass artifacts produced by non-Anglo-American groups.

In 1965, Binford initially addressed the issue of the use of appropriate archaeological research strategies to address adequately the complex nature of archaeological remains as they relate to past cultural systems:

Culture is not necessarily shared; it is participated in. And it is participated in differentially. A basic characteristic of cultural systems is the integration of individuals and social units performing different tasks, frequently at different locations; these individuals and social units are articulated by means of different levels of corporate inclusiveness. Within any one cultural system, the degree to which the participants share the same ideational basis should vary with the degree of cultural complexity of the system as a whole. In fact, a measure of cultural complexity is generally considered to be the degree of internal structural differentiation and functional specificity of the participating subsystems... Within any given cultural system, the degree to which all the participants share common ideational preferences should vary inversely with the complexity of the system as a whole. The sharing of cultural elements by distinct systems will be a function of the nature of the cultural means of articulating distinct groups with each other (1972:198-199).

Culture is multivariate, and its operation is to be understood in terms of many causally relevant variables which may function independently or in varying combinations. It is our task to isolate these causative factors and to seek regular, stable, and predictable relationships between them... Our taxonomies should be framed with this in mind. We emphasize the nature of variability in artifact populations and facilitate the isolation of causally relevant factors. Our categories should be justifiable in terms of possessing common structural or functional properties in the normal operation of cultural systems. These categories should be analyzed in terms of their behavior in various systems and in situations of systematic change (1972:199).

The artifacts found on most historic sites in Colorado, and throughout many other areas of the American West, have been found to be varied, but generally are made up of artifacts that represent 13 different groups, each assigned identifiable functions relating to the following general categories of human behavior. These categories are 1) activities, 2) architecture, 3) fuel/energy, 4) household/domestic, 5) leisure/recreation, 6) personal, 7) subsistence, 8) transportation, 9) industrial, 10) other, 11) bottle/jar glass, 12) worked glass, and 13) non-Euroamerican manufactured artifacts. The system is flexible to allow the addition of new categories or the expansion of existing categories to allow for the unique nature of specific type sites, such as nineteenth-century military sites. For example, this could include expanding the button category to include military buttons, in addition to other military items. Within these groups are subcategories that structure the activity making up a specific group through the use of artifact frequencies. Under the architecture group, for example, the subcategories might consist of building hardware, machine-cut nails, hand-adzed or hand-sawn lumber, dimensioned lumber, slate, adobe fragments, and others. The frequencies of the artifacts for each group and their associations serve to define the types of activities present at each site. More specific functional classifications may also exist, such as for artifacts that are used to undertake various processes within the subsistence group (i.e., food procurement, food preparation, food storage, food consumption and food remains) (see Research Domain 3: Subsistence/Economic Activities; Table 13 through Table 18, above). The artifact database represents the framework that structures the artifact

data into identifiable patterns and enables them to articulate the general statements of objectives. General definitions and justifications for the artifact groups are outlined below.

1. Activities: These artifacts are related to behavior as diverse as general agricultural farming and ranching (plows, barbed wire, horse tack, tractor parts, wagon parts), the construction and maintenance of farming and ranching activity (specialized corrals, ditches,) and other associated miscellaneous activities.
2. Architecture: These artifacts are associated with the construction of shelters either for human occupation and use (houses, outhouses, etc.) or animals (barns/sheds). The artifacts will be related to building hardware, building material, plumbing, house features (milled lumber, decorative trim, wallpaper, etc.), window glass, cut and wire nails, and other associated miscellaneous artifacts.
3. Fuel/Energy: This group is associated with the indicators of fuel types used for heating and cooking (coal, charcoal, kerosene, natural gas); lighting (kerosene, electricity, natural gas) and transportation (battery, gasoline, motor oil).
4. Household/Domestic: The artifacts associated with this group consist of those normally found within a domestic household. They may include devices associated with timekeeping, decorative furnishings, furniture, illumination, telephone, writing, cleaning, desk-related activities, art and art supplies, and others.
5. Leisure/Recreation: This group of artifacts represents activities associated with leisure and recreation. They may be related to drinking (glass bottles and jars and ceramic jugs), musical instruments, smoking, sporting goods, toys, and other related items.
6. Personal: The artifacts represented by this group may be related to adornment, baggage, coins, clothing, footwear, hygiene/health, and other similar items. The artifacts may also be gender specific.
7. Subsistence: The artifacts associated with subsistence represent the total cycle of food procurement to food remains. These may include guns, cartridges, projectile points, and scythes; food preparation artifacts may include knives and pans, pots; food storage artifacts are represented by glass bottles and jars, ceramic crocks and jugs; food consumption is represented by ceramic and enameled tin plates, plates, bowls and cups, silver-plated knives, forks and spoons, and food remains by bones, macrofossil/faunal remains and other associated artifacts and ecofacts.
8. Transportation: This group relates to all of the transportation-oriented artifacts derived from airplane, automobile, cart/wagon, train, boat, and other similar items.
9. Industrial: This group relates to any artifact relating to major industrial activities (e.g., mining, milling, steelmaking).
10. Other: This group is represented by unidentifiable metal fragments and other miscellaneous artifacts or those from specialized activities that do not always occur on homestead sites (e.g., military items, such as buttons).
11. Glass: This group is comprised of bottle and jar glass fragments structured by color. The colors include aqua, clear, lime green, amethyst, amber (brown), green, olive, milk, blue and other bottle glass. Specific glass colors can be sensitive in terms of time and functional elements.
12. Worked glass: In southern Colorado, modified glass artifacts are found, and they are structured according to glass color similar to #11 above.

13. **Native American:** In southern Colorado, in similar contexts as those where worked glass occurs, artifacts normally associated with Native American occupation are present. These may consist of flake or flake tools, groundstone, bone tools, hematite, lithic bifaces and flakes, and other miscellaneous and undetermined items. The indications are that Hispanic New Mexicans also utilized lithics, which when found in historic contexts need to be more extensively considered rather than assuming that they are strictly of Native American manufacture.

Operationalizing the various research questions, formulated and explained above, requires certain common types of data analyses and interpretation. A general description of some of the analyses that can be used to assist in the resolution of the questions is presented below as an example. Additionally, ongoing research has revealed significant patterns that comprise an entirely different set of circumstances (e.g., gender issues) that require alternate theoretical, analytical, and methodological approaches.

The artifact groups described above are presented in functional contexts that can be viewed as a series of associations or constellations used to reconstruct ties to the cultural, social, economic, political, and religious systems in which they once functioned in the past.

As an example, the household variables in a research design may require that an analysis of floor size, artifact type, and variability be examined in detail. For example, according to Hardesty (1981) large-to-medium floor size in conjunction with relatively high percentages of purple glass (indicating the presence of food containers, medicine bottles, and other family associated items) as well as female/child associated objects (such as decorated porcelain, brass pendants, cold cream jars, women's shoes, and children's toys) may indicate the presence of a family household. In contrast, a larger-to-medium floor size with extremely limited artifact variability and a high percentage of bottle glass may indicate the presence of a store, saloon, or other type of specialized establishment. Sexual segregation may also be indicated by similar patterns that are recognized for the site and clarified by historical documents. Additionally, other artifacts may represent ethnic and gender derivations which could foster interpretations contradictory to what might result from reliance solely on the variables just outlined. An awareness of the limitations of the variables is necessary so that the propositions are not forced upon the data and illusionary results created. Alternate explanatory variables need to be created to explain new or different observations.

Other social variables, such as stratification and social distance, can be examined through the analysis of coin denomination variability and artifacts related to occupation specialties, as well as through lateral cycling, recycling, and secondary use of artifacts. Such conclusions are enhanced with the identification of ethnically associated objects, such as religious items, food containers, or special food types as indicated by floral remains. Other important variables include the modification of introduced Euroamerican manufactured items by using traditional methodologies, either European or indigenous.

Economic variables focus on distribution and manufacturing networks, defining the role of historic sites within broader regional, state, and world systems. Artifacts such as cartridges, buttons, bottles, coins invariably contain manufacturing and maker's marks or dates and can provide specific information on the manufacturing sphere and time frame in which the community participated. However, it must be remembered that there are alternate approaches that need to be considered when examining historic sites with ethnic or traditional groups, either European or indigenous. The use of a systematic analytical framework can result in revelations of otherwise unknown or masked traditional features and artifacts.

## SUMMARY

At the beginning of the chapter four goals were outlined to provide information about the concept of ethnicity. The first entailed providing a general review of the concept of ethnicity within the realm of anthropology today and its relationship to archaeology. The concept of ethnicity has been defined within cultural anthropology; however, it has been and continues to be a debated issue, and there is an array of

theoretical perspectives about how ethnic groups are formed. There have been a number of studies in many fields, and this overview addresses specific subjects that relate to the archaeology of ethnicity. The concepts incorporate general overviews of ethnicity, race and nationalism, culture contact and ethnogenesis, ethnicity and material culture, and acculturation and creolization.

The second section presents overviews of selected methodological, interpretive, and political concepts in an attempt to define ethnicity in the archaeological record. This provides a basis from which to view the results of the historical archaeology carried out in Colorado with regard to the role of ethnicity. This section discusses information concerning the historical archaeology sites that were assigned an ethnic attribution in the historical archaeology records on file at the Office of Archaeology and Historic Preservation, Colorado Historical Society's Compass database program. The section provides some limited proposals for making the program more suitable for use in defining ethnic and other important variables, such as gender attributes, in a more confident manner. In reviewing the historical archaeology sites in the Compass database that can be said to have an ethnic component, the results are not very encouraging. As has been demonstrated in the above sections, the majority of the valid sites with ethnic associations consist primarily of the Hispanic New Mexican sites that have been found primarily in southeastern Colorado and on the Western Slope of Colorado. Additionally, throughout parts of the state, other historic ethnic groups (i.e., Italians, Eastern Europeans, Germans, Irish, English, Scots, and Swedes.) have existed. With the exception of the few groups that are identified in the OAHF records at the Colorado Historical Society, as noted above, archaeological research of these ethnic groups, has not been a priority in the past. There is much evidence of futile attempts that have been made at defining ethnic attributes but they are so general and appear to be no better than mere guesses and the information is not useful.

A possible reassessment of all 8,250 sites that include architectural sites with ascribed attributes should be considered. At minimum, the 1,799 historical sites should be reassessed in terms of determining whether the ethnic assignments are correct and, if not, to make appropriate changes. If indications suggest that there is not enough information to make a determination, the status should be changed.

The third goal entailed presenting examples of five ethnically identified historical groups (i.e., African-American, Italian and Italian-American, German and German-American, Japanese and Japanese-American, and Hispanic New Mexican), that have been examined in archaeological contexts. The examples are presented to support the observations that contribute to the creation of meaningful complementary relationships between the historical record and the archaeological record to include issues such as ethnicity, race and gender. Additionally, brief historical narratives were presented for the historical groups (i.e., Irish, English, Scottish, and Scandinavian groups) that essentially have no defined archaeological context.

The final section addresses a methodology developed to understand Hispanic New Mexican historic sites in southeastern Colorado in an attempt to address the issue of ethnicity, in addition to other observable social and cultural aspects, in the archaeological record.

Based on extensive experience, the solution is to better define the archaeological variables that may denote certain ethnic groups, such as has been done with the Hispanic New Mexican sites and incorporate them into a revised Historical Archaeology Component Form. It will take some time. However, if everyone practicing historical archaeology makes a concerted effort to undertake the historical and ethnohistorical research necessary, trait lists (i.e., ethnic markers) or definable artifact patterns will begin to emerge that all field practitioners can utilize in their search for ethnic, racial, gender and social class issues.

In a recent conversation Jon Horn shared his thoughts on the topic of ethnicity, which make a proper conclusion to this chapter:

Initial identification of cultural/ethnic background is only the first step in ethnic studies as simply working on a site where individuals of a particular cultural/ethnic background were present is not the same as studying or identifying ethnicity. Also, ethnic studies do not necessarily need to be restricted to minority groups, to which I think a lot of people equate such studies. Any individual or group of

individuals may retain elements of their heritage consciously or unconsciously that may be of interest anthropologically because of the process of assimilation, modification, or retention of cultural characteristics. As you [Carrillo] said, and I completely agree, it is patterning that we need to look for and researchers need to think about how they order their data in order to ferret out the patterns that might show these things. Maybe how we generally go about our analysis and recording is good enough or maybe there are new techniques people can come up with to identify those patterns. A very interesting and challenging topic! (Jonathan Horn, personal communication 2005).

The purpose of this chapter is to develop a context from which to examine ethnicity on historical archaeological sites in Colorado. As has been evident throughout the chapter, the concept involves several varying ideas concerning ethnicity and what it represents. The development of a context from which to view ethnicity in the archaeological record of the state is still in its infancy. It needs to be considered as an integral component for all future Colorado historical archaeology work regardless of the cultural context. It is hoped that what has been presented contributes in a small way to that goal.

## CHAPTER 6. RURAL AGRICULTURE

**Minette C. Church and Bonnie J. Clark**

### INTRODUCTION

The theme of this chapter covers all the farming and ranching sites across Colorado, including everything to do with agriculture dating from Spanish/Mexican settlement on land grant lands in Colorado, beginning in the 1840s, to homesteaders, farmers, and livestock growers of the twentieth century. This chapter provides some definitions, models for research in rural agricultural regions proposed by researchers inside and outside the state, and context for Colorado sites. The next section gives examples of regional studies in Colorado based largely on survey data and smaller scale studies based on excavation of specific sites. The sources for these come from various archaeological and historical contexts, cultural resource management (CRM) work, federal agency reports, and the research from academic institutions. All provide examples of the kind of research questions archaeologists have addressed in Colorado since the Buckles wrote their historical archaeology context (Buckles and Buckles 1984). These examples are followed by a discussion of overlaps with other chapter themes, the research gaps that still exist, and suggestions for improved recording of such sites so that they are more amenable to future research.

Colorado's rural agrarian sites represent a significant portion of historic period sites recorded in the state, but relatively few of them have been explored systematically with anthropological or historical research questions in mind. The two main varieties are farms and ranches. Even though there are fewer ranches than farms in Colorado, ranches have gotten noticeably more scholarly attention. Bernard L. Fontana defines ranches as "a type of settlement devoted to a livestock enterprise" (Fontana 1967:60), thus implicitly separating that economic goal from one tied more to crop production. Discussing ranching's origins, he states further that "historians, bibliographers, and writers of scripts and novels have conspired in recent years to emphasize Angloamerican cattle ranching – and to glamorize it – in such a way that we have often come to think of it as a unique phenomenon of the western United States frontier," whereas in actuality ranching in general is "derived almost wholly from Spain and from Portugal" and "most ranching traditions in what later became the United States came immediately out of Mexico" (Fontana 1967:60-61).

Terry G. Jordan, author of *North-American Cattle-Ranching Frontier: Origins, Diffusion, and Differentiation*, presents a more complex version of ranching origins, characterizing strategies as regionally diverse and the result of the mixing of pastoral traditions from diverse regions, originating in the Highlands of Britain, western and southern regions of Spain, and tropical regions of West Africa. He characterizes ranching on the western U.S. frontier as a "zone of contact between two contrasting types of land use": a creolized form of ranching that came through coastal northern Mexico from Spain and Africa via the West Indies, and another creolized form that came variously along the Gulf Coast through French Louisiana and from the South Carolina Piedmont inland to Texas. This latter tradition he calls the Anglo-Texan ranching system (although it has some input from African and more from Cajun traditions along the way). As this latter tradition came west, ranchers came to be horse-mounted, decreased the number of pigs in ratio to cattle (related to leaving forests for grasslands), and adopted some new tools, such as lassos. Their language picked up Spanish words for many of these changes as the adaptations occurred (chaparrals or chaps, lariats, broncos, etc.). The two traditions, the Latin-American and the Anglo-Texan, carried various elements from their contributing territories as well as adaptations to new and unfamiliar ecological settings, and when they came

together in the West, they competed with each other. Jordan believes that the Anglo-Texan system won the day in the end because it was more commercially oriented, provided better care and feeding of animals through the winter months, and had types of animals better adapted to the colder as well as more arid climates as they moved north onto the central and northern Plains (Jordan 1993).

Both Fontana and Jordan contextualize ranching in larger pastoral traditions of various global origins, and so Fontana suggests a broadly comparative approach to the archaeology of ranches, looking at pastoralism, transhumance, and species and varieties of livestock and their individual physiological requirements as they affect ranching behavior, and he advocates developing typologies based on this kind of information. To address these topics, Hardesty argues that one cannot look at ranches the way archaeologists traditionally record them on surveys, as a nucleated buildings, yard, and corral areas (Hardesty 1982). Fontana prefers a landscape approach, saying that “locations of driving trails, railheads, auction yards, feed pens, slaughter houses, and wool and hide markets are as much a part of the over-all story as the locations of ranch boundaries and of ranch house settlements themselves” (Fontana 1967:61). Building functions, spatial relationships between buildings, and “spatial relationships of ranches to one another” must be used to recognize settlement patterns (Fontana 1967:61).

This multiscale landscape approach to collecting data on the built environment that Fontana outlined almost 40 years ago seems prescient in light of more current research approaches. Donald Hardesty has presented research problem domains that he suggests are pertinent to ranching and farming sites, including changes through time in agricultural societies. These include looking at various historical and anthropological frontier models, human/animal/environmental interactions, ethnic interaction, and site formation processes (Hardesty 1982:216-217). He further suggests using variables such as soil properties, altitude, time period, geographic zones, and livestock type to develop predictive models. He advocates looking at buildings and other features as interconnected “systems” in a manner not unlike that suggested by Fontana, emphasizing “the need to understand the whole system in order to understand the pieces” (Hardesty and Little 2000:119).

At the scale of individual artifacts, Fontana notes that “there are few which are peculiar to ranching” and archaeologists need to look at “total assemblages of tools which may characterize a ranching operation” (1967:61). Frequencies of machine-made and mass-produced items versus recycled, handmade or “jerry-rigged” goods might also be diagnostic on ranch sites (Fontana 1967). The latter kinds of artifacts may in fact be common on rural agricultural sites in general, farms as well as ranches. As Jonathan C. Horn has noted, “Ranching often involves farming, such as growing alfalfa or corn for feed or cutting wild hay, and farmers often raise grazing animals for meat” (Horn 2004a:37). However, he says the two activities may still be distinguishable in larger-scale landscape terms, as ranching leaves “a larger signature on the landscape in the West because of the practice of grazing on the public domain” (Horn 2004a:37).

William G. Buckles suggested a typology of agricultural sites based on the degree of investment in place, using the terms “scroungers, squatters, and settlers” to describe points along a continuum from more ephemeral sites, occupied for only a short time, to established farmsteads or ranches (Buckles 1981, 1993a). Scroungers are least well represented in the archival record, as they did not own the land they occupied and were transient. Examples related to agriculture include “trail herders...itinerant cowboys and sheepherders, moonshiners, rustlers and Gypsies” (Buckles 1993a:6). Buckles suggests that the diagnostic archaeological correlates of such itinerate folk would as often be what is *not* found on a site as what is: evidence of only temporary or portable shelters, “no outhouses, no segregated trash dumps, no fences” or other boundary markers (Buckles 1993a:6). Squatters, the next group on Buckles scale of commitment, were also not landowners and were associated with “specialized land and resource uses and not for the long term” (1993a:6). Examples of squatters associated with agricultural pursuits include:

persons on homesteads such as ‘hired men and their families’ employed on farms, ranches and other ventures, who were living at ‘squatter’ sites while employed but left when the work terminated. Squatters’ sites could also be those of speculators on homesteads as ways to acquire the lands and resources for immediate sales to others. A common western practice related to speculations was where



cowboys and others acquired homestead or preemption rights to lands with water and other values which they then sold to a ranch which was putting together an empire from a patchwork quilt of homesteads (Buckles 1993a:6-7).

Like scroungers, squatters are unlikely to be well documented in civil records, although they may appear in manuscript census records. Sometimes, however, they were seasonal laborers and occupied sites in a cyclical pattern. Archaeological manifestations include “corrals, aspen carvings, spring developments, etc., on sites on the public domain or on large ranches. Gypsies, our research has indicated, had cyclical routes year after year and camped in the same spots at camps of squatters” (Buckles 1993a:7). Like scrounger sites, line camps and like sites tend to lack outhouses and other signs of long-term occupation, such as fences and cairns for land boundary markers. They also tend to have less specialized dump areas than the sites of more settled occupants (Buckles 1981).

The final group in Buckles’s classification is “settlers,” who are the most committed to place. They are by far the best represented in the archival records, including land claims, census, tax records, deeds and titles, and sometimes newspaper accounts and personal memoirs. Archaeologically speaking, Buckles’s “settler” sites tend to have specialized trash disposal areas, specialized outbuildings, and more substantial domestic architecture than either scroungers or squatters. In general they display more signs of investment in housing and modification to the landscape than the other two groups.

Buckles characterizes the three groups – scroungers, settlers, and squatters – as points along a continuum from completely transient and undocumented, through perhaps seasonal and indirectly documented, to permanent and well-documented (Buckles 1981, 1993a). He felt that the degree of commitment and permanence of such settlement should be discernible through the material properties of the site, whereas the correct terminology for a farm or ranch may be derived through the documents.

Although Buckles’s typology is a useful starting point, work in Colorado and throughout the West suggests that, starting in the nineteenth century, legal status and investment in place are not necessarily linked (Jackson 1980). Several examples of short-term occupations that display inordinate investments in place are in the Colorado examples of surveys and excavated sites, later in this chapter. As one example, La Placita (5LA6104), a multihousehold site in the lower Purgatoire, was a small stock-raising operation (Clark 2003). This site meets the material criteria of a “settler” site – specialized trash disposal and a high level of investment in the built environment – but the builders never legally owned the land. In fact, Clark (2003) suggests that it is inappropriate to consider the Hispanic occupants of the site as squatters precisely because they had such a strong investment in place. Likewise, many parcels legally claimed under the Homestead Act were never intended to be permanent (Church 2002) because settlers there saw the land as a commodity not as home. Thus, investigators should be careful if they use the Buckles’s typology, being especially conscious that the potential for significant historical archaeological remains exists in areas where there were no legal claims to the land or where claims were never finalized through the patent process.

Furthermore, such a typology should not be used to determine site significance in any simplistic way. In his work in the Bureau of Land Management (BLM) Canyons of the Ancients in Colorado, Horn notes that “failed” homesteads settled for purposes of land acquisition on the part of larger neighboring ranches, but never patented, provide clarity of data in a discrete temporal component. A large population of such sites constitutes a chronologically sensitive baseline for functional, cultural, or chronological comparisons. For this reason, “failed” homesteads may actually be more significant in terms of potential for archaeological data than “successful” long-term occupations because a shorter chronology of occupation is not as often stratigraphically mixed and muddled (Horn 2004a:38).

Horn uses the word *failed* carefully in these cases. The goal of these homesteads was not to create a long-term family farm. The goal was to settle long enough to satisfy federal requirements, and then sell to the adjacent rancher. It is in the latter goal that the farmers Horn discusses “failed”. Too often historians and archaeologists talk about homesteaders failing because they did not stay and farm beyond acquiring legal title to their land, when in reality the goal of the settler was, from the start, not to farm but to raise capital for some

other purpose or add land to the ranch holdings of others. The descendants of homesteaders can be understandably touchy on this point. Paul D. Friedman described a particular homestead effort as a failure in his history of the Picketwire Valley (Friedman 1988). This settler's descendant objected that her ancestor intended all along to sell as soon as the land was patented and use the capital to start up a business in town. In this goal he was a success (Loretta Scott, personal communication 1995). This was certainly sometimes the case, as migrants to the West (and everywhere else in the country) were more drawn to urban than rural settings, a trend that only changes briefly during the Great Depression. However, it is also possible that descendants of homesteaders who did not make it in farming or ranching have revised family histories to put such episodes in a better light.

Fontana, Hardesty, and Buckles all emphasize classification systems and research agendas interpreting agricultural sites as economic units or indicative of adaptive strategies, and all discuss the potential for evolution of such strategies through time and across space in the West. Sometimes researchers frame this evolution within the context of a frontier model of some sort (Green and Perlman 1985; Limerick 1987; Turner 1993 [1893]), other times in a world system or global market dependency model (Wallerstein 1974). Either way, a look at features, buildings and landscape alterations beyond those found in the ranch or farm domestic nucleus is necessary. Hardesty classifies agriculturally-related features into types, including "management" (water, animal, or crop habitats), "manufacturing" (blacksmithing, kilns, other), "environmental impact" (erosion, salt deposits, disturbance vegetation, other), "domestic features" (houses and outbuildings, permanent and temporary), and "logistic features" (transportation routes, shipping and market nexus points, transportation route maintenance, other) (Hardesty 1982).

There are of course other nonmaterialist research agendas that archaeologists can address using farm and ranch site data. As Buckles himself noted, "Our material evidences can be viewed as symbolic systems for which we need to search for the meanings" (Buckles 1993a:8). A good example of a study that does just that, outside the state of Colorado, is Leslie Stewart Abernathy's work "Industrial Goods in the Service of Tradition: Consumption and Cognition on an Ozark Farmstead Before the Great War", published in *The Art and Mystery of Historical Archaeology: Essays in Honor of James Deetz*. As appropriate in a work dedicated to James Deetz, Stewart-Abernathy's approach goes beyond explanations grounded in a materialist concept of cultural adaptation to look at symbolism and meaning (Stewart-Abernathy 1992). All late nineteenth- and early twentieth-century sites, of all types, contain mass-produced items of the kind found in any Sears and Roebuck catalog, or what Steven Baker refers to as a "Victorian Horizon" (Baker 1978a, 1999a). However, whereas Baker sees this as a cultural horizon that dominates in an increasingly melting-pot manner, Stewart-Abernathy and those working on non-Anglo-American sites see active manipulation of Victorian period, mass-produced items, sometimes in markedly un-Victorian and locally unique ways (Carrillo 1993; R. F. Carrillo 1997; Carrillo 1999; Carrillo and Jepson 1995; Carrillo, Mehls et al. 1994; Carrillo et al. 2003; Church 2001, 2002; Clark 1996, 1997a). Stewart-Abernathy uses such ratios and spatial relationships to illustrate how rural farmers used mass-produced items according to local traditions that may have fit in with Victorian cultural values in this case but varied from what could be predicted using any purely economic or dependency model. Donald Hardesty and Barbara Little elaborate in their recent book:

The archaeological record of the recent past often contains commodities that have been globally distributed. Global distribution, however, does not necessarily take place without changing the meaning, function, or use of the commodity within local social and cultural systems. Clearly we need to construct good models of how global commodities are reinterpreted or transformed at specific localities (Hardesty and Little 2000:158-159).

It is for this reason that a "Victorian Horizon" of artifacts introduced to the western states is just that, a material horizon. Its status as a cultural horizon in any real sense is not a given but is a potential research hypothesis that may be tested on sites. To do so requires looking not just at the presence or absence of mass-produced Victorian-era items but at their patterns of distribution and use on a site. The horizon and its associated ideology, while influential, is always locally interpreted; to what degree the associated ideology is accepted at a given site can certainly be a productive research inquiry. As Steven Baker points out (personal communication 2005), the extent to which the Victorian Horizon enfolded some individuals and subcultures

during the Victorian Era differed. Baker sees and accepts this idea, but it does not negate the overall concept of the Victorian Horizon as an archaeological phenomenon.

Models such as Stewart-Abernathy's incorporate human agency, viewing patterning in the material data as the cumulative result of individual decisions and strategies changing through time and across space. Even when looking at economic functional questions, such as discerning ranching from other site functions, such an approach to the materials can be useful. As Fontana has pointed out for ranch artifacts, it is not necessarily in the style or the presence or absence of artifacts that discernible patterning lies but more often in the relative quantities of items and their spatial patterning (Fontana 1967). More and more researchers are using this kind of patterning as an alternative to the unsatisfactory "trait list" approach to address intangibles such as ethnicity, class, or gender on sites (Carrillo 1993; R. F. Carrillo 1997; Carrillo 1999; Carrillo and Jepson 1995; Carrillo, Mehls et al. 1994; Carrillo et al. 2003; Church 2001, 2002; Clark 1996, 1997a; Ferguson 1992; K. G. Lightfoot et al. 1998; Pyszczyk 1989) (cf. Buckles and Buckles 1984; Cordell 1991; McGuire 1983).

Such an approach can and often does challenge widely held American myths. In her work at Shenandoah National Park in Virginia, Audrey J. Horning uses scattered farmsteads and the materials thereon to challenge notions held by most Americans, and codified by early twentieth century sociologists, about "backwards" Appalachian occupants. She finds that investment in property and landscape among people in various hollows tells us not only about commercial and subsistence goals that vary within the region in the eighteenth through the early twentieth century but also how integrally tied to global networks of production, markets, and tourism such people were. So the material remains, from both survey and excavation, illustrate the economic and social realities of the past in this area, but Horning did not stop with such interpretations. She also gathered documentary work by scholars on the region, tax and census and other such records, and oral narratives from the people who were forcibly relocated from the area by the U.S. government in order to create the park. She makes a very convincing argument about the complicated ways local people both profited from the myth of Appalachian "folkiness," for example, dressing up in their rattiest clothing and forgoing their automobile to show up at Skyline Resort with homemade "hooch" and baskets for sale, while simultaneously acting to resist such stereotypes (Horning 2000).

## **ARCHAEOLOGY OF RURAL AGRARIAN SITES IN COLORADO: MANIFESTATION IN THE ARCHAEOLOGICAL RECORD**

### **Settlement under Spain and Mexico**

The earliest ranches and farms in Colorado were the ranchos of the Mexican citizens in the southern third of the state. Virtually no archaeological work on the earliest phases of such farmsteads and ranches has been accomplished, although Paul Kutsche, Marianne Stoller, and John R. Van Ness have authored some relevant historical archaeology and anthropology studies from northern New Mexico (Kutsche and Ness 1981; Kutsche et al. 1976; Thomas et al. 1992; Van Ness 1979, 1980, 1991) (cf. Cordell 1991). Good historical background at the local level comes from studies by Richard Athearn, Sarah Deutsch, Janet LeCompte, Frances L. Quintana, and Marc Simmons (Deutsch 1987; LeCompte 1978; Quintana 1991 [1974]; Simmons 1969, 1991). As far as archaeological studies go, however, the earliest settlement of the large Mexican land grants in southern Colorado constitutes a research gap. Some reports on late nineteenth and early twentieth century Hispanic ranch and farmsteads exist (C. M. Carrillo 1997; Carrillo 1993, 1999; Church 2001, 2002; Clark 2003), but until there is more time depth in the archaeological observations, researchers cannot address adaptive, evolutionary, or symbolic questions of culture and behavior on a diachronic basis.

Early Hispanic settlements on land grants will look quite different from either later Hispanic settlements or those of non-Hispanic settlers. There was more than one legal way to settle under the land grant system (Table 19), and settlement occurred illegally as well, so settlement patterns can vary

accordingly. Marc Simmons, relying primarily on documentary sources, dates the settlement of grants from the first issuance of grant documents (Simmons 1969). Paul Kutsche and his colleagues, on the other hand, base their model of grant settlement on oral history and ethnographic observation as well as documents. They describe people from established villages heading north onto unclaimed lands on a seasonal basis for a few years. There they would graze cattle, sheep, or goats, build simple structures, place cairns, and build corrals before moving north on a permanent basis. Only after all that activity on the landscape did they apply to the governor for legal title to the land, either on an individual basis or, more often, as a corporate unit in the form of a communal land grant (Kutsche et al. 1976). This sequence of events is born out by narrative accounts recorded by workers during the Civil Works Administration interviews under the New Deal and also explains many undocumented early sites (cairns, walls, buildings) on the southern Colorado landscape (Church 2002).

**Table 19:** Chronology of Mexican public land legislation applying to roughly the southern one-third of Colorado (Briggs and Ness 1987).

1681	<i>Recopilación de las Leyes de los Reynos de las Indias</i> – This is the basis for community land grants and associated establishment and use of common lands
1700s	Mostly private grants occur during this period in New Mexico, not Colorado
1800s	Community grants became more common. These consisted of a house and irrigable plot for individual families. In addition, resources held in common included pasture, water access, woodland for hunting, gathering, fishing, and quarrying, etc. Grant documents did not distinguish between individual and communal grants; some individual grants, over time, became like communal grants.
1824	Colonization Law – Law 1) provided cheap land and four years of tax-exemption to encourage settlement.; 2) allowed foreigners to petition for grants.
1828	Further regulations: 1) with Colonization Law codified the customary process of application to the governor and local alcaldes for individual or community grants, including petition, alcalde’s report, governor’s grant, and act of possession. If application was acceptable, the claimant and neighbors walked the perimeter of the grant placing monuments, including cairns or crosses, on lines and corners. Legislation expedited documented ownership; the copy for grantee was called the <i>testimonio</i> . 2) allowed foreigners to petition for grants.
1840s	This decade was a period of huge grants to Hispanic/Anglo partnerships, granted by Governor Armijo. Several of these were in Colorado, including Beaubien-Miranda (Maxwell), Sangre de Cristo, Las Animas, etc. The huge grants had the weakest legal justification, but were the first confirmed by the U.S. after the Mexican-American War.
1848	The Treaty of Guadalupe Hidalgo ended the Mexican-American War.
1848	The Protocol of Querétaro was an agreement between U.S. and Mexico that provided that grant titles valid under Mexican law as of 13 May 1846 would be valid under U.S. law. Later, the U.S. State Department did not recognize this protocol as binding.
1853	This California law shifted burden of proof to Mexican grant owners; rather than requiring the U.S. government or citizens to prove Mexican claims invalid, Mexicans (who were now American citizens) had to prove claims valid.
1854	The office of Surveyor General was created for New Mexico Territory, which encompassed much of southern Colorado. Many of those who held office were land speculators.
1860s to 1885	This period was the heyday of the corrupt “Santa Fe Ring,” during which the biggest grants in Colorado were confirmed.
1876	The Partition Statute passed by New Mexico Territorial Legislature allowed lawyers to “request a division of the grant among its owners and to then force the sale if the property could not be physically divided without decreasing its value” (Ebright 1987:39). This statute was usually applied to common lands in community grants. By this time, southern Colorado was part of the new state of Colorado, and the Colorado grants were generally to individuals.
1889	Breakdown of surveyor general system.
1891	Court of Private Land Claims established.
1897	U.S. vs. Sandoval case set the precedent whereby all common lands associated with grants were rejected (but not retroactively).
1898	Hayes vs. United States case set the precedent of rejecting claims on technical grounds in cases where the Mexican governor had had a lesser official stand in for him in grant process.
1904	Conclusion of Court of Private Land Claims. (However, court actions continue to the present.)
2002	The Taylor vs. San Luis Land Rights Council case, re: the San Luis Valley, which went to court in 1981, was resolved in favor of the Sangre de Cristo land grant heirs, restoring them hunting, wood-gathering, grazing, recreation, and timbering rights they had been denied since 1964.

**Note:** The Colorado land grants actually stood up to Anglo challenges better than did most New Mexico grants, despite the fact that many of the Colorado grants exceeded the maximum size under Mexican law. The larger Colorado grants were made to cronies of Governor Armijo shortly before the Mexican-American War, and the grantees were in general better connected with Anglo commercial interests. Therefore, these grants have had more impact on who owns the land now.

Earlier Hispano sites, whether individual family farmsteads or communities, are usually completely self-contained plazas, defensively built with either few or no windows in anticipation of Native American aggression. Papers in the possession of Epifanio J. P. Valdez, grandson of Don Seladon Valdez, an original recipient of the Conejos Grant in Southern Colorado, indirectly indicate some of the characteristics that one might expect on such early sites in terms of both artifacts and architecture. On October 12, 1842, settlers agreed to the following conditions:

1. The site selected was never to be abandoned.
2. It was understood that the pasture lands were to be common to all the settlers.
3. The colonizers were to keep themselves well equipped with firearms or *arrows* [emphasis added], in view of the dangerous position; the weapons were to be presented on entry as well as whenever required by the 'jues' [sic] or Alcalde. Furthermore, two years after entry, all weapons were to be firearms, kept in condition at all times.
4. The Plaza's construction should be well walled and fortified, in the meantime the settlers must build 'jacales' to shelter their families (Gibson 1934a:104).

In another such account, "the old men" are cited as saying "in the early days the Indians were a source of continual trouble and there was much fighting. The adobe houses were built under difficulties and usually 'jacals' of logs set vertically, or 'fuerter,' in which the logs were laid horizontally, were built first" (Gibson 1934b: 104). Another good source describing such early settlements is the context document available online at the Colorado Office of Archaeology and Historic Preservation (OAHp), entitled *Culebra River Villages of Costilla County: Village Architecture and its Historical Context, 1851-1940* (Mondragon-Valdez 2000).

There were several attempts to settle some of the southern Colorado grants, which various Native groups thwarted. These should be visible and situated along permanent drainages in southern Colorado. Settlers on the outskirts of settled areas sometimes negotiated extralegally and independently with Native groups for protection (Gibson 1934b; Quintana 1991 [1974]). Some of these plazas were reoccupied seasonally, with occupants cropping during the summer months and returning with their harvest to their parent community in the winter. These plazas were only later fully occupied and legally codified (Gibson 1934a, b; Kutsche et al. 1976). Such settlements may have considerable archaeological potential to answer questions about ethnicity, adaptation and ecology, community evolution and agricultural strategies, emerging globalism, and changing national and local settlement strategies during the time that Colorado south of the Arkansas River was part of the Republic of Mexico (until 1848).

Ethnicity is complex in these settlements, including people of French, Irish, Spanish, African, and Native descent. A number of site occupants were *criados* or captured Indian children (often Navajo, Ute, or Plains groups) raised as servants. Technically freed after the Civil War, many of these individuals, who may or may not have known of their legal change in status, stayed on in the region. A clear separation between Hispanic and Native American material culture is usually not possible in these early settlements, as almost all aspects of life included practices and technologies originating with the various groups and shared by all, as a result of centuries of proximity, mutual captive-taking, and intermarriage (Brooks 2002; Carrillo 1993; R. F. Carrillo 1997; Carrillo 1999; Carrillo and Jepson 1995; Carrillo, Mehls et al. 1994; Carrillo et al. 2003; Church 2001, 2002). Such shared or blended artifacts include worked bottle glass and stone tools ranging from scrapers to metates (Cordell 1991). Many of these early settlements have no associated documents, including several cases where a squatter paid for land with sheep in an informal, but locally binding agreement. A useful map of early settlements in the San Luis Valley, including many long-abandoned, is in Virginia McConnell Simmons's book *The San Luis Valley: Land of the Six-Armed Cross*, 2nd Edition (Simmons 1999 [1979]:273-274). As the title suggests, however, it refers only to the San Luis Valley, whereas we know that early attempts were also made to settle both west and east of there in southern Colorado.

Although there are clearly more early settlements than are reflected in archival documents alone, most Hispanic settlement in Colorado occurred under U.S. land law, imposed south of the Arkansas River for the first time after the treaty of Guadalupe Hidalgo in 1848. Such settlements continue to be distinct from those of non-Hispanic settlers in various ways, ranging from artifact frequencies and architecture to the distribution of sites on the landscape (Carrillo 1993; R. F. Carrillo 1997; Carrillo 1999; Carrillo and Jepson 1995; Carrillo, Mehls et al. 1994; Carrillo et al. 2003; Church 2001, 2002). In fact, both Hispanic and non-Hispanic groups manipulated the system of homestead patents in various ways, sometimes to preserve comfortable and culturally conservative settlement styles and sometimes strategically to reap some wider economic advantage (Church 2002). Church proposes a pattern of Hispano settlement that is modified as little as possible by the requirements of the Homestead Act, based on post-1862 archaeological data and ethnographic and other documentation. This similarity or difference might be explored and tested archaeologically by looking at earlier settlements, but to date there has not been any extensive excavation or site recording of such sites predating 1862.

For many settlers under the Homestead Act, occupational activities included using resources well beyond the bounds of land to which they held formal title. For a time period stretching well into the twentieth century, Spanish-speaking settlers from New and Old Mexico were the majority populations in several southern Colorado counties. A diachronic look at changing ethnic relations, settlement patterns, and agricultural strategies are all questions that archaeologists studying sites in these areas might address. Such settlements might contrast in important ways archaeologically with other ethnic or religious enclaves where the group in question, for example Germans or Mormons, was not the demographic majority. Historians and anthropologists have long since rejected the melting pot as a legitimate model of interaction, and the more complex behaviors associated with Native American, Hispanic, African, Asian, and Euroamerican interactions can be addressed in part through archaeology at such sites.

## **Settlement under U.S. Law**

Early settlers in Colorado, notably Hispanic settlers, engaged in mixed agriculture, growing both crops (intensive agriculture) and livestock (pastoralism) for both domestic use and for market sale. In 1848, U.S. land legislation replaced that of Mexico (Table 20). Table 20 outlines federal law relating to land use. Colorado law related to ranching, in particular, is outlined in a 1937 book by Ora Brooks Peake entitled *The Colorado Range Cattle Industry* (1937). This book suggests that the separation often made between rural agricultural and urban settings in the late nineteenth century might not have existed. Peake notes that “cattlemen were such important citizens in early Colorado cities that it was difficult to secure ordinances to keep bovines off the streets” (Peake 1937:171), a problem which led to headlines such as “Denver – A Municipal Cow Pasture” (*Denver Mirror*, April 26, 1874) and “A Bovine Outrage – Cow in Denver Destroys General Lessig’s Place” (*Denver Mirror*, October 13, 1877, both cited in Peake 1937).

By about 1880, farming and ranching were becoming distinct endeavors on all agrarian sites, and tensions arose between sheep and cattle ranchers, as well as between stockmen and farmers. A better understanding of the cultural, logistical, and strategic differences between these economic choices, as well as the role played by ethnicity and prejudice, might illuminate some of the reasons for recurring violence, including who participated and the forms that violence and resistance took (ranging from fence-cutting to property damage and occasionally bodily injury and death) (Carrillo et al. 2003; Loendorf and Clise 1997).

Agricultural features related specifically to farming as distinct from ranching might include Grange halls (1867 onwards), mills, water towers, check dams, ditches and other forms of water control, granaries, cribs, and equipment sheds. Ranching properties might have associated corrals, cairns, sheep or cow camps, silos, walls and fences, rock shelters, aspen art, rock art, sheep sorting or lambing pens, stables, tack rooms, stock yards, and feed stores. There are further differences between cattle and sheep ranches, or between, say, beet farms and those growing alfalfa. Agricultural features run the gamut of Buckles’s ephemeral and substantial sites (Buckles 1981, 1993a). Of course many features, such as windmills and stock tanks may be common to both ranches and farms, and some site occupants may have mixed these occupations. On such

sites, it is well to remember Fontana’s admonition to look at complete assemblages of tools for patterns characteristic of ranching and farming rather than looking for particular diagnostic items (Fontana 1967:61).

**Table 20.** Chronology of U.S. public land legislation.

1785	The Land Ordinance of 1785 established the township and range survey system.
1841	Pre-emption Act (repealed 1891) allowed settlers to stake a claim to 160 acres of public land, establish residency, and pay cash for it before it was made available in public auction.
1862	Homestead Act made surveyed land available in 160-acre parcels, either after five years residence and nominal payment, or after a six-month period and cash payment of \$1.25 per acre.
1862	The Pacific Railroad Act provided lands as a subsidy for Transcontinental Railroad and telegraph lines between Missouri and California. The railroad got alternating sections for 10 miles on either side of the track.
1862	The Morrill Act provided land grants by federal to state governments (excepting Confederate states), which states could sell to fund higher education in engineering, agriculture, and military science. This act was the basis for the state school section withdrawals from the public domain, and State Trust lands.
1864	Pacific Railroad Act modified to reduce the alternating sections provided the railroads from 10 to five miles on either side of the track.
1873	The Timber Culture Act (repealed 1891) provided 160 acres provided the settler would plant a quarter of the land in trees.
1877	The Desert Land Act provided 640 acres for \$1.25 per acre, with \$0.25 down, if the settler irrigated it within three years.
1878	The Timber and Stone Act allowed people to buy 160 acres of nonagricultural land for \$2.50 per acre.
1878	Timber Culture Act modified to require 10 acres planted with trees.
1878	John Wesley Powell’s <i>A Report on the Arid Regions of the United States</i> explained why land legislation as it stood would not work in the arid West and suggested alternatives. It was politically unpopular and widely ignored, and as a result Powell moved into the position of head of the newly created federal Bureau of Ethnography.
1880	The Homestead Act was extended to unsurveyed lands.
1880s	The government moved against large ranchers who were illegally fencing public lands.
1887	The Dawes Severalty Act, which was intended to end the reservation system through allotting land to individual tribal members.
1891	The Pre-emption Act and Timber Culture Act are both repealed.
1895	The Hunter Act was a follow-up to the Dawes Act, and gave Southern Utes the rights to land allotments anywhere on the reservation. It was again intended, once all had taken up such allotments, to end the “special status” of the reservation and open remaining land for homesteading. The act was opposed by the Weeminuche Band and resulted in separation of Ute Mountain and Southern Ute Reservation.
1902	The Newlands Act provided government help for irrigation of land. The federal government would plan, construct, and manage irrigation projects for the purpose of reclaiming marginal lands. Money for these projects would be generated by the sale of public lands. The lands to be sold were identified as being irrigable by the reclamation project, so were withdrawn and then earmarked for entry specifically keyed to the project. The ongoing expenses of the projects would be supported by fees paid by farmers and ranchers using the water.
1902	The Reclamation Act set aside federal money to irrigate lands in the West.
1909	The Enlarged Homestead Act doubled the available land for homesteads to 320 acres.
1912	The Borah Act reduced the residency requirement from five years to three, and to seven months of each year. It facilitated homesteading of upland and forested areas so was clearly important to expanding Colorado settlement.
1916	The Stock-Raising Homestead Act increased the grants to 640 acres, without the cropping and residency requirements of the original Homestead Act.
1934	The Taylor Grazing Act established grazing allotments, permitting and fee system to regulate and manage grazing on public lands.
1935	The Depression-era Resettlement Administration, later known as the Farm Security Administration, resettled displaced farmers and ranchers from the areas hit hard by the Dust Bowl onto productive lands elsewhere. Some were resettled in western Colorado.
1937	The Bankhead-Jones Land Utilization Act was a government buy-back of marginal farmland (established the Comanche and Cimarron, and Pawnee National Grasslands in Colorado). This act took lands most adversely affected by the Dust Bowl out of production.

The picture for farmsteads and ranches in Colorado as a whole from the mid-nineteenth century onwards is ethnically very complex. People came from virtually every state, Canada, Mexico, and many European countries to farm or ranch in the state, either at the scale of family farm or on a larger commercial basis. There is also variation between regions based on soils, topography, and altitude. Homesteading in the mountains or intermountain valleys was a much different proposition than doing so either in the desert Southwest, the Uncompahgre Plateau, Southern Plains, or northeastern Plains. Ranching cattle was a different undertaking than ranching sheep. The archaeological footprints of agriculturalists who settled irrigated valleys will differ from those who were on dryland farms. Some contexts available online from the state OAHF are: *Weld County, Colorado, Historic Agriculture Context* (Mehls and Mehls 1988); *Historic Farms and Ranches of Weld County* (Whitacre and Simmons 1990); and *Ranching Resources of South Park, Colorado, 1859-1949* (Simmons and Simmons 1999).

For such sites in Nevada, Hardesty has suggested that we could develop predictive models based on geographical zones “that have distinctive archaeological expectations” and that an “inventory of sites within each zone” could be used to test such models (Hardesty 1982). Steven G. Baker has advocated a similar agenda for Colorado homesteads (Baker and Horvath 1985) and began research like this for sheep ranching and associated ephemeral campsites on the Western Slope, dividing shepherds’ camps (the scrungers of Buckles’s typology) into further types based on spatial location, features, and artifacts (Baker 1991a). However, the opportunity to amass the kind of data necessary to look at this kind of patterning has been spotty, at best, and such models are only a first step. The next research steps would be determining what such patterns tell us about the past cultures and culture change. Cycles of dry and wet years, climate, and physiographic zone, as well as infrastructure, technological developments, nationality, ethnicity, gender, and class, all affected settlement decisions, migration patterns, and consumer choice in various areas from the nineteenth century into and beyond the Dust Bowl years of the 1930s.

It is also important to remember that all structures related to dispersed agricultural communities in rural areas do not necessarily relate directly to domesticity, crops, or livestock. In his report on work in Gunnison, Steven Horvath takes account of an important rural site type, only indirectly associated with ranching and farming. Rural schools were an important part of early settlement, because parents were very interested in seeing their children receive at least an elementary education. A historical context document available online at the state OAHF is entitled Rural School Buildings in Colorado (Doggett and Wilson 1999).

Most of these kinds of schools were one-room schoolhouses, and they played important roles considerably beyond education in dispersed rural communities. Horvath notes:

Schools became a focus for local feeling and the district boundaries came to represent the boundaries of neighborhoods... The school district became one of the most important spheres of social interaction for adults in the district as well as for children (Horvath 1981:79).

Thus schoolhouses, in addition to bearing artifacts and features indicative of the changing nature of nineteenth and early twentieth century educational practices in rural settings, may also retain artifacts reflecting use as community meeting places. Horn notes this for southwestern Colorado, near Canyons of the Ancients, indicating that, between the 1910s and the 1940s, dances attended by entire families were often held in rural school buildings. School house dances provided

probably the most important social venues for young adults and resulted in introductions and courting of couples that frequently lead to marriages. Dances also had a darker side that included arguments and fights, and opportunities for drinking during Prohibition (Horn 2004a:18).

Oral narratives emphasizing the importance of such dances in the lives of early twentieth-century inhabitants of what is now the Piñon Canyon Maneuver site occur in the works of Lawrence Loendorf and Dianna Clise, and Hadley Harper (Harper 1996; Loendorf and Clise 1997).

Advocates of school consolidation tend to downplay the quality of rural education, but the descendant community of rural school alumni is proud of and will defend the education received (Horvath 1981). Such sites are characterized not only by the school itself but often by associated horse sheds and privies. Teachers often boarded with local families, who were also often the ones to donate land and money to build schools. Sometimes schools were held in private homes until a schoolhouse could be built. This was the case at the rancho of Domacio Lopez in the Purgatoire River Valley on the Comanche National Grassland of southeastern Colorado (Church and Clark 2008; Reed and Horn 1995b), and it is notable that in donating money and land to build a school, he provided a secular education for his children very different than the parochial education he in all likelihood received earlier in nineteenth century New Mexico. He also sent his daughters to school alongside his sons, a privilege his wife, Loretta, never had. He further built a small Catholic church on the property. Other religious structures associated with rural farming and ranching communities in southern Colorado are *moradas*, which are the meeting places of the religious brotherhood



Pious Confraternity of Our Lord Jesus Nazarene, or *Hermanos Penitentes*, a religious and mutual aid society among southern Colorado Hispanos.

Finally, a historic period site type associated with ranching and farming that is often maligned as graffiti is the rock carvings of individuals who became intimate with the landscape in the course of farming or ranching it. Often these carvings include proper names and dates, and such people can (and should) be traced in census or other civil documents.

## **Examples of Regional Settlement Studies in Colorado**

Much of what we know about rural agriculture sites in Colorado comes from large-scale CRM survey projects. In many cases these sites are not excavated and often not even tested. Yet even from surface data, especially with a large population on which to base conclusions, such projects can contribute to what we know about the historical archaeology of the state. The surveys and sites described in this section and the next do not constitute a complete list of sites recorded and excavated in Colorado. These are only the sites from reports provided by co-authors or from reports the co-authors thought to ask for from others. Our sample is unsystematic, to say the least, but may at least serve to provide an idea of the diversity and number of research questions asked regarding the post-contact sites and landscapes in the state, and therefore their preservation value.

### **HIGH ALTITUDE**

#### **Upper Gunnison Basin: Comparative Settlement Strategies**

Steven Baker and Steven Horvath did a study that serves as a good example of how one might address research questions about settlement strategies diachronically at high altitude sites in the Upper Gunnison Basin, focusing on environmental zones, site chronology, and economic goals. Their data include a random sample of sites (stratified by township and range, but they could also have been usefully stratified by environmental zones or soil conservation districts) and illustrate how settlers manipulated federal land laws to achieve economic ends outside the intent of those laws. Such manipulation was driven by both environmental and historical factors. Because Baker had some data for the Dolores Reservoir area, they were able, to an extent, to compare settlement in these two areas and other areas that vary environmentally (Baker 1978b; Baker and Horvath 1985; Dishman 1981); see also Horvath (1981).

#### **White River, Western Slope: Sheep Ranching, Ephemeral Sites, and Historic Period Rock Art**

Baker took a landscape approach to sheep camps on BLM land managed by the White River Field Office on the Western Slope (Baker 1991a). He found that there had been a 1986 programmatic agreement between the SHPO and the BLM setting the policy that ephemeral campsites were not individually eligible to the NRHP (Baker 1991a:32). (If such an agreement is still in effect, it may well need to be revisited in light of more current research agendas and potentials.) Despite this agreement, Baker recognized the importance of such sites for looking at land use and pastoralism. The occupations were short term, giving them considerable “clarity” in terms of discrete occupations, and there were not a lot of ephemeral camps with alternate functions, such as hunting, to muddy the picture. Given that there would be no excavation at such sites, he proposed a “project-specific standard of inventory,” which would allow for “inventory level research” (Baker 1991a:32). This he could combine with oral narratives and documentary data to address particular research questions about the “nature, range and character of shepherding activities” (Baker 1991a:52). In the process, he came up with a typology for the sheep camps: Type 1, very small camps at some distance from lines of transportation, usually located at high points with good views of surrounding pasture areas and limited, ephemeral architectural features and Type 2, larger camps nearer to transportation routes, mostly post-WWII (Baker 1991a:33-34). In addition to the campsites themselves, Baker also considered “sheep sorting and lambing pens, stock dams and ponds, bedding grounds, stockroads, and extensive and often elaborate rock art sites attributable to shepherds” (Baker 1991a:31).

Of particular note is his individual recognition of the contribution to the local rock and aspen tree art tradition of Pacomio Chacon, on whom Baker is completing a case study. Baker spoke about Pacomio at the annual meeting of the Colorado Council of Professional Archaeologists in Durango in 2003 in a paper entitled "Pacomio Chacon, Colorado's Master Shepherd Artist" (Baker 2003d).

### **Rocky Mountain National Park: Inventory and Assessment, With and Without Architecture**

At Rocky Mountain National Park, William Butler is currently wrapping up a project to inventory and discuss the archaeological potential of all the historic sites in the park. Unfortunately, park policy in the 1930s resulted in the loss of much of the material record and its context. Such operations "included moving a structure, if possible, or tearing down the building by removing roofs, logs, wall boards, etc., bulldozing and burying, or burning the structure in place" (Butler 2005:9-240) and the ground surfaces were almost always recontoured and revegetated" (Butler 2005:9-240). Clearly bulldozing, burying, and recontouring would have an adverse effect on archaeological integrity, but moving the architecture or burning it in place might not have, since subsurface deposits might remain intact. He finds there are some sites that do have potential, and divides them into site types separating out, for example, ranches that functioned as dude ranches from those that were homesteads.

Butler does an admirable job of citing the relevant historical work by others, and clearly explains the archival work that was necessary even where sites were no longer extant. There would be no way to address landscape scale questions in the future had he only talked about sites where there were intact surface remains. He includes ranches and homesteads dating from the 1870s through the early twentieth century, including some areas that were homesteaded but not "proved up," so that these are represented only by scanty material remains or brief mention in the documentary record. He includes a handy table that has site names, site numbers of those sites that have been recorded with the OAHp (those that still exist, archaeologically speaking), pertinent references, and a brief description of material remains, if any (Butler 2005:9-244). Some of these ranches have several site numbers, indicating ranching features recorded as individual sites rather than as features contributing to the site of a single ranch operation. This pattern of recording, say, a corral, fence line, or irrigation ditch distant from the home ranch as a separate site from that ranch is very common and sometimes necessary and unavoidable. So such a table linking related site numbers together is very useful if one wants to look at ranch operations from a holistic perspective, using a landscape scale beyond the home ranch buildings.

In his "Summary and Recommendations" section Butler acknowledges the fact that the 1930s removal of buildings and disturbance of deposits makes many of his initial research questions impossible to address. However, whereas before his work only 19 historic sites and 1 isolated find were recorded, there are now 542 sites and 149 isolated finds (which include mining and nonagricultural sites as well). And he has presented archival information and references on several more. He refers to a recently developed "removed structure" Geographic Information System (GIS) database that can guide further field efforts. Butler concludes that many questions based on ranching may not be answerable because of their removal, but information about "site layout, feature identification, feature functions, and structure" may be available through use of remote sensing techniques (2005:12-383). In conclusion, he notes the sites with the most archaeological potential: the Sam Stone Cabin and Barn, where buildings remain extant, and the foundation for the Hondius Ranch and area of the Hupp Homestead, where the buildings are gone, but there may be intact deposits remaining (2005:12-385).

## **SOUTHERN COLORADO PLAINS**

### **Lower Purgatoire River: Ethnicity, Economic Strategies, Dispersed Rural Communities**

Another good study of homesteading on a regional scale in Colorado is that by Alpine Archaeological Consultants, Inc., in the Comanche National Grassland, along the lower Purgatoire River (Reed and Horn 1995b). Their study, in many ways, builds on the work of Richard F. Carrillo on the U.S. Army's Pinon Canyon Maneuver site, adjacent to the grassland (Andrefsky 1990a, b, c). In this earlier work, Carrillo laid

out hypotheses related in large part to determining ethnic composition of households from the archaeological materials on sites in this area. In the course of formulating those hypotheses, Carrillo amassed an impressive quantity of ethnographic and archaeological data from nineteenth century documents written by Hispanic and non-Hispanic observers who described not only the artifacts that settlers used in New Mexico and Colorado, but also their patterns of acquisition and use. Of special note are observations and accounts of Hispanic villagers and settlers making and using stone tools, including arrowheads (of metal and stone), and grinding stones, as well as chipped glass tools. This work also provided the basis for Minette C. Church's dissertation and Bonnie Clark's dissertation work on the Maneuver site, discussed further on in this chapter (Church 2001; Clark 2003).

Of particular interest in Reed and Horn's study in the adjacent national grassland is the transition from smaller and more ethnically Hispanic ranching to larger scale ranching around 1880, the processes by which this occurred, and its archaeological signature. In this work Reed and Horn submit that on historical sites in the arid and semiarid West, archaeologists can use Energy Theory as advocated by Stanley South (South 1988) to look at how humans map onto energy and other resources on the landscape. They note that "the more uneven the distribution of resources, the more constraints are placed upon time and energy and the greater the importance for efficient use of limited resources" (Reed and Horn 1995b:41). They also include a caveat acknowledging that people "must balance a number of competing goals, so maximum efficiency in use of energy may be seldom actualized, but support the model in general" (Reed and Horn 1995b:41).

They use this model to account for settlement patterns in the valley whereby more and more land is aggregated in the hands of fewer and fewer individuals. They feel that this process is structured not only by resources on the landscape, but by "world system" processes. However, to look at such processes, it is necessary to create the baseline groundwork, that is, to create "historical ethnographies" (Schuyler 1988) at the local site and community level. They argue that, contrary to some perception within the field, this does not constitute undue "historical particularism" in that the baseline data on local systems is necessary to see how such processes are nested within regional, national, and global systems (Reed and Horn 1995b; Schuyler 1988); see also Church (2001). (It has of course also been argued that historical particularism is not in itself a bad research agenda, and a historical ethnography is a perfectly acceptable research goal.) Notably, they do not use Immanuel Wallerstein's formulation of World Systems, with its emphasis on the formation of cores and peripheries in post-colonial settings, although this formulation of the model might well apply to this area after the Mexican-American War.

Importantly, Reed and Horn recognize that in many cases scattered rural farm and ranch sites can be seen as components of dispersed rural communities. They lay out hypotheses that build on Carrillo's work on ethnic attribution of sites. In addition, they also look at site and regional responses to catastrophic flooding (in 1904), differences in community-building by Hispanic and non-Hispanic residents, Anglo acculturation and adoption of Hispanic artifacts and building styles, and chronological changes in assemblages on Hispanic and non-Hispanic sites related to economic roles and relative poverty. Although their work relied primarily on sites they could identify both on the ground and through documents, they acknowledged Carrillo's point that there may well have been undocumented Hispanic occupation pre-1860 (Andrefsky 1990a, b, c; Carrillo et al. 2003; Church 2001, 2002). Bonnie J. Clark, in her dissertation, confronts the issue of undocumented Hispanic sites occurring later, in the 1880s and 1890s (Clark 2003).

Reed and Horn's assessment of the Picketwire sites took into account not only research potential but also potential for public interpretation. As researchers increasingly have to justify their work to the taxpayer, such values are becoming more important, especially on public land. As Reed and Horn note, such interpretation, historical ethnographies nested within World Systems approaches, has the potential for generating "constructive social commentary and deeper cultural awareness by individuals and the public at large, which it is hoped will result in a more responsible and far-seeing society" (Reed and Horn 1995b:49). Lamentable gaps exist in popular knowledge of, in particular, the Hispanic history of the Colorado Plains, as is attested to in local historical works such as *Bent County, Colorado History* (Bent County History Book Committee Members 1993; Church 2001).

## **Upper Purgatoire River: Ethnicity, Multidisciplinary Approaches, Frontier Human Ecology**

The upper Purgatoire River, above Trinidad, is well represented in the recent work by Richard F. Carrillo and his colleagues (Carrillo et al. 2003). In this work, a team including archaeologists, a historian, an architectural historian, an oral historian, and local historians, all compiled a remarkably complete report of sites in this “Hispanic Cultural Landscape,” with a focus on ethnicity and diachronic change. In his section particularly dedicated to archaeology, Carrillo uses a “frontier system” model based on work by Don Hardesty and Kenneth Lewis (Hardesty 1981; Lewis 1985), particularly Hardesty’s approach using individual households as units of adaptation in an ecological framework. Problem domains are threefold: investment in facilities; subsistence and economy; and settlement patterns. To look at these, the authors formulate two main hypotheses, one of which continues the focus of his earlier work, and that of others, on differentiating ethnic households based on “contrasting economic orientations.” The other hypothesis proposes a diachronic shift from subsistence to market, wage-labor economy on the part of Hispanic residents.

In this work, Carrillo and his colleagues incorporate important and, in part, unpublished work (field notes) by Herbert W. Dick on the Trinidad Reservoir Project (Dick 1957, 1963, 1968), and work by Michael Nowak and his Colorado College students (Kingsbury and Nowak 1980; Nowak and Jones 1984, 1985). Dick, as well as others, attempted to impose the Midwest Taxonomic System on the historic sites of the region, defining a “Baca Phase” of a “Ranchero Complex” (Hand et al. 1977; Wood and Bair 1980). Because the Midwest Taxonomic System was originally designed in part as an organizational tool for pre-contact sites in the days before the advent of refined dating techniques, its application to well-dated and culturally distinct historic sites seems unwieldy. Although they reference it (Carrillo et al. 2003), the authors do not continue the nomenclature in their report.

Of the many sites identified on survey, the authors chose to describe 12 in detail, ranging from individual farmsteads to plazas. One of these is Bonnie J. Clark’s dissertation site, which saw some excavation and is described in more detail further along in this chapter (Clark 2003). Carrillo and his colleagues combine documents, oral narratives, and architectural and excavated evidence to accomplish the archaeological evaluation of these sites, thereby explicitly including architecture and the built environment in their discussion of the archaeological data. No excavation occurred. Local descendant communities involved themselves in the current dispositions of the sites, especially responding to the unfortunate vandalism of a local *morada*. Here, and in Carrillo’s work elsewhere, the role of the *Fraternidad Piadoso de Nuestro Padre Jesus* (commonly known as *Penitentes*) is highlighted in Hispanic community structure (Carrillo 1999; Carrillo et al. 2003; Clark et al. 2002), and such *moradas* were, and in some cases still are, central to such places.

As the authors point out in their summary of the historical archaeology, this is one of the most comprehensive attempts to look at a large body of data by harnessing the expertise of historians, architectural historians, ethnographers, and historical archaeologists. When combined with the data amassed for the lower Purgatoire River, a baseline of good data exists for this entire river basin in southeastern Colorado, with particular attention to chronology, economy, land use, gender, and ethnicity.

## **CENTRAL COLORADO PLAINS**

### **Rocky Mountain Arsenal: Ethnicity, Gender, Twentieth-Century Rural/Suburban Transitions**

A good look at the chronology and relationship between rural agricultural sites and emerging urban and suburban development around World War II is in the report by Clark and her colleagues documenting 70 historic farm sites in the area of the Rocky Mountain Arsenal (Clark et al. 1997). This is a great example of the importance of twentieth century sites to historical archaeology in Colorado. Work at the arsenal highlights several issues important to understanding the archaeology of rural agriculture on the Central Plains. First, detailed archival history performed in conjunction with the project points to the complex nature of settlement on the Plains. Although the Plains are often considered a stronghold of unhyphenated Americans, in fact ethnicity is as much a research concern here as in urban settings. Many of the farmers living in what

would become the arsenal were immigrants from throughout Northern and Central Europe. Second, the remains at the arsenal speak to the important contributions of women to the survival of family farms. Around half of sites investigated at the arsenal contained definitive evidence of home canning in the form of canning jar lid and liner fragments, and many of the other sites contain jar fragments that likely were from canning jars (Clark et al. 1997). This activity, almost always associated with women's labor, was a critical contribution to subsistence at these sites, particularly during the Depression. Third, the arsenal points to the important contributions historical archaeology can make to the study of cultural landscapes. As part of its takeover of the land, the army removed most of the standing structures on the parcel. Yet what the army left behind – remnant landscaping, roadways, irrigation features, and archaeological features – was visible to archaeologists, trained to overlook the absence of buildings. Even without aboveground architecture, the arsenal provides for us a fossil landscape of 5-10-acre truck farms on the edge of an urban zone. This is a once-common landscape that is disappearing in the face of suburbanization.

A wide-ranging approach to agricultural landscapes is also potentially available for Weld County, regionally distinct in terms of crops (e.g., beets), ethnicity (German-Russians, Japanese-Americans, and Mexicans) and other factors. Carol and Steven Mehls have laid a good historical and architectural history groundwork to which archaeological work could and should contribute (Mehls and Mehls 1988).

## **SOUTHWEST**

### **Ute Reservation: Ethnicity, Gender, Contradictory Documentary and Archaeological Data**

SWCA surveyed 6,020 acres in La Plata County in southwestern Colorado and outlined a number of patterns of settlement. The land surveyed had once been part of the Southern Ute reservation until the implementation of the allotment acts of the 1880s and 1890s, when some Indian lands were opened up to general homesteading. Bonnie Clark and her colleagues used patterning of the built environment as well as in surface artifacts to talk about Ute versus non-Ute settlement, single men versus single women versus couples or family homesteads, changes in homesteading patterns through time, and site functional differences (Mabry et al. 2002). The authors use General Land Office (GLO) records, legislative history, and census data to talk about the chronology and nature of settlement (gradual, rather than a land rush), and address seeming contradictions between those records and the material data. This work includes an excellent example of why the archival research must occur with the archaeological research. For example, the authors explain the inordinate amount of investment in property at a site that was occupied for only two years according to the records. This example runs counter to Buckles's scale of investment (settler versus squatter) and is also counterintuitive; one expects the most remains and landscape alteration at a site that has been occupied for some time. In this case the authors suggest that it was the very behavior of rapid overinvestment in nonessentials, and the concomitant failure of the family to adapt to the exigencies of the environment, that account for the short stay documented and the abundance of material remains and landscaping. In this interesting case, the length of occupation does not explain the amount of material culture and landscaping. Rather, the material record may explain the length of occupation (Mabry et al. 2002).

### **Canyons of the Ancients: Irrigated-to-Dry-Farming Transition, Human Ecology, Diversified Subsistence Strategies**

Jonathon C. Horn has compiled a comprehensive "landscape-level history" of the Canyons of the Ancients National Monument for the BLM (Horn 2004a). Of note in this work is his exploration of the movement toward dry farming versus irrigated farming that affected this area starting around 1910, the conflicts between these farmers and cattlemen, and the activities engaged in by farmers to supplement income and diet.

The latter activities highlight the fact that even though they are not strictly agricultural (e.g., schoolhouses) other functional sites can be aligned with the general theme of rural agriculture. Such sites found in Horn's project included illegal stills used for supplemental income and consumption) during Prohibition; hunting camps, often from poachers (farmers supplementing their diet by hunting deer); and

trapping locations and related debris on farmsteads (farmers supplementing income by selling furs) (Horn 2004a). Such activities also occurred in southeastern Colorado on the ranch that served as the Bent Canyon Stage Station, where Erica Hill analyzed faunal remains from a well that was filled with late or postoccupation mammals from fur-trapping (Church and Cowen 2005).

Horn describes the different footprints ranches can have on the landscape depending on the period of occupation and whether cattlemen had legal access to open range or not. He then correlated these periods in part to different iterations of land legislation such as the Taylor Grazing Act. This approach also holds to a degree for dryland farms and irrigated ones, and the Desert Land Act. However, overall, Horn argues that “no real pattern can be seen to this agricultural settlement, only that it was extensive” (Horn 2004a:36).

## **Examples of Excavated Rural Agricultural Sites in Colorado**

It is worth noting that many of the studies mentioned above (though not the Mehls') addressed evolutionary, chronological, ecological, ethnic, and gender research questions using survey data only. This data is a good beginning for those questions that can be answered at the landscape settlement scale. Testing and excavation of individual sites within these samples could test models or address questions at a smaller scale of human activity complimentary to the regional survey. Some excavation work has occurred in the course of Centuries Research, Inc.,-sponsored work on the Uncompahgre Valley Historic Ute Project (Baker 1991c), including identification of historic Ute sites dating prior to their removal to reservations in 1881. Excavated sites include Chief Ouray's Ranch (5MN847, interestingly, built as a *placita*, or small, enclosed plaza site, and his home in Ouray (5OR965), which are of course interesting and informative, but not representative of the majority of Ute residential sites.

### **SOUTHERN COLORADO PLAINS**

#### **The Wilford Riley (5LA5310) and Roybal Family (5LA4388) Homesteads: Ethnicity, Landscape Approaches, Land-Use and Cultural Identity**

Excavations complementary to the Piñon Canyon Maneuver site and Comanche National Grassland surveys described above can be found as well (Charles et al. 1996; Church 2001; Clark 2003). Excavation in 1995 of the homestead of Wilford Riley and that of José Roybal's family at Fort Carson's Pinon Canyon Maneuver site (PCMS) illustrated the potential of even minimally documented sites to be informative about ethnic preferences in material culture and built environments of the High Plains in the Victorian period (Church 2001, 2002). Both homesteads were occupied in the late 1870s, both sets of occupants were of similar economic means, and the physiographic areas they chose to settle in were comparable. Located near the Mountain Branch of the Santa Fe Trail, their homesteads had access to a similar segment of the local and national markets. Yet the decisions they made about architectural spaces, consumer goods, and subsistence strategies were quite different in many of the ways that Richard Carrillo has suggested (Carrillo 1993; R. F. Carrillo 1997; Carrillo and Petersen 2002a; Carrillo et al. 1996; Church 2001, 2002). Patterns of land use and consumer choice were as much structured by cultural/ethnic perception of the potential resources and landscape as they were structured by the resources themselves.

The fact that Spanish-speaking New Mexicans by the 1870s had been living next to, trading with, and intermarrying with both Plains and Puebloan Native Americans for nigh on 300 years does not mean that ethnic identities were any less defined. However, they were fluid, and the porosity of ethnic boundaries showed in the material culture on the sites including tools, architecture, and landscape modifications. The fact that Riley was part of a less than nine percent minority along the Purgatoire Valley in the 1870s meant that he and the few other non-Hispanic Americans there adopted some cultural mores as well as material and architectural conventions more familiar in the Southwest than in the East, his place of origin.

Work in this area also clearly demonstrated the pitfalls of relying solely on documentary records for information on such sites. Paul Friedman did the documentary research and oversaw the collection of oral narratives for this some of this work. The work suffers from his insistence that only sites that are

accompanied by archival information are significant (Andrefsky 1990c; P. D. Friedman 1983; Friedman 1985, personal communication 1995). His historical research is also flawed. During his historical study of the PCMS he made a decision, perhaps due to time and financial constraints, to confine his search of county records to the tax records and not address the deeds (P. D. Friedman 1983; Friedman 1985, 1988). The result was that, of the three sites I checked into from his sample – Riley, Roybal, and Mosby Lee – Friedman records inaccurate dates of occupation for all three. Land was changing hands so fast in the area around 1880 that the tax assessor could not keep up with the transfers, and apparently in many cases assessed taxes against landowners who had sold their land up to three years before (although in the case of Mosby Lee, Friedman’s date is a year too early) (Church 2001). It is possible that given the pace and volume of land transfers at the time, deeds were not filed in a timely manner, and the county tax assessor may not have had accurate information with which to work. Friedman would have been well advised to check. Jon Horn points out that it would be interesting to compare the date of instrument to the date of filing in these instances (personal communication 2005). As a result of his methods, Friedman spells Lee’s first name as *Mosely*, as it is in the tax records, rather than *Mosby*, as it is in deeds. It seems more likely that the correct spelling of Lee’s name is in the legal documents of the land transaction and that the tax assessor spelled it incorrectly in the tax rolls. The failure to cross-check tax records completely with land transfers recorded in the deeds calls all of Friedman’s data into question. Furthermore, his data led directly to assessments of significance, which are likewise now called into question.

### **Mosby Lee Homestead (5LA5360) (testing): Assessment of Research Potential**

Mona Charles, Randy Nathan, and Phil Duke of Fort Lewis College have investigated the homestead of a neighbor and contemporary of Wilford Riley in the PCMS (Charles et al. 1996). Mosby Lee, a Civil War veteran, apparently patented his homestead in 1887 (Friedman 1985--but see caveat about this research in preceding discussion), several years later than Riley and the Roybals, and owned it until he and his ranching partners, J. M. Taylor and Thomas G. Stevenson, sold it to S. T. Brown of Brown’s Sheep Camp in 1891 (Church 2001). Like the Riley house, Lee’s also had a corner fireplace. Given that over 90 percent of their neighbors were Spanish-speaking people from New Mexico, any labor they got to help build these houses would probably have been people familiar with New Mexico building conventions, including corner as opposed to center-wall fireplaces. These neighbors also constituted much of the local expertise in stone masonry (Clark 2003; Corbett 2003).

Although this report deals with the site in the context of testing for significance recommendations and, therefore, is primarily descriptive, the recorders assessed the site as potentially eligible based on the research potential of both pre- and post-contact components. The historical archaeology portion of the assessment stemmed from the observation that there was “a well-defined historic occupation surface, discrete historic and prehistoric activity areas” and artifacts indicating a relatively narrow range of occupation from c. 1860 to 1890 (Charles et al. 1996:13-24). This is a good example of a site assessment that is not tied to any particular research agenda or sampling strategy but was instead considered on its own in terms, not in comparison to others, in light of its archaeological integrity and the amount of information potential in general.

### **Brown Sheep Camp (5LA5824) (geophysical testing and architectural recording): Archaeology to Answer a Particular Historical Question**

William J. Hunt and colleagues explored the vicinity of Brown Sheep Camp at the PCMS in an attempt to look for the Hogback Stage Station, which was purported to be either on the property or nearby. The attempt was not successful because the stage station in all probability (given the descriptions) is farther south in a break in the hogback formation. Other research goals seem to have been more in line with architectural recording and significance – archaeology in the service of historical architecture – rather than anthropological in nature. The report includes a substantial amount of information on architectural styles on the site (Hunt 1998). (Another source for architectural information on sites in the PCMS is Robin Haynes and Beverly Bastion’s work [1986]).

This work contains little contextual information on the historical background particular to the site; the pertinent section consists of three paragraphs. The buildings built during the tenure of S.T. Brown are quite distinct from those built during the tenure of Benjamin Gutierrez, whose father had been a foreman there, a character who is well documented in the archives (Church 2001). Such differences may relate to ethnicity, class, time period, or some combination of these. This report, however, does not give a complete chain of ownership information within which to situate the differences described.

Remote sensing and geophysical survey including aerial photographs, ground penetrating radar, magnetometry, resistivity, and conductivity were all employed on this project, and during ground-truthing the researchers found an adobe building that they would not otherwise have discovered. Work such as this by Steven DeVore, Larry Conyers, Mona Charles, and Donald Heimer has demonstrated the value of geophysical work on historic sites.

What little information we have from this work on the actual behaviors of the people who lived on the site (versus architectural information) is a result of ground-truthing geophysical anomalies, which led to the analysis of a single deposit of faunal remains. Apparently occupants were buying beef and pork, but, not surprisingly on a sheep ranch, were butchering their own sheep. The problem with this conclusion is that, because of the lack of documentary research and anthropological research questions at this stage of investigation, there is no way of knowing which owner's tenure is represented by this one feature – the only one that saw intensive analysis. (Since the 1998 report on this site, further field work at Brown's Sheep Camp has resulted in a more complete report including more a more thorough historical and cultural context [Bringelson 2005]) As an aside, an interview with a local informant revealed that the camp cook, known as "Uncle", who may have prepared this meat, turned out to be a woman who had disguised herself as a man for years (Friedman 1988).

#### **La Placita (5LA6104) (dissertation work): Ethnicity, Gender, Land-use and Cultural Identity**

Recent work at La Placita (5LA6104), a site in Las Animas County, highlights the archaeological potential of rural agricultural sites that lack archival documentation (Clark 2003). This multihousehold site centers on a series of standing native stone structures surrounding a small plaza. Bonnie Clark investigated this site for her dissertation (Clark 2003). The architectural elements and spatial patterning strongly suggests that the inhabitants of the site were Hispanic, and analysis of recovered artifacts revealed that the site was occupied for about a decade in the 1880s-1890s. In a pattern contrasting with that at the Brown Sheep Camp, residents at La Placita raised sheep and chickens, yet relied for their daily subsistence on wild foods, particularly cottontail rabbits. There is evidence for the occasional butchery of a lamb or older sheep, but on the whole the residents, who were trying to establish a stock-raising facility, did not eat the animals they raised. Several constructed garden terraces indicate another way the economic strategies of the site's inhabitants were diversified.

In this study Clark combined an analysis of the social, spatial and material relations within the site with that of a broader landscape and regional scale in order to examine gender, Hispanic patterns of subsistence, and creation of identity. The historical context we have for the last two decades of the nineteenth century was that Hispanic men and boys over the age of 10 often went to work for larger, often Anglo-owned cattle ranches, returning home intermittently to build up their own family-run livestock operations. In some instances, this was a successful strategy (Louden 1998). The quantity and wide range of purchased goods recovered, as well as the presence of cattle feet and vertebrae (but few other elements), suggest that someone connected to the site worked as a wage-laborer on one of the larger cattle ranches in the region.

Counter to Buckles's typology the attempt to settle at La Placita was aborted and no legal claim was ever made on the land. However, the intensive landscape modification, the construction of well-engineered houses, and external features such as a curbstone-lined walkway, speak to an investment in and hope for the future of this settlement. This example similarly runs counter to Friedman's contention that material and labor investment in place is positively correlated with seeking legal title to the land. Such a correlation probably does hold generally, but researchers on the ground should not assume as much in individual cases.



There are many reasons that people might not have made formal legal claim to lands, including fear of entanglements with government entities or actual disdain of federal authority. Similar extensive improvements on lands never officially acquired from the public domain are known in Brown's Park, where outlaws did not want to draw attention to themselves but also were outwardly defiant of any governmental authority (Jonathan Horn, personal communication 2005). The Hispanic settlers may have had similar fears or animosities, but perhaps growing out of ethnic or racial discrimination rather than personal lawlessness.

### **The Leplatt Homestead (5LA3421) (testing): Family Farm to Commercial Ranch Transition, Remote Sensing**

Fort Lewis College personnel directed by Mona Charles investigated yet another site on PCMS. It was a homestead patented by Harry Leplatt in 1921 (Charles et al. 2004). Given the later date of this homestead, his original claim was 320 acres and, in 1926, he was able to add another 320 acres under the Stock Raising Homestead Act of 1916, all adjacent to the equally large homestead of his brother, Amile Leplatt. In contrast to the smaller claims of earlier settlers, Leplatt's claim is representative of a qualitatively different kind of homesteading in terms of ethnicity, economy, and era.

Historical research on the Leplatt family indicates it was composed of several members, but is also complicated by the fact that these Frenchmen have their names recorded several different ways (LePlatte, Le Plat, Leplat, Liplat) (Charles et al. 2004:6-12). Given the diverse immigrant and Hispanic origins of many settlers in Colorado, it is necessary to keep in mind alternative spellings of names when researching context on historic sites in the archives. The Fort Lewis researchers were able to find current local residents with whom to conduct phone interviews, greatly enriching their knowledge of the family and its history at PCMS.

The Leplatt family (the spelling chosen by Charles et al. 2004) first homesteaded in the area in 1913, and their tenure in the area is represented by a period of expanding cattle ranching and consolidating land into the hands of fewer and fewer, primarily non-Hispanic ranchers (Charles et al. 2004; Church 2002; Reed and Horn 1995b). They seem to represent the transition to ranching because the Fort Lewis researchers note that only the post-1920 Leplatt settlers, Amile and Harry, set their minds to raising cattle. The others may have been trying to dry farm. Ultimately, even Harry and Amile sold their lands to move to Trinidad and California, respectively. Harry went on to work for the owner of one of the large cattle companies into whose hands all these early twentieth-century farmsteads were falling at the time. The chronology of Harry's work life is typical for the transitional period.

The value of remote sensing on sites such as this is increasingly demonstrated by the work of Mona Charles and her students at Fort Lewis College, as well as students of Lawrence Conyers at the University of Denver. A program of remote sensing, auger probes, and five one-by-one-meter test units on the Leplatt site provided information about the livestock activities at the site, though less evidence was recovered of the possible initial dry farming attempt. Judging from the faunal assemblage, sheep were a large part of both the subsistence and livestock-raising functions on the site (Charles et al. 2004:6-64). This activity is significant, given the general dearth of archaeological work on sheep ranching in Colorado to date. Functional differences between site features, notably the dugout and the domicile, also became clearer through the testing program. Dugout features seem to have served different purposes for different settlers, based on factors such as ethnicity and time period (Church 2001). In this case, refuse pertaining to livestock, such as barbed wire, seems to indicate its use as a tack room/storage area. In the case of the Roybal site, in contrast, what few artifacts recovered indicated some kind of larder or food storage function, in line with dugouts in northern New Mexican villages (Church 2001; Kutsche and Ness 1981). Hispanic dugouts tended to be exclusively larders. Dugouts on non-Hispanic sites were also often larders and, in some cases, temporary domestic spaces while the main house was under construction. On the Plains, such features sometimes served as combination storage facilities and tornado shelters. While these functions sometimes overlapped, it might be possible to tease them out through differences in artifact assemblages and patterning.

## WESTERN SLOPE

### **Four Homesteads along the TransColorado Pipeline (mitigation): Sampling Strategies, What Constitutes “Success” in Ranching/Farming**

Alpine Archaeological Consultants undertook mitigation of sites for a natural gas pipeline project spanning from the northwestern part of Colorado down into New Mexico. Faced with 120 sites recommended for mitigation, Alan Reed and colleagues had choices as to how to proceed. They considered sites along the main pipeline corridor and those along access roads and temporary use areas. Those sites in the latter situations could often be avoided. In the main corridor they conducted data recovery on all significant sites. Following an approach used initially in the Fruitland Coal Gas Development project in northwestern New Mexico, Alpine chose a sample of the significant sites along the corridor for extensive investigation, and such investigation was not confined to the limits of the right-of-way. “Sites not selected for extensive archaeological work but planned for disturbance are either uninvestigated or investigated to a limited extent” (Reed and Horn 2001:3-18). The main advantage of this approach is that it allows researchers to actually address research questions drawing data from all appropriate segments of the entire site, rather than from a limited right-of-way strip through it.

The downside is that not all eligible sites that will be impacted get investigated, but importantly, the “sampling approach does not assume that *less* archaeological work is conducted on a project; it simply distributes that work at fewer sites that can be researched more fruitfully and intensively (Reed and Horn 2001:3-18). In such cases, it is particularly important to explain and justify the selection criteria in the sampling strategy, as Horn and his colleagues do. Because this strategy involves excavation outside the right-of-way, private landowner permissions are a consideration. In this case six historic period sites were chosen for extensive excavation, four being homesteads. This report is a very good example of combining research questions addressed at individual sites with larger scale comparisons between sites. What follows are summaries of some of their work on these sites.

#### **The Barry/Stewart Place (5ME6642): Archaeological Versus Architectural Significance**

The Barry/Stewart Place was a farmstead claim filed by Harry Harrison in 1890. This property passed through several owners with occupations ranging from at least 1907 to the 1950s. This is a good example of lack of the kind of “clarity” William Lees talks about when determining site significance (Lees 1988). In fact, on an archaeological basis, it was clear to Reed and Horn at the outset that such a site would have stratigraphy too mixed by extensive and sequential occupations to yield good information, but because there was a standing structure, they were encouraged to excavate it anyway (Jonathan Horn, personal communication 2005). Indeed, the results confirmed that such long-term occupation by such a range of owners meant that none of the occupations were distinct, mixing was heavy, and therefore the research potential of the site was compromised. This is an excellent example of why archaeological investigation and significance should be determined independently of architectural integrity. Researchers deemed the site architecturally eligible but archaeological ineligible.

#### **The Orr Osborn Homestead (5ME6825): Depression Era Diversified Subsistence**

The Orr Osborn Homestead was another farmstead that saw several owners come and go. William Ray Ball was the first, in 1907, and he filed a desert land claim in 1913, which he relinquished just two years later. In 1915, Orr F. Osborn planted 18 acres in hay, corn, potatoes, beans, watermelons, and a vegetable garden. His brother homesteaded 120 acres adjacent to his land; adjoining claims by siblings and in-laws is a common pattern in this period, seen also in the Leplatte case from southeastern Colorado, discussed previously (Charles et al. 2004). Osborn made water supply improvements in line with the requirements of the Desert Land Act and grew strawberries, dewberries, and raspberries. This diversity of production, in contrast to later, larger monocropping farms, is also not uncommon in this period. He diversified further by establishing a Stock Raising homestead in 1939, exemplifying the Depression era transition from farming to livestock rearing that was taking place across large portions of the arid West. He sold the place in 1940.

This site is a good example of a relatively self-sufficient and successful truck farm during the Depression. The Depression, according to historian Richard White, was the only time in American history when migration from urban to rural outstripped the rate of migration from rural to urban areas (White 1991). This site also had good data resolution with a single owner/occupant.

### **The Stitz Place (5ME6826): Turn-of-the-Twentieth-Century Diversified Farming, Gender, Ethnicity, Class**

The Stitz Place was a 160-acre homestead claim by Isaac Harvey dating to 1896, but almost all artifacts and architecture on the site are associated with the occupation of Karl E. and Anna E. Stitz. Furthermore, Karl is listed in the census as an engineer who worked away from home. Anna is listed as “farmer,” and the farming activities on this site are all attributable to Anna, making this an interesting site at which to address questions about gender.

As at the Orr place, there were irrigation improvements. Like other homesteaders of this period, theirs was a diversified subsistence; they raised livestock as well as farmed and used the site as a winter residence, summering elsewhere with their livestock. Irrigated crops included alfalfa, wheat, corn, rye, sorghum, and potatoes. Unlike the Orr homestead, the Stitz family seems to have been quite poor. There are, for example, no sign of toys despite documented presence of children, and not even any remnants from canning which one might expect of those trying to save cash. There seems to have been little disposable income available to this family. The family seems to represent the same diversified rural subsistence approach as the Orrs, but a much less successful one.

Ethnicity was a part of the research agenda for mitigation of this site. Originally, investigators thought the site might represent Italian settlement because there was a stone bread oven on the site similar to types often attributed to Italian, Greek, or Hispanic settlers; documentary investigation revealed the place to be in fact the result of German occupation. The stone oven turned out, upon further investigation, to be similar to Bavarian styles, as well as to another oven on a site nearby that was used to provide bread for convicts. The authors propose that Anna may have had a sideline of providing food for the convicts as well.

### **The Doshier/Ripley Homestead: Irrigation Agriculture, Domestic Life**

This site is in San Juan County, New Mexico (LA36,652). At this site there were three homestead attempts, on 160 acres in 1910 and 1912, and under the Desert Land Act in 1917 by Edward E. Doshier. In 1919 Reuben Ripley began the process of filing a claim but later canceled it. The documentary record is sketchy because all claims were relinquished, but the researchers concluded that Doshier was at the site between 1912 and 1916, and Ripley from 1919 into the 1920s. This site, like others filed under the Desert Land Act, is a good candidate for addressing research questions surrounding water systems in the west. Horn and his colleagues interpreted the repeated failures to patent this land as evidence of inadequate irrigation from the La Plata River, and thus it contrasts with the Orr homestead where irrigation was successful.

Since Ripley’s time, the land has been part of the public domain. Thus the site has good clarity in that all the archaeological data from the site is attributable to Doshier and possibly Ripley. Crops included hay and corn, but most of the archaeological evidence came from domestic spaces, and reflected domestic rather than agricultural activities. This report has excellent photographs of representative artifacts and tables showing artifact frequencies and analytical categories.

### **Two Homesteads along the Mid-America Pipeline (mitigation)**

#### **The Stanfield (5GF1561) and the William Cowling (5DL318) Homesteads: Early Twentieth-Century Dryland Farming to Commercial Livestock Transition, Human Ecology, Diversified Rural Subsistence**

As part of the extensive linear Mid-America Pipeline Project, personnel associated with Alpine Archaeological Consultants, Inc, excavated two different homesteads on Colorado's Western Slope (Horn, Fetterman et al. 2003). Again, faced with a mitigation rather than a testing project, and with 233 prehistoric and historic sites having potential significance, Horn and his colleagues once again chose to sample the significant sites for extensive mitigation, including portions outside of the project right-of-way. Of the eight historic period sites selected for extensive research, two were homesteads.

The Stanfield Homestead (5GF1561), in the vicinity of Grand Junction, and the William Cowling Homestead (5DL318), just north of Dove Creek, were both established in the early twentieth century as part of that era's dryland farming boom. The Stanfield Homestead was situated in a region poorly suited to dry farming. Artifacts recovered from the excavation demonstrate the inability of the residents to pursue farming and they document their change to raising cattle in a pattern perhaps parallel to that on the Leplatt site. The Stanfield's 160-acre parcel was too small for long-term cattle ranching, and so, after proving up their homestead, they sold out to a larger cattle outfit, a move that appears to be common throughout Colorado (Church 2002; Reed and Horn 1995b). William Cowling and his family chose a much more suitable location for dryland farming. Supported by a successful farm, and supplemented by William's occasional employment as a miner in Telluride, the family was able to invest in a number of improvements on their homestead, including the construction of a blacksmith shop. Excavations on the site show that, based on their successful farm and smithing operations, the family remained economically stable during the Depression. Not only did they have a diverse and healthy diet, they also acquired a considerable number of luxury goods (Horn, Fetterman et al. 2003).

## **HIGH ALTITUDE**

### **Koenig Homestead/Ranch (5LR734) (limited testing of Feature 24): Diversified Farming/Ranching, Archaeology for Preservation (Not Salvage) of Sites**

Richard F. Carrillo led work on the Pingree Park Mountain Campus of Colorado State University (CSU), Fort Collins, which combined a survey of 100 acres with test excavations of a tool shed on one homestead site. The homestead is on the National Register of Historic Places and lies on land that was originally patented in 1893 by brothers Hugh and Charles Ramsey, where they built a sawmill. The first family to live and ranch on the property was Hugh Ramsey's son-in-law and daughter, Frank and Hazel Koenig, who raised five children on the place. As with the other cases described so far, they diversified their subsistence, growing hay in irrigated fields and raising horses, cattle and goats, as well as trapping furs. The site has a wide assortment of vernacular "hand-crafted" structures further testifying to the diversification of this enterprise, including a barn, corral, chicken coop, smoke house, tack house, tool shed, dugout root cellar, storage sheds, spring house, school house, outhouses, living quarters, and rental cabins. The original Koenig Ditch and hand-dug feeder ditches are extant.

In 1913 the land adjacent to the Koenig property became part of a forestry camp for Colorado Agricultural College (later CSU). In 1974 the college purchased the homestead property and appended it to its Pingree Park campus and this CRM project was the result of new plans to build a conference center at the site. Preservation of the historic structures was part of this plan, and so this was a case of archaeology serving to test impacted areas, find unrecorded features, and determine feature function.

## **SUMMARY OF COLORADO RESEARCH PRESENTED HERE**

A brief list of the kinds of issues addressed by the survey (landscape and site scales) and excavation data collected so far on post-contact rural agricultural sites in Colorado are representative of those addressed by anthropological archaeologists everywhere and would include (but are not exclusive to)

- Subsistence and ecology
- Settlement adaptation and evolution
- Creation and maintenance of ethnic identity

- Relationships with state systems
- Ethnic interactions
- Gender relations
- Class relations
- Economic exchange and World Systems
- Any combination of the above

The data from rural agricultural sites have at times also served more limited research ends relating to architectural history (e.g., early Boggsville work and Brown Sheep Camp). The broader anthropological questions have, so far, been explored on very few sites that represent a very narrow range of decades of Colorado history. In most cases, archaeologists are left with preliminary hypotheses and models derived from one or two sites at best. These hypotheses and models still need to be tested on other sites occupied by different groups or in different time periods. Generalizing about subsistence or ethnicity from excavations and associated documents from 10 or 12 late nineteenth century ranch sites is no more valid than doing so for the pre-contact agricultural Southwest after excavating 10 or 12 Pueblo II period Ancestral Puebloan sites.

## **RESEARCH GAPS AND OVERLAP WITH OTHER THEMES**

There is an infinite number of possible historical and anthropological research questions that can be addressed on rural agricultural sites, and given the variety of economic and subsistence strategies, ethnic and class origins, and gender compositions, the Colorado studies described previously address a remarkable number of issues. No doubt all those issues could bear further hypothesis-building and exploration. And new issues will arise. For example, one notable commonality on many homesteads and ranches is the presence of children, and yet the only research mentioned above that systematically addresses the roles that children played in agricultural sites or the differences their presence made in agricultural activities relates to schools. Children on agricultural sites have always provided labor, as well as having generated interesting material culture. Jonathan Horn uses the presence or absence of toys on sites where children are documented to talk about socioeconomic status (Reed and Horn 2001). There are many sources available on the material culture of childhood in the past, and archaeology addressing specifically the status of childhood is growing (Baxter 2005). Historians and anthropologists have noted that rural agricultural economies have relied historically on a high birth rate to support child labor. Children form a substantial portion of the rural population and no doubt have had significant influence on decisions relating to consumption and production on farms and ranches in Colorado.

Potential research questions about rural agricultural communities overlaps with the theme of the chapter on communities, yet these questions are relevant. Richard Carrillo has also worked for years doing archaeology at the early rural community of Boggsville. Many small communities in Colorado were and are agriculturally based, and in fact, on larger ranches with many employees, a bunkhouse might represent a multiethnic community in microcosm (Chapter 3, Settlements). A research agenda that speaks directly to the “rugged individualism” mythology that so strongly reinforces the Western ethos would involve a comparison between individual farmsteads, larger ranching enterprises, and utopian agricultural colonies, the latter an “attempt to challenge the typical American pattern of individualism by having an entire group or colony settle an area in a cooperative manner” (Mehls and Mehls 1988:10). Such cooperative colonies might be usefully compared with Mormon and Hispanic settlements, which also contrasted with or actively resisted some of the currents within nineteenth century ideas of “progress” and individualism in favor of more communal agrarian ideals. It is well established that such communal and religious ideologies are reflected in land use and the built environment (see, for example, Leone 1973). Such sites provide an opportunity to explore the success and failure of such settlements, established in the midst of active and heated debate during the nineteenth century about contrasting agricultural and settlement strategies (Powell 1878; Stegner 1953). Similar forms of resistance to Anglo-Victorian modes of land use manifested themselves in the 1960s and 1970s counterculture at sites such as Drop City, a hippie commune established near Trinidad and described by Richard Carrillo and his coauthors (Carrillo et al. 2003).

Agricultural themes overlap with those of ethnicity in Colorado as well. This overlap would be the case for Dearfield, a nineteenth-century African-American settlement east of Denver. According to historian Quintard Taylor, in 1900 there were 58 African-American farms in Colorado, valued at \$150,359, and in 1910 there were 81, valued at \$505,135. These numbers may seem startlingly paltry when compared with neighboring Kansas and Oklahoma (Taylor 1998:152), but are less so in light of the fact that by the 1920s “the Klan [Ku Klux Klan] dominated Oregon and Colorado politics” for a short time, with Colorado electing “a Klan governor and a majority of Klansmen in the lower house of the legislature in 1924” (White 1991). African-American stock raisers, herders, and drovers (owners or laborers) are also poorly represented at the height of the cattle industry in 1890, totaling 21 (Taylor 1998:157). The majority of blacks, however, like all other ethnicities, settled primarily in urban areas (Taylor 1998). “Sixty-one thousand ranchers, herders, and drovers worked in the range cattle industry in 1890. However, they comprised only two percent of the three million workers in western states and territories (Taylor 1998:156).” Taylor argues that “historians have exaggerated the number and influence of western cowboys” in general, and agrees with Jordan that they have “erred in their estimates of African-Americans in the industry” (Jordan 1993; Taylor 1998:157).

Communities and ethnicity are not the only themes in this volume with which this agricultural theme overlaps. Linear features such as irrigation ditches and railroad access are clearly closely associated with any settlement, landscape, or economically based approach to agricultural settlement in the state. Ranches were sometimes also post offices, stagecoach stations, and stores. Some became dude ranches, thus overlapping with the recreation theme of this volume. Although the Civilian Conservation Corps was responsible for obliterating the archaeological record of many sites at Rocky Mountain National Park (Butler 2005), in doing so they left their own material signatures on the landscape that are pertinent to federal government involvement in the Western past. Many individual farms and ranches provided food to mining towns or urban markets, thus overlapping with mining and other themes in this volume (Clark et al. 1997).

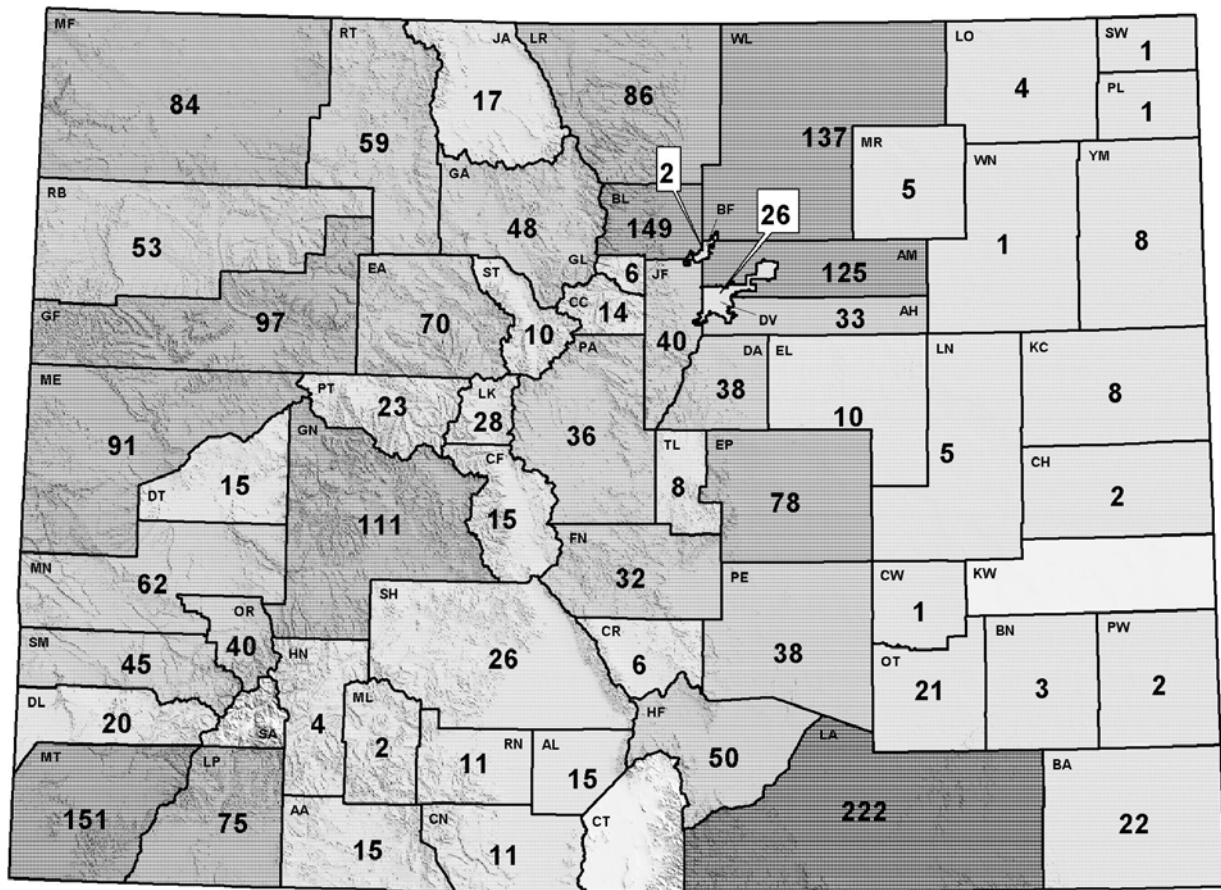
## **REGIONAL AND TEMPORAL GAPS**

Figure 18, Figure 19, and Table 21 (below) illustrate the uneven coverage of historical agricultural sites through time and across the state in general. Figure 18 displays the relative density of archaeological sites recorded by county, and Figure 19 the density of those sites that are deemed Officially Eligible. These maps document where CRM work has concentrated in the state, of course, not a real distribution of rural sites in Colorado. As such they illustrate areas where more archaeological research on any such sites would be a valuable contribution. There were some problems searching for this data in the site files data to generate these tables; these problems are discussed below, but they are generally illustrative.

### **Temporal Gaps**

No Colorado counties display a real chronological cross-section of “Early Dates” representing sites in decades starting with the 1850s (Table 21). Having fewer sites in earlier decades represents the reality of sparser settlement in early years, while tapering numbers for the mid-twentieth century probably reflects the fact that such sites are only recently reaching the 50-year age threshold for recording. Representation in general is best at the turn of the twentieth century, but overall is spotty.

Regionally, most of the exploration of agricultural sites has occurred where private industry has required CRM work. In this sense, glimpses of regional patterns in agricultural settlements have been opportunistic rather than systematic. For example, although Northern Colorado seems to be moderately well represented in the state database research data, Weld County figures largely in the Centennial Farm projects and among National Register agricultural sites recorded primarily on the basis of architecture (Mehls and Mehls 1988). So the representation of sites does not necessarily represent archaeological research potential. Judging by the date ranges of excavated sites that could be searched on in the state database, data is also short from sites pre-dating about 1870 (Table 21), which would include virtually all the earliest Hispanic settlement in southern Colorado, but also some early Irish, English, French, and German occupations.



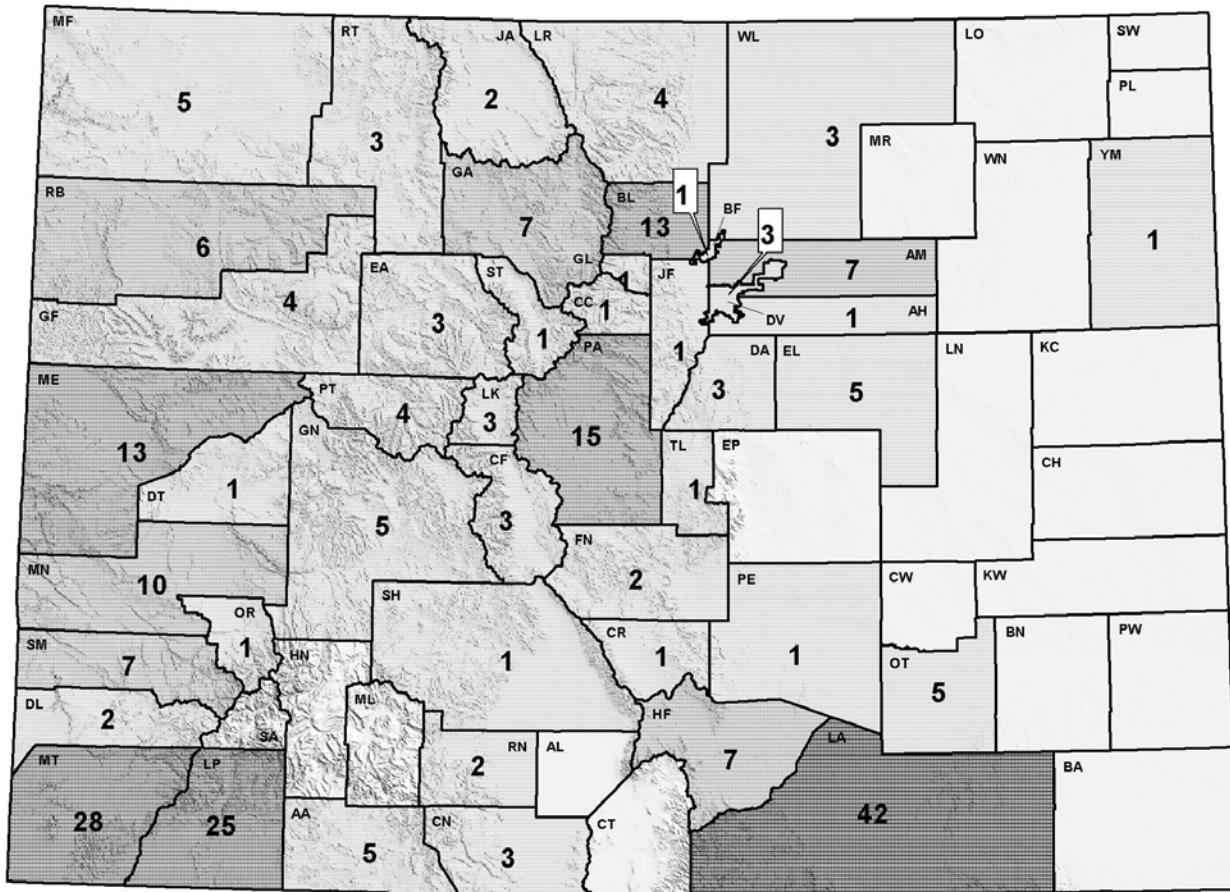
**Distribution of agricultural sites among those classified as historical archeological sites in the OAHIP site files (N=2418).**

**Figure 18.** Colorado agricultural archaeological sites by county.

In the case of early Hispanic settlement, the reason for underrepresentation probably has something to do with where survey data exist for Colorado (for example, agricultural sites in Costilla County are completely unrepresented in the state database) and even more to do with how we recognize such sites. Richard Carrillo has an excellent synopsis of the changes in architecture and material culture for such sites through time, and early Hispanic sites are often characterized by “European” (non-Indian) types of architecture, for example, square stone-built, jacal or adobe structures or foundations, and only lithic and possibly worked-glass artifacts, including groundstone and various types of chipped stone (Carrillo et al. 2003). Rather than identifying these as single component early Hispanic sites, many such sites have been recorded incorrectly as multicomponent sites, the assumption being that all lithic production of any kind must, by definition, be of strictly Native American origin. Building on this erroneous assumption, those recording such sites have judged them to have mixed context and poor site integrity, and therefore the overall misinterpretation has had ramifications on site evaluations. This problem is compounded further by the fact that, especially on survey projects, archaeological practice often has not included adequate background archival research in the census or GLO records to document ethnic settlement.

Artifact assemblages are distinctive mainly in their simplicity; items of Angloamerican derivation are scarce, and aboriginal-type artifacts – groundstone and chipped stone tools and manufacturing byproducts – may occur. Identification of such traits, and establishment through archival and other historical sources of the presence of New Mexican Hispanics in the nineteenth century in southeastern

Colorado, goes a long way to explain seemingly enigmatic architecture-artifact combinations at many sites (Carrillo et al. 2003:128).



**Distribution of agricultural sites listed as eligible with SHPO concurrence among those classified as historical archaeological sites in the OAH site files (N=262).**

**Figure 19.** Officially eligible agricultural sites by county.

Although Carrillo here is describing sites in southeastern Colorado, an even greater potential for such early sites exists in the San Luis Valley, as well as to the west of the San Juan Mountains. Such sites in the state database should be reevaluated based on the work of Carrillo whenever they are encountered. It is entirely possible that our sample of recorded Hispanic agricultural sites predating 1870 in southern Colorado is much better than is thought at present but also that those sites are largely misevaluated and therefore at risk, because no sample of them is protected.

It is not surprising that the counties with the best chronological representation of sites are those that contain urban areas or military bases. Liberal and conservative political attitudes toward development and resulting municipal and county policies regarding historic site recording and preservation may also be reflected in the data (for example, note the difference between Boulder County and El Paso County – Boulder and Colorado Springs – representations). Boulder (liberal) has been historically much friendlier to preservation projects than Colorado Springs (conservative). In contrast, a skew towards later-dated sites in, for example, Eagle County may reflect the reality of chronologically later agricultural settlements at higher altitudes.



## Regional Gaps

Much more glaring are the regional gaps in sites recorded overall (Figure 18, above) and in those deemed officially eligible for inclusion in the National Register of Historic Places (Figure 19, above). It is, at first glance, startling to see that eastern Colorado, where, arguably, the most agricultural development has occurred through time, is, in general, the least well represented in the recorded site database. However, this pattern is a result of federal land ownership and requirements necessitating CRM work. Few agricultural sites on private land have been recorded anywhere in the state, and most agricultural sites have been found on federal lands. Many such sites may be unpatented or “failed” attempts and are erroneously considered insignificant because of that status.

Figure 20 shows which counties have sites where the site database field “condition” shows them to have been either tested or excavated. Some of these are no doubt pre-contact period sites that were tested and happened to have a historic component that may or may not have been explored in the process, such as those at Mesa Verde. So again, the sample is probably deceptive in terms of addressing research geared primarily to historical sites but is the best that can be gleaned with a database search.

**Table 21:** Number of officially eligible archaeological agricultural sites by county and “early date” by decade.

County	-1850	1850-59	1860-69	1870-79	1880-89	1890-99	1900-09	1910-19	1920-29	1930-39	1940-49	1950-59	1960-69
Archuleta	-	-	-	-	-	-	1	1	1	-	-	-	-
Arapaho	-	-	-	-	-	-	1	-	-	-	-	-	-
Alamosa	-	-	-	-	-	-	-	-	-	-	-	-	-
Adams	-	-	-	-	-	1	1	2	-	-	1	2	-
Baca	-	-	-	-	-	-	-	-	-	-	-	-	-
Bloomfield	-	-	-	-	-	-	-	-	-	1	-	-	-
Boulder	-	-	-	1	-	-	2	-	-	1	1	-	-
Bent	-	-	-	-	-	-	-	-	-	-	-	-	-
Clear Creek	-	-	-	-	-	1	-	-	-	-	-	-	-
Chaffee	-	-	-	-	2	-	-	1	-	-	-	1	1
Cheyenne	-	-	-	-	-	-	-	-	-	-	-	-	-
Conejos	-	-	-	1	1	1	-	-	-	2	-	-	-
Custer	-	-	-	-	-	-	-	-	-	-	-	-	-
Costilla	-	-	-	-	-	-	-	-	-	-	-	-	-
Crowley	-	-	-	-	-	-	-	-	-	-	-	-	-
Douglas	-	-	-	1	-	1	1	-	-	-	-	-	-
Dolores	-	-	1	-	-	-	-	-	-	-	-	-	-
Delta	-	-	-	-	1	-	-	-	-	1	-	1	-
Denver	-	-	-	-	-	-	-	-	-	2	1	-	-
Eagle	-	-	-	-	1	-	2	-	-	-	-	-	-
Elbert	-	-	-	-	-	-	5	-	-	-	-	-	-
El Paso	-	-	1	-	-	-	1	-	-	-	-	-	-
Fremont	-	-	-	-	-	-	-	-	-	-	-	-	-
Grand	-	-	-	-	-	-	1	-	-	-	-	-	-
Garfield	-	1	-	-	-	2	-	-	-	-	-	-	-
Gilpin	-	-	-	1	-	-	-	-	-	-	-	-	-
Gunnison	-	-	-	-	1	-	1	1	-	-	-	-	-
Huerfano	-	-	-	-	-	1	1	2	-	-	1	-	-
Hinsdale	-	-	-	-	-	-	-	-	-	-	-	-	-
Jackson	-	-	-	-	1	1	1	-	-	-	-	-	-
Jefferson	-	-	-	-	-	-	-	-	-	-	-	-	-
Kit Carson	-	-	-	-	-	-	-	-	-	-	-	-	-
Kiowa	-	-	-	-	-	-	-	-	-	-	-	-	-
Las Animas	-	-	-	4	5	3	1	4	-	2	1	-	-
Lake	-	-	-	-	-	-	-	-	-	-	-	-	1
Lincoln	-	-	-	-	-	-	-	-	-	-	-	-	-
Logan	-	-	-	-	-	-	2	-	-	-	-	-	-

County	-1850	1850-59	1860-69	1870-79	1880-89	1890-99	1900-09	1910-19	1920-29	1930-39	1940-49	1950-59	1960-69
La Plata	-	-	-	1	1	4	1	3	-	1	-	1	-
Larimer	-	-	-	-	-	-	1	1	-	-	-	-	-
Mesa	-	-	-	-	-	3	3	1	-	2	-	-	-
Moffat	-	-	-	-	-	1	-	1	-	1	-	-	-
Mineral	-	-	-	-	-	-	-	-	-	-	-	-	-
Montrose	-	-	-	-	1	2	1	-	-	-	-	-	-
Morgan	-	-	-	-	-	-	-	-	-	-	-	-	-
Montezuma	-	-	-	-	2	-	3	1	-	1	1	2	-
Mesa Verde	-	-	-	-	-	-	-	-	-	1	-	-	-
Ouray	-	-	1	-	-	-	-	-	-	-	-	-	-
Otero	-	-	1	-	1	-	1	-	-	-	1	-	-
Park	-	-	-	4	3	2	9	1	-	-	1	4	2
Pueblo	-	1	-	-	-	-	-	-	-	5	-	-	-
Phillips	-	-	-	-	-	-	-	-	-	-	-	-	-
Pitkin	-	-	-	-	-	1	-	1	-	1	-	1	-
Prowers	-	-	-	-	-	-	-	-	-	-	-	-	-
Rio Blanco	-	-	-	1	-	-	2	1	-	-	-	1	-
Rio Grande	1	-	-	-	1	-	-	-	-	-	-	-	-
Routt	-	-	-	-	-	-	1	2	-	1	2	-	-
San Juan	-	-	-	-	-	-	-	-	-	-	-	-	-
Saguache	-	-	-	-	-	-	-	-	-	-	-	-	-
San Miguel	-	-	-	-	-	1	2	2	-	-	-	-	-
Summit	-	-	-	-	1	1	-	-	-	-	-	-	-
Sedgwick	-	-	-	-	-	-	-	-	-	-	-	-	-
Teller	-	-	-	-	-	1	-	-	-	-	-	-	-
Weld	-	-	-	-	-	1	1	1	-	-	-	-	-
Washington	-	-	-	-	-	1	-	-	-	-	-	-	-
Yuma	-	-	-	-	-	1	1	-	-	-	-	-	-

These figures and tables are generated from site files data from the Colorado OAH. However, a word of caution is in order concerning the problem of how agricultural sites are represented in the database. The problem is a complicated one and may well be impossible to fix retroactively. Database technicians have understandably preferred to stick to exactly what people put on site forms rather than edit as they go. As a result, there is no standardization within fields, and the information in fields frequently overlaps, so that, for example, a corral may occur on some forms under “Archaeology Type,” “Feature,” “Architecture Site Type,” “Architectural Features,” “Original Use,” or “Present Use.”

This problem reflects the unstandardized recording practices in the field, and as a result there is no set of search terms that will select all the agricultural sites of any type out of the database. One might retrieve an unsystematic and possibly unrepresentative sample of pertinent sites by using the following keywords: homestead, agricultural, barn, bunkhouse, farm, dugout, ranch, corral, tank, windmill, sheep, livestock, cattle, silo, water tower, pen, (aspen art and graffiti will also return agriculturally related sites, but these terms were excluded from this sample). Because of the variation within the fields (e.g., school, schoolhouse, school house) one must also enter search terms to exclude records from the search. There are also keywords that may select rural agricultural sites but are somewhat ambiguous, such as mill (also gets sawmills or stamp mills), cairns, fence lines, check dams, and the like. Other keywords are extremely ambiguous, as they also describe features on nonagricultural sites: foundation, habitation, building, dwelling, house, residential, architecture, rock art, ponds. By the time the search is at all comprehensive enough to cover most agricultural sites, yet exclusive enough to exclude mining camps, hunting camps, target ranges, trash dumps, and innumerable other site types, the search is so complicated that, as often as not, Microsoft Access will return a “query too complex” message with any attempt to run it.

For the purposes of search data presented above, we used the following search terms outlined in Table 22, below, generated by trying different search terms and viewing results until we got the sample of agricultural sites with the least “noise.” The sample excludes aspen art and graffiti because they are a large



visits with different professional opinions as to the latest TPQ dated artifact on the site, or different TPQs for individual artifacts on the site. The multiple listings under “Early Date” mean that many sites are thus represented in multiple decades in Table 21. So, in short, the sample of sites is problematic. However, for purposes of very broad comparison it should give an extremely general sense of where research gaps exist regionally and chronologically.

Overall, archaeologists have excavated relatively few agricultural sites in the state of Colorado. More have been tested, and the pattern here, as might be expected, mirrors somewhat the data shown in Table 21. Las Animas County, with the work done at the Piñon Canyon Maneuver site, has hosted a lot of testing and a small amount of excavation. Several sites in Montezuma County have also been excavated and tested, although this is also an area where sites with both prehistoric and historic components are frequent. Again, a question might arise as to whether the research was geared to the historic component.

**Table 22.** List of search terms included and excluded in attempt at comprehensive search of agrarian sites.

Terms searched under fields “Archaeology Type,” “Feature,” “Architecture Site Type,” and/or “Architectural Feature”		Terms excluded from search under field “Original Use”		
Homestead	Tank	Mining	Target	Mine
Agricultural	Windmill	Crude oil	Camp	Guard
Barn	Sheep	Aspen	Railroad	Powder
Bunkhouse	Livestock	Graffiti	Logging	Hot springs
Corral	Cattle	Logging	Oil well	Burial
Farm	Silo	Military	Quarry	Art
Dugout	Water tower	Tree	Hunting	Prospect
Ranch	Pen	Trash	Chute	

## SITE SIGNIFICANCE

Of the 2,683 historic sites identified in the OAH database using the limited search terms, 270 are deemed officially eligible to the National Register, 898 are officially not eligible, 134 officially need data, and 1,266 are not officially evaluated. There is overlap as many sites have been evaluated several different ways over several site visits. Unfortunately, there is no information in the database regarding what criteria people are using to base their estimation of eligibility in either field or official assessments, nor which of the several assessments listed is the most recent. As stated in the introduction to this volume, we suspect that the criteria vary, and it would be very interesting to know how people are applying them to these agricultural sites. Unfortunately, there is no way to do so.

### Site Recording Prior to Assessment

Richard Carrillo’s work on the Koenig Ranch was limited to testing in the area of proposed disturbance, so research questions were narrow and functionally oriented, and goals included recording previously unrecorded features. In fact, Carrillo identified fully 29 more features and some isolated finds, all previously unrecorded and some lying outside the present 80-acre historic site boundary. Such features included everything from a barn and cabin perhaps associated with tie-hacking in the 1860s to privy pits (five), to the Koenig era trash dump. After consultation with the OAH, Carrillo notes in his report that “if there were more features than could be recorded in the allowed field and post-field time, the features would be recorded by using a priority system that took into account the allowed field and post-field time” (Carrillo 2002:13). This is one accommodation to a common dilemma faced (not exclusively) by historical archaeologists when they bid on a site based on information about recorded site extent, and then find that the sites are more extensive than that information had predicted. Faced with this problem, Carrillo finished the contracted work and made several recommendations for further work, including more complete recording of

the 29 additional features and 5 isolated finds, testing on 11 of the 44 total features to assess eligibility, and, of course, additional testing in the case of any further ground-disturbing activity.

It is also frequently the case that a pre-contact site is recorded with minimal or even complete lack of mention of historic features. Then when the hapless CRM personnel responsible for testing or mitigation head out to do the work, they find they are responsible for more than they had expected.

In the course of work in Canyons of the Ancients, Jonathan Horn was confronted with the problem of using site forms generated by archaeologists who, it would seem, were not thorough or clear in their recording practices. Overall there were 209 sites with some degree of historic period activity. 44 were excluded because the historic component was only a rock cairn or the like. Of the 164 sites remaining, many had multiple components, and the relative importance of the historic component is unclear. Eighteen are officially eligible for the NRHP, yet Horn notes

It is often unclear if the eligibility determination pertains to both the prehistoric and historic components, or was intended to apply just to the prehistoric component. Clarification of eligibility status by temporal component at the multicomponent sites within the monument is important for future management (Horn 2004a:41).

It is a certainty that Horn is not the only one to have run into this particular problem in attempting to interpret the significance assessments proposed by others, using their site forms.

Of the 164 historic sites or site components, only 36 have any dating information attached to them. Three of these indicate dates or date ranges more recent than 50 years ago. The lack of dating information for most of the historic sites indicates an inability to adequately analyze historic artifacts by recorders and/or an absence of research about individual sites and their artifacts (Horn 2004a:41).

It seems clear that recorders did not accomplish the basic minimum of archival research. The problem is a serious one, as he notes that “in general, a lack of concrete data leads to faulty National Register evaluations, usually resulting in evaluations of insignificance” (Horn 2004a:41).

To make a reliable assessment of the significance of a post-contact period site, the first step is to base it on a solid footing of good information, both archival and archaeological. Therefore, a trained historical archaeologist should be a part of any general survey crew, or excavation crew on a post-contact site. That person should be relied upon to keep in mind the following procedures. Some of these points are important for all historic period sites, some are specifically important for agricultural ones.

1. Always do archival research on the area before you go to survey it, or at least well before the stage at which you determine site significance (see Chapter 1, Introduction, for suggested archival sources).
2. That said, it is best not to rely solely on the documentary (or oral) information to give complete or even necessarily correct dates of site occupation(s) or identification of site occupants; derive information independently from documents and from the site’s artifact assemblage.
3. When filling out the site type field, do not list all the features on the site. Give the general site type, and leave the feature types to the fields for feature descriptions.
4. When filling out “cultural affiliation,” do not say Euroamerican or Anglo-American unless you are positive that the primary site occupants were in fact of European or English descent. If you cannot determine probable descent from the archival record, oral narratives, or patterns of architecture and artifacts, then use a more general term such as “unknown historic.”
5. When filling out the “early date” field for a site, specify whether you are using only documentary information, artifact information, or both. Always use both where both are available, even if they do not agree. Do not enter the early date (TPQ) for every datable artifact in every individual feature or artifact concentration in the blank on the site form that is provided for noting the early date for the entire site. If you are lucky enough to have such a rich dataset, give one early date for the site, representing the latest TPQ available in the earliest feature or concentration. If the features or

concentrations within the site are individually datable, then that dating information can go in the individual feature and artifact descriptions.

6. When recording artifacts, be specific. Descriptions like “Tin can” or “nails” are not informative, whereas “Sanitary cans,” “hole-in-cap cans,” “common cut nails,” “furniture tacks,” or “wire nails,” along with an estimated quantity of each, are.
7. Note the potential integrity of subsurface deposits and surface scatters. Do not base assessments of archaeological significance or integrity on the presence, absence, or derelict state of architecture. Architecture is part of the material record of a site but not the only determinative one.
8. If it is necessary to record widely dispersed ranching features as separate sites, even though they are associated with the same ranching operation, then cross-reference the site numbers on the various site forms. In many cases, having done the necessary archival research, you will know the original ranch boundaries and will have a good idea of which features are associated with the property in question.
9. When you designate a site as “eligible,” “not eligible,” or “needs data” in the field, it is critical that you explain the criteria you are using to make that determination. Furthermore, when it is a multicomponent site (e.g., a homestead that sits on a Late Prehistoric site), it is equally critical that you explain on the form whether one or both components are eligible, and if both, whether they eligible for the same reasons or different ones.
10. Finally, *it is just as important to explain why you think a site is not eligible as why you think it is.* This means noting what archival sources are or are not available, and the state of site integrity (by which is meant the entire site, above and below ground).

### **General Points to Consider for Site Evaluation**

There is a general discussion of significance evaluations in the introduction to this volume. What follows is a list of suggested criteria to think about when evaluating site significance on farming and ranching sites, loosely based on a list by Donald Hardesty (Hardesty 1982), and on input from Jonathan Horn (personal communication 2005). The first issue is, of course, the relationship of the site to the criteria for nomination to the National Register of Historic Places (NRHP). This question requires consideration of all the possible criteria, and the following questions can help.

1. Does the site have unusual aspects that can serve as a comparison with other sites? Or...
2. Does the site provide archaeological information about a documented event, or new information about or perspectives on an underdocumented one? Or...
3. Is the site representative of a statistical population, such as the Post-WWI “veterans’ bonus” homesteading population? This is probably the area of greatest difficulty in field evaluation. People tend to look around them and see that there are thousands of homesteads, farms, and ranches in the state of Colorado and are thus tempted to evaluate them, in a knee-jerk fashion, as “not eligible.” The question to ask oneself, however, is not only how many such sites exist, but what subset of such sites this particular site represents in terms of potential information (time period, environmental zone, functional category, or ethnic group?), and whether or not other sites from this particular subset have been preserved/avoided and/or tested or mitigated. In other words, it does not matter if there are half a million identical sites in the county if none of the others have been recorded, deemed potentially eligible, or are protected. The emphasis should be on what new information about the statistical population the site can contribute and how many such sites have been recorded and protected, not how many similar sites exist.
4. Does the site have the ability to yield unambiguous data sets? For example:
  - Sites of short duration with good historical context
  - A complex where function may be determined for individual components
  - A long-occupied site where elements that are discrete, for example, with remains of outbuildings of specific or short-term use
  - Outhouses that can provide discrete data sets from short time periods.
5. Does the site represent a complex for which patterning of use or layout can be determined or be readily understood? This consideration is particularly important for comparative studies of regional land use, ethnic characteristics of site use and layout, or transplants of design and layout brought from

other regions of the United States or foreign lands. Such an approach may facilitate use of a site for interpretive purposes.

6. Can archaeology at the site assist in providing information on construction sequencing and modification to layout through additions, abandonment, and function changes through time?
7. Does the site contribute to a larger historic district or cultural landscape? In this case, the site characteristics must be considered not just in terms of the individual site's research potential, but in the context of the overall view-shed and land-use issues at the district scale.

### **Site Attributes to Consider for Evaluation**

Specific site attributes can tell one whether a particular site can provide useful information.

1. Does the site potentially provide information about changes in homesteading, ranching or farming patterns over time or across space?
  - a. Are site features archaeologically visible and reasonably undisturbed?
  - b. Does the site contain features that can be dated rather precisely? Sometimes a site that has a clear, short occupation is more potentially informative than one where multiple occupations may muddy the picture (see previous discussion of Berry/Stewart site in "Examples of excavated rural agricultural sites in Colorado: Western Slope" as an example).
  - c. Are the site features vertically stratified or horizontally discrete so that studies of cultural or ecological change can take place?
  - d. Does the site have a multiethnic occupation? If so, does it potentially provide new information about ethnic interaction?
  - e. Does the site have features that can be used for the study of environmental change or people's changing attitudes toward or knowledge of the local environment?
2. Does the site have public interpretive potential? This consideration may apply especially where the lead agency is in the business of interpreting the past to the public, such as the National Park Service, or where State Historical Funds are involved in the project. For much of CRM work in the private sector, it might apply to a lesser extent.
3. Does the site contribute in some way to the more general context of a historic district or cultural landscape?

Given the fact that the BLM now has the GLO records of homestead patent information available online for free, searchable by name, section, patent number, and/or township and range, there is really no excuse for anyone conducting survey, testing, or mitigation of archaeological sites on rural tracts not to consult these records, at least. There are still some glitches and gaps in the online data (William Butler, personal communication 2004), so researchers will need to coordinate consultation with the hard paper trail. Online data also do not include information about relinquished or cancelled claims, only those that went to patent. Files on relinquished and cancelled claims are on file at the Denver Branch of the National Archives, and it is possible that files for some of the land offices may still be on hand at the BLM state office in Lakewood. It is also possible to get additional basic information about cancelled and relinquished claims at the BLM state office in the Public Room, but the files are really good and it is not always necessary to send away for them to the National Archives in Washington. If it is necessary to do so, the process of getting patented claim files from the National Archives is greatly simplified now, and researchers can now order patent documents online.

This effort should be only the beginning of the archival research. If a name is associated with a domestic site, then researchers should, at minimum, also consult deeds and titles, tax records, and local census documents. Also available are Soil Conservation Service maps of land use by county, and Civil Works Administration interviews with old settlers collected in the 1930s (which were conducted county by county, but not for all counties). It is at the archival stage of research that one can discover whether or not a site is, in fact, correctly termed a "homestead," i.e., established under the Homestead Act of 1862 or successive related laws dispersing public lands into private hands. Although the term *homestead* predates this legislation, usage of the term by historians has come to be more specific. If it was not patented under the 1862 or subsequent acts, the site is a farmstead or ranch but not a homestead (Buckles 1993a). It is also important to be aware

that some portions of Colorado remain unsurveyed by either the GLO or, later, the United States Geological Survey (USGS). Some areas have been resurveyed and section lines subsequently altered somewhat. So a homestead that was established in a particular quarter section may now lie just outside that section's or quarter section's boundaries on current USGS maps.

Another specific problem confronting researchers when evaluating rural agricultural sites is the widespread, wholesale relocation of buildings. This activity is, in some ways, part of a larger human behavioral trend of heavy recycling of all kinds of materials at such sites. Although potentially interesting to track as a means of looking at changing landscape and architecture use, it also wreaks havoc with archaeological integrity. Furthermore, the movement and reuse of buildings can be very difficult to unravel and interpret. It can be easy to overlook a much more recent foundation under a house, much less recognize that one may have already recorded the original foundation several miles away. The problem is compounded, as Mehls and Mehls point out, by an unfortunate institutional incentive for landowners to completely destroy abandoned and potentially eligible historic buildings; Colorado property tax law requires that these buildings stay on the tax rolls until actually torn down (Mehls and Mehls 1988:38).

## SUMMARY

It is apparent from the data above that the majority of work on historic agricultural sites has been accomplished during the course of survey projects. Although these kinds of projects are especially amenable to a landscape approach, there is often an emphasis on site-by-site recording, and not on sites' and features' relationships to each other and to the surrounding terrain.

In terms of the southern counties of Colorado, where Spanish-speaking settlers were in the majority from the 1860s well into the twentieth century, good data exist for later Hispanic sites, but much less for early ones, perhaps because researchers are not recognizing them. Finding research that presents models of what such sites will look like, such as that done by Richard Carrillo, can aid with this goal (Carrillo et al. 2003:128). The dearth of early settlement sites is not restricted to Hispanic sites but is a general gap. It is easier to recognize farms and ranches established during the period that the Homestead Act was in sway than those before it, mostly because the documentary record of such later sites is more complete. That simply means archaeologists may have to dig a little more, in the archives as well as in the ground, to find them.

On agricultural sites in Colorado in general, researchers need to make better use of archival sources that are available and increasingly easy to use. They should be used critically, however. For example, while the GLO homestead patent records are available on the BLM website now, there are sites that are missing from the database for various reasons, and it covers only successfully patented homesteads. Not only are incomplete attempts at homesteading not represented, but the database does not give chain of title information about land use after the initial homestead. Furthermore, some homesteads were patented before resurveys of the land that potentially changed section boundaries. If the site lies near the edge of a section, section lines may have moved, and the current locational information and USGS maps may not match those from the initial settlement. The GLO database is a very useful start, but it is not the final word or an appropriate final step in gathering the archival materials available on land use. It is best to go to the paper archives, and while you are there, the survey plats at the Federal Archives in Denver, especially the "dirty" plat maps with notes by the surveyors on them.

Several studies of Colorado's agricultural sites, such as those described above, are good examples of how several archaeologists are using the archival, oral narrative, aboveground and excavated materials to begin to fill in the research gaps. Furthermore, researchers are applying a larger variety of research questions to such sites than they did back in the 1980s, when the Buckleses wrote the first historical archaeology context (Buckles and Buckles 1984). This is a promising trend, and one that can continue with improved site recording and preservation decisions informed by a sense of the diverse potentials for research.



## CHAPTER 7. INDUSTRY

**Jonathon C. Horn, David R. Guilfoyle, and Burr Neely**

### INTRODUCTION

Colorado's industrial heritage is rich and complex, most notably for its frantic and volatile period of prospecting and mining during the late nineteenth century. However, the first real industry in Colorado was the much less pervasive and visible fur and hide trade (ca. 1800s to 1870s), which was initiated prior to the 1859 gold rush and the establishment of a mining frontier. The state subsequently witnessed the development of early mining and logging industries (1860 to 1920), and a period of regional, light industrialization, beginning during the early twentieth century and culminating in intensive, conglomerate operations and industrial districts. A number of manufacturing establishments rose to prominence with the growth of markets and huge capital investments associated with the mining industry. Additionally, as the major industries of mining and agriculture slowed markedly, tourism and manufacturing, particularly in the food-processing sector, began to be larger components of the Colorado economy. In this chapter, two main divisions are made: extractive industries and productive industries. Both of these sectors include a number of diverse categories at markedly different scales, and the major industries relevant to Colorado history are examined individually, despite the often complex and intricate links within the theme.

It is expected that in the analysis of the archaeological characteristics of the major and more pervasive industries in Colorado, certain recurrent themes and methods of investigation will become evident. For all industrial sites, any investigation will fall within the realm of industrial archaeology, examining patterns revolving around site structure, machinery, and architecture. Documentation of such sites is a primary endeavor of the Historic American Engineering Record. With a focus on the built environment, machinery, and townscapes, the archaeologist has the potential to study the interplay between the social and technological changes associated with industrialization. Often, unique and localized mixtures of culture and technology have emerged within particular environmental and historical contexts. A major line of research is the interpretation of technological processes (design, manipulation, and use). To successfully identify and assess a site associated with a particular industry and determine how it fits into the technological milieu, researchers need to not only be able to identify or interpret technological evidence, whether it be foundations, machinery parts, residue, or intact plants, but understand the process represented and how that process fits into the evolution of a particular industry. Often, being able to identify the basic industry represented by archaeological remains is very difficult and requires more than a casual acquaintance with the equipment and processes involved so that the few remaining clues can be interpreted correctly. The descriptions that follow for various industries will presumably assist in identification and interpretation but cannot provide all the particulars of any one industry. Only through first-hand observations of historical examples, study of historical reference materials, and experience at industrial sites in the field will competence in identification and assessment of industrial sites be achieved.

Additionally, how an industrial site affected or was affected by workers and surrounding communities is of considerable importance to an archaeological investigation. As Brown and Elling state:

There is often a lack of information about the lives and customary behavior of members of the labor force who participated in these technologies and industries, because, along with many other relatively

poor and transient segments of the population, these people are not meaningfully represented in traditional historical sources (1981:115).

Both preservation and studies of industrial sites are ways to demonstrate the conditions under which the average worker labored. According to Shackel (2004:46), “Historical and anthropological perspectives on labor help to define issues related to the impact of changing technology on workers and their families. These transformations in industry not only affected work, but they also impacted domestic life and health conditions.” Consideration should be made of how industry controlled workers, not only during work hours but also how it affected aspects of their domestic lives through regulation of town plans and housing, including regulation of boardinghouses and company towns. Often, industries attempted to control the labor force and make it compliant by instilling an atmosphere of egalitarianism and standardization. In addition, hierarchy and power differentiating managers from workers is often demonstrated in community and town layouts (Hardesty 1988, 1998a). Other topics related to the industry/labor interface include the shift from craft production to mechanized industry; race, ethnic, and social class relations, where inequalities at work and in communities can be demonstrated; and health issues, such as accidents, chronic illness, and death can be attributed to exposure during work or from industrial pollution on individual or group levels. The archaeological work conducted at Ludlow is an excellent example of illuminating labor heritage of importance to a large segment of the population that previously was not well known or was ignored by popular history.

At a broader level, the archaeology of Colorado industry is ever present at the level of landscape, as Wyckoff states:

Every place has a unique cultural landscape and yet the common cultural, economic and political threads combine to weave predictable patterns onto the visible scene that remind us of the larger significance of the localities within our purview. Tracing those threads from their origins to their new settings helps us to understand how a place acquires a particular personality and how it reflects diverse cultural, economic and political roots. (1999:6-7)

The study of industrial sites and landscapes provides a framework for examining the relationships between society and the environment over time and across space. In this way, the significance of these sites enters the realm of human endeavor, in relation to prevailing economic and social conditions. Therefore, it becomes important for the field archaeologist to investigate industries beyond the physical remains and situate a particular archaeological site within broader social and economic frameworks.

The archaeology of industry has important links to the Euroamerican exploration, settlement, and development of Colorado and contributes to an understanding of past socioeconomic processes at both local and regional scale. Additionally, industrial sites are relevant to aspects of America’s industrial revolution, nineteenth-century industrialization, and the history of technological evolution. Furthermore, industrial studies should consider “ethnic history, labor mobility, community studies, worker experiences, women and minority studies, and political behavior” (Shackel 2004:46).

In terms of the structure of this chapter, the basic division between extractive and productive industries is maintained and, where possible, the topical discussions are broadly chronological. Although the descriptions of each industry are largely historical and technological in nature, the general social, economic, and anthropological topics discussed above are applicable to each of the industries described.

## **EXTRACTIVE INDUSTRIES**

The major extractive industries in Colorado include the fur and hide trade; mining and mineral processing; timber; oil, gas, and oil shale (drilling, pipelines, storage, and processing); and food processing (such as beef, produce, or sugar beets). Archaeological resources relating to these extractive industries have the potential to contribute to demonstrating patterns in the evolution of technology and explaining the

relationship of extractive industries to the growth of the state. Such sites may be significant in not only documenting aspects of industrial growth and associated development in Colorado, but also in examining the interplay between the physical, economic, and social aspects of the industrial landscape. The social context of people and places engaged in specific industries is also of significance, especially those that have been largely ignored in historical documents.

## **Fur and Hide Trade**

### **DESCRIPTION AND BACKGROUND**

The fur and hide trade represents the earliest type of extractive industry carried out within the boundaries of present-day Colorado. Fur trappers and traders were among the first individuals to extract wealth from the state for export to the rest of the country and abroad. The most common image from the fur trade period is that of intrepid individualists, immortalized in Western folklore as the mountain men, able to earn substantial incomes from the sale of valuable beaver pelts. This popular perception is only partly true.

Before Euroamericans actually entered the fur trade in Colorado, the fur trade as a national and international economic venture had indirect effects on Native American populations of the region. Native Americans during the historic period were greatly affected by contact with European populations that pushed westward. In addition to being physically displaced, eastern Indian groups were active participants in the fur trade and benefited from it economically. Iroquois and Delaware Indians ventured westward as participants in the fur trade. Cheyenne, Arapaho, and Lakota Sioux also moved westward into Colorado from the eastern Woodlands and served as middlemen in the trade. The Ute actively traded finely tanned deer hides and slaves with the Spanish in New Mexico, making them an indirect participant in the international fur trade. As Americans entered Colorado in pursuit of furs and hides, the Ute were strategically situated to participate and benefit.

In the eighteenth century, Spanish from outlying settlements of New Mexico ventured onto the Plains in pursuit of buffalo for meat and hides. These *ciboleros* were wide ranging and served as an interface with Native American groups on the Plains, with whom they traded. This acquisition of hides through hunting and trade was an economic venture tied only to the New Mexican economy and was not part of the larger fur trade of national and international scale.

Participation in the fur trade in Colorado as part of a national-scale venture by Euroamericans outside of New Mexico is first known to have taken place on the South Platte River in 1803 and 1804, when attempts by Babtiste LaLande and James Purcell were thwarted by their capture by Spanish authorities (Mehls 1984b; Mehls and Carter 1984). In 1811, a party under the direction of Manuel Lisa and led by Jean B. Champlin and Ezekiel Williams trapped the upper Arkansas River (near Leadville) in defiance of Spanish authority (Mehls 1982:17). Another party operated in this region for several years beginning in 1815, organized by Auguste Chouteau and Julius DeMun of St. Louis (Mehls 1982:17). As Americans were excluded from entry into the area of Spanish control, and with Spanish troops capturing and imprisoning American traders along Colorado's Front Range, these early fur trade operations were impeded from further development. However, with Mexican independence in 1821, Colorado and most of the rest of the West was opened to full-scale trade. In Colorado, the trade was initially directed mainly by merchants based in St. Louis. With the opening of the Santa Fe Trail, Taos and Santa Fe became principal points of departure for fur trappers heading north into Colorado and Utah. Most of these individuals seem to have worked relatively independently in comparison with the large fur trapping brigades that focused on the mountains farther north in Wyoming, Montana, Idaho, and northern Utah. As an example of a large venture, William Ashley and others began to exploit the Green River drainage system, in 1825 and established the Rocky Mountain Fur Company.

During the early 1830s, a system of centralized collection was developed by the fur companies, whereby "several times a year the trappers would gather at a pre-arranged place to exchange furs for goods and supplies, to drink and have a good time" (Mehls 1982:19). This was an adjunct to the trading post system and demonstrates the widespread intensity of beaver trapping in the Rocky Mountains and westward at the

time. The 1830s saw the establishment of trading posts in Colorado and Utah, including Bent's Fort in southeastern Colorado, Fort Davy Crockett in northwestern Colorado, and Fort Uncompahgre near the junction of the Gunnison and Uncompahgre rivers. Although these may have served as bases for Euroamerican fur trappers and hide hunters, much of their focus was on trade for hides with Native Americans. These posts capitalized on a trade that had formerly been carried out in Taos, Santa Fe, and Abiquiu, New Mexico, by Spanish and Mexican merchants, frequently at annual trade fairs. By offering a better class of goods at convenient places, the trading posts were able to capture the Native American trade, stimulating the hunting of deer, elk, and buffalo and trapping of fur-bearing animals by Native Americans to a degree not previously seen. Changes in fashion styles of hats by 1840 reduced the demand for beaver fur, causing that portion of the fur and hide trade to collapse. Some places, like Bent's Fort, were able to survive the collapse by focusing on trade in buffalo hides. Bent's Fort was also able to capitalize on its key location along the Santa Fe Trail. It appears that several posts along the Front Range may have been established explicitly to capitalize in trade in buffalo hides and focused largely on trade with Indians, though they may have also served as bases for Euroamerican hunters. As Colorado began to be settled following the gold rush in 1859, conflicts with Plains Indian groups escalated, eliminating them from the hide trade. The Ute continued their participation, trading buffalo hides from extended hunting trips onto the Plains and finely tanned deer hides with merchants in burgeoning towns, particularly Denver. The final demise of the hide trade came with the almost complete extirpation of the buffalo from the Plains in the middle 1870s. By that time, the economic benefit to merchants of the hide trade had passed, and trade with Utes in Colorado's towns and cities was no longer considered important or desirable.

## **MANIFESTATION OF THE THEME IN COLORADO'S ARCHAEOLOGICAL RECORD**

### **Archaeological Characteristics That Make Sites in the Theme Identifiable**

Writing in 1984, Mehls (1984a:3) noted that in the Rocky Mountains of Colorado "no known cultural resources directly attributed to the fur trade or early exploration exist within the region. This is because of the transitory nature of the activities." This statement is perhaps more applicable to the rendezvous era of the fur trade for which the archaeology of the fur trade is expected to be largely object-centered. However, the archaeology of trading posts provides a framework for identifying the range of material items and goods that may be expected at smaller, less visible sites. The more common "objects" of the fur trade – such as beads and gunflints – can sometimes provide broad patterns of location and technological change that may be of relevance to an archaeological investigation, providing a useful gauge for dating sites using historic records. On the other hand, dating specific types of European-made objects requires that they are found in archaeological contexts, because ordinary manufactured products often have little information in the literature (Witthoff 1965:55). In this discussion, the more common objects associated with the fur trade are identified, followed by a discussion of the archaeology of the site-oriented structures and features associated with fur trader camps and posts.

Traps and trapping equipment provide the most direct evidence of fur trade activity; however, complete specimens are seldom found. The design and use of the beaver trap remained relatively uniform from the 1750s through the 1850s (Russell 1967:121). A general description of beaver trapping and a normal day in the life of trapper is provided by Russell:

The trapper having found the "sign" of fresh activities of beaver, concentrated his trap-setting along the waters where the animals were "using." When a likely spot was found, a bed for the trap was prepared underwater in such a manner as to assure that the pan and spread jaws of the trap would be about four inches below the surface of the water. (1967:121,147)

Six traps generally made up the complement for a fur trapper and his helper. It usually took a full day to find suitable places to prepare the set, to make the rounds of the traps, to skin the captured animals, and to flesh the pelts. If the trapper was working out of a large central camp in association with numerous trappers, clerks, cooks, and handymen organized under a company system, he could turn over his freshly skinned pelts to a camp employee for stretching and drying. If the party was small, the work of stretching pelts was done

by the same men who caught the animals. In either case, the skinning was done in the vicinity where the animal was trapped, and unless meat was in short supply, only the pelt and perhaps the castoreum glands and the tail were carried to camp. Roasted beaver tails were one of delicacies of the trapper's mess, and the entire carcass was decidedly edible, if needed.

The above description alludes to the nature of a trapper's camp, distinguishing between camps that are associated with large parties and those organized on an individual or small group basis. For the latter, an 1832 account provides an insight into the camp's nature and organization.

Their encampment was decked with hundreds of beaver skins, now drying in the sun. These valuable skins are always stretched in willow hoops, varying from eighteen inches to three feet in diameter, according to the size of the skins, and have a reddish appearance on the flesh side, which is exposed to the sun. Our camps are always dotted with these red circles in the trapping season when the weather is fair. There were several hundred skins folded and tied up in packs laying about their encampment (Western Literary Messenger, June 28, 1843:406, as quoted in Russell 1967:154).

Another essential item of the trapper's camp inventory was the fur press, whereby accumulated pelts were pressed into compact bundles to ease handling. Again, a distinction is made between types based on whether or not the camp or site was far from a trading post. At backcountry camps, improvised pole and chain devices were employed. At trading posts, two types of presses were used: the wedge press and the screw press. A wedge press was usually constructed from locally available materials and worked by pressure exerted upon "the stack of some sixty pelts to be compressed by the simple process of driving wood wedges between the movable slabs placed above the furs within the frame of the press" (Russell 1967:159). The screw press was a cumbersome device constructed in factories, employing the same principal of operation that characterized fruit and wine presses of Europe (Russell 1967:158).

Guns and pistols were also major objects of the fur trade. They were kept on hand for hunting and protection by Euroamericans and were important items for trade with Native Americans who used them for the same purposes. Guns produced specifically for the Indian trade were initially unrifled muzzle-loading muskets that were difficult to load, inaccurate, and cumbersome to use by an individual on horseback. Rifled firearms were highly desired. Firearms became more technologically advanced during and soon following the Civil War. Revolvers and breach-loading rifles using self-contained cartridges and the advent of repeating rifles changed the complexion of hunting, self-defense, and warfare. The fur and hide trade enabled the acquisition of these innovative firearms by Native Americans, who used them quite effectively. Improvements in firearms, particularly rifled barrels and self-contained cartridges, made the harvesting of animals more efficient. This efficiency had the greatest impact on the hide trade because more accurate and high-powered rifles made it possible to kill large numbers of animals very quickly. It is certainly not a coincidence that the advent of centerfire cartridges in 1873 immediately preceded the almost complete removal of buffalo from the Plains.

Metal objects – arrow points, knives, tomahawks, and axes – were important objects of trade between fur traders and Native Americans. East Coast firms manufactured thousands of steel arrowheads, which were distributed to traders and then to Native American groups (Hanson 1975:26). In this regard, the role of blacksmiths is integral, as Russell (Russell 1967:311) writes:

Smiths were as important to the Western trade as they were in the East. Their craftsmanship was a vital part of the function of established posts, and more than a few blacksmiths were practiced in the business of moving forge, anvil, and their stock-in-trade along with camps of the nomadic people for whom they worked. Some record of their industry appears in the invoices of raw materials transported to the Western wilds, and in a few instances they are identified in the reports of the partners and clerks of the British companies, in the journals of the factors and commanders of the American posts, and in the writings of the few men of letters among the mountain men who scoured the stream courses of the entire West. The enduring products of their trade continue to turn up on the sites of their industry and throughout the expanse of wild land over which both Indian and white trapper hunted the beaver.

The meaning of European-manufactured items in a Native American context should be carefully considered. Early in the contact period, European goods may have been acquired through indirect means, reaching the individual or group through secondary trade. Consequently, the presence of European objects in a Native American context does not necessarily equate to active engagement on the part of a specific group or community with aspects of the fur trade. As the fur trade expanded, the direct connection with fur trade activities is more likely. The cultural consequences of Native Americans accepting European goods are also rather complex and probably variable from group to group. In Colorado, the social impact and meaning of European goods in Native American households has yet to be interpreted very deeply. The commonly held view that trade goods were sought out and adopted, and that they replaced native equivalents, is likely too simple of an explanation (Smith 1972:178):

It seems probable that most such new articles and commodities would have been accepted and adopted only after a period of trial and adjustment, unless in the native view they were clearly more effective than native equivalents. Firearms and metal knives, axes, awls, and the like seemingly would have belonged in the latter category.

Mechanisms for adoption and integration of Euroamerican goods into Native American culture are explained quite well by Rogers (Rogers 1990) in his study of the Arikara. Objects obtained directly or indirectly by the Arikara were initially perceived to have magical qualities, with the expectation that power represented by the items could be acquired by them through ownership. With further experience with Euroamericans, the Indians began to regard the items as the source of trouble or disaster, frequently having disease connected with them. In addition, the Arikara began to view Euroamericans with disdain and regarded their trade items with similar low esteem. Gradually, trade items became integrated into their material culture and were relied upon as necessities. In some instances, conservative elements within the group attempted to return to a more traditional way of life, rejecting manufactured items. Usually, this was short lived, with a return to reliance on manufactured goods for everyday use without any symbolic meaning. It is not known whether a comparable pattern of acquisition of trade goods was at work among the Native American groups in Colorado. However, the fur trade was the period of time when abundant and varied manufactured goods would have become available to Native American groups and the time when substantial culture change was probably initiated. It should be remembered that the Native American groups in Colorado were active participants in the fur and hide trade and not passive victims of it. Acquisition, acceptance, and use of European-manufactured goods probably varied from group to group in terms of practical and innovative application, symbols of wealth and status, and, perhaps, ritual importance.

The archaeology of the more visible sites associated with fur trading posts provide a more holistic framework for linking sites, material culture, and characteristics of the fur trade history. For instance, the investigation of Bent's Old Fort, conducted by the Colorado Historical Society and the National Park Service, provides a detailed account of the organization of the post, including the associated features and material culture. The archaeological work conducted between 1963 and 1966 by the National Park Service established the function of many rooms and was able to identify and classify numerous artifacts from the 1830s and 1840s. The work was also able to confirm and clarify historical accounts of the fort, such as the type of fur press that was in the center of the fort's plaza. The archaeological investigations also revealed a complex history of evolution at the site, summarized by Mattes:

The site presented immense technical difficulties to the archaeologist, for here was a site with several occupational levels. True, the main features were of the Bent period, 1833 to 1849, but there was evidence of earlier occupation by both Indians and whites, then occupation by a stage company, later uses a corral by various early ranchers, and then the depredations of scores of souvenir hunters over the decades. (1977:84)

The repeated use of the location, both before and after Bent's Old Fort was there, demonstrates its strategic position along established trails and trade routes.

## Representation of Site Types in the State Database

### Sites within the Theme Recorded in the State

Fewer than 20 sites within the fur and hide trade theme have been recorded in the state. None of these sites are fur trade camps, though trappers and traders were active throughout the state. This scarcity of recorded fur trade camps is likely because the camps were of short duration, occupied by small numbers of individuals with few material goods, and probably resulted in little alteration of the landscape. It may not be possible to differentiate sites occupied by Native Americans participating in the fur trade from Native American sites with other activity focuses, and it may be difficult to differentiate sites occupied by fur traders from contemporaneous Native American sites. Trading posts are more easily distinguished because of their age, intensity of use that included rather permanent structures, and descriptive historical information. The four most prominent sites from the period are Bent's Old Fort, Fort Vasquez, El Pueblo, and Fort Davy Crockett. Many of the fur and hide trade "sites" are represented by inscriptions or memorials, such as the Fort Lupton monument in Weld County. In some instances, the fur trappers and traders left visible markers of their wanderings, such as the Denis Julien inscription in Dinosaur National Monument (5MF2357.2), where the initials "DJ" and the year 1838 are inscribed on a canyon wall.

The archaeological investigation of fur and hide trade sites in Colorado has been greater than for some of the other historic themes but has still been quite limited. The excavations at Bent's Old Fort have been quite productive and important to the reconstruction and interpretation of the fort for public visitation (Moore 1973). Additional problem-oriented archaeology could be productively carried out at the site. Considerable archaeological work was conducted at Fort Vasquez, near Platteville, in 1963, 1966-1967, and 1968-1970; the fort was reconstructed in 1935 and 1936 over the remains of the fort using the original adobe. The site was listed on the National Register of Historic Places in 1970, and the listing was amended in 2001 (Baker 1964; Hoskinson 2000; Judge 1971). The archaeological values of the site were specified in the nomination because the archaeological data recovery potential of the site is far from exhausted. Work at El Pueblo has been productive in identifying trading post deposits of the original settlement beneath subsequent city development. Considerably more work will be required before a complete picture of the settlement can be had, which will be rather difficult, considering the overlying built environment (Buckles 1995). A small amount of work has also been conducted at Fort Davy Crockett, though the actual physical remains of the fort have yet to be discovered. Work at this site can be expected to be of considerable importance as it is the only fur trade-theme site found to date on the west side of the Rocky Mountains in Colorado and its focus was probably somewhat different than posts along the Front Range (Eddy 1982; Pfertsh 2003b). Fort Davy Crockett is on the floodplain of the Green River in Browns Park. It was established in the early 1830s and remained in operation into the early 1840s. The site was discovered in 1975 and listed on the National Register of Historic Places in 1977. Fluctuating water levels in the Green River have eroded buried deposits of the site. Bank stabilization required the mitigation of a 3-by-50-m area of the site by Science Applications, Inc., in 1980 (Eddy 1982). Recovered were trade beads, bone, gun flints, clay pipe fragments, musket balls, melted lead, percussion caps, gun parts, stone tools, and a small quantity of bottle glass. Despite the mitigation, the full extent of the buried site remained unknown. Systematic augering of the site by Alpine Archaeological Consultants, Inc., suggested that the site was considerably larger than previously thought (Pfertsh 2003b). Two test excavation units, placed where auger holes indicated particularly productive deposits, yielded artifacts and materials that suggest quite dense cultural materials, including burned adobe suggestive of a structure. Artifacts recovered from one of the test units included 113 pieces of bone, nine seed beads, one green glass fragment, one metal fragment, and one gun flint. The other excavation unit yielded 187 pieces of bone (most burned and including a polished fleshing tool), 51 pieces of burned adobe, and 13 fragments of an iron cone tinkler.

Other examples of archaeologically investigated fur and hide trade-era sites are few, not within the state of Colorado and not particularly well documented. Several fur trading posts were excavated in the 1950s along the Missouri River prior to major reservoir construction there (Mattes 1960; Miller 1960; Mills 1960; Smith 1960a, b; Woolworth and Wood 1960). These provide some insight into the types of artifacts encountered from fur trading posts of the era and their context.

## **Adequacy of Recordation and Evaluation**

The small number of fur and hide trade-era sites recorded in the state make it difficult to speak to the adequacy to which sites of this type are being recorded. The primary sites that have been recorded, Bent's Old Fort, Fort Vasquez, El Pueblo, and Fort Davy Crockett, have been extensively documented. Considerable work remains to properly characterize Fort Davy Crockett and El Pueblo because they are almost entirely buried. All four sites are listed on the National Register of Historic Places with the potential of archaeological deposits to add important information to our understanding of history as an important attribute of each. The perceived importance of fur trade-era sites is reflected by these four sites being listed on the National Register. In addition, that their archaeological values have recognized significance is also important. Other less well known, smaller posts remain to be identified or assessed. Furthermore, small or short duration sites from the period, such as camps of the actual participants in trapping and hunting, remain relatively little known and may be difficult to detect, be easily overlooked, and troublesome to properly identify.

The early time frame, small number of posts, and almost complete absence of short-term camps from the fur and hide trade period lends immediate significance to any fur trapping era site, because of the potential it will hold in helping to understand the broader context of the theme in Colorado history. Several of the recorded sites seem to demonstrate problems in identification and evaluation. Fort LeDuc (also known as Fort Ledoux, Buzzards Roost, Maurice's Fort, and the Crows Nest) has been recorded in Fremont County (5FN860) and is considered a significant property; however, a recording of Fort LeDuc (Buzzard's Roost) was made in Custer County (5CR11) in 1974 and should be verified for accuracy. Fort Jackson (Sarpy's Fort) in Weld County (5WL816) has been identified but was recommended as insignificant by its recorders in 1982; this evaluation may warrant reconsideration. Fort Gerry in Weld County (5WL828) has been recorded, but the period noted for its occupation was 1850-1859 and its condition was described as destroyed; still, it was recommended as a significant site. Clearly, the site should be revisited to further assess its condition relative to its archaeological potential, and its period of occupation should be investigated, because it likely began operations in the 1830s. Site 5LR710, French Trapper's Cabin, on Livermore Mountain in Larimer County, was reportedly built prior to 1859, and listed as requiring more data. The significance of a site related to French fur trapping in Colorado prior to 1859 clearly suggests significance under the theme. Also troubling about the recordation is an apparent lack of consideration as to whether archaeological materials may be present, which should be the case at any habitation site. The database clearly shows that the recording of these few fur and hide trade-era sites is of questionable adequacy. It is also unclear whether archaeology is being considered in all instances. In addition to the sites described above, two segments of the Taos Trail have been recorded and are considered to be significant (5HF935 and 5HF935.1). Three other trappers' trails also appear in the OAHF database: 5AH215, 5AM143, and 5DV975. These were all recorded in 1982 and were all recommended as insignificant. It is unclear to what degree these trails were actually investigated and whether they have actual physical integrity. Still, the evaluations of insignificance seem incongruous because of the scarcity of the resource type alone.

## **Potential for Sites within the Theme to Exist and Be Recognizable**

In general, only a very few trading posts (forts) have been reasonably well documented, with the majority unverified and undocumented. Some sites, such as Fort Uncompahgre and Fort Lupton, have defied identification, and smaller sites of the fur and hide trade, such as campsites and trails, are seldom encountered. The limited scale and relative brevity of the fur and hide trade period has resulted in low archaeological visibility and limited potential for site identification at the less intensively occupied sites, such as camps. Although fur and hide trade posts have been demonstrated to have sufficient archaeological deposition to be recognized, it is possible that fur trade camps will never be very well documented because of their ephemeral nature and low density of associated artifacts. An interesting and rather confounding problem may be in differentiating fur trade sites occupied by Euroamericans from Native American sites of the same time period, particularly considering the active participation that Native Americans took in the fur trade. In addition, fur trade sites will likely be small in size, situated along watercourses that may have either buried or eroded the remains, and are likely to be obscured by vegetation.



## **Interrelatedness of Theme with Other Topics or Themes**

A clear connection exists between fur and hide trade-era sites and Native American sites from the 1810s to middle 1870s time period. Fur trade sites are also interrelated with exploration and settlement, because initial trappers were frequently the first Euroamericans to enter areas and their knowledge enabled later entries for government surveys and exploration expeditions, mineral exploration, or settlement.

## **EVALUATIONS OF SIGNIFICANCE**

Fur and hide trade-era sites are likely to all be archaeological in nature and considered for significance primarily under Criteria A and D. The importance of individuals involved in the fur trade to the history of Colorado indicates that significance under Criterion B may be applicable in certain instances. Where a fur trade post is delineated archaeologically, it is possible that the remains may be ascribed significance under Criterion C if the remains can be said to form a recognizable and readily interpretable complex typical of the period.

## **Relationship to the National Register of Historic Places Criteria**

Fur and hide trade-era sites are important for their role in enhancing American interests and claims in the region, and contributing to subsequent developments, such as the gold rush and overall settlement of Colorado. As a consequence of the low visibility and low potential for finding fur and hide trade sites in any state of preservation, it is tempting to suggest that any site that can be reliably attributed to this theme is of significance. The more permanent archaeological manifestations relating to this theme, such as Bent's Old Fort, Fort Vasquez, El Pueblo, and Fort Davy Crockett, are already registered as National Register properties. Sites have potential to be evaluated as significant under any combination of the four National Register criteria.

### **Areas of Significance**

Fur trade sites may be significant for their association with commerce and exploration, with commerce likely being the most applicable area of significance.

### **Periods of Significance**

In Colorado, the period of significance for the fur trade is the 1800s to early 1840s, with the 1820s and 1830s being the predominant period of the activity. The trade in buffalo hides continued into the middle 1870s.

### **Integrity**

Any sites recognizable as belonging to the fur and hide trade theme may be considered important if even the most basic integrity of deposits remains. That is, even a surficial scatter of artifacts may be considered important simply because the scatter has integrity of location, materials, and association. Ideally, camps will also have integrity of design, in that the layout may be discerned and specific activity areas can be detected. Integrity of design will be more likely to exist at fur trade posts where more permanent improvements were made. At both camps and posts, integrity of setting and feeling will be less important than the materials and their distribution relative to site features. Integrity of workmanship is the least likely area of integrity to be retained at fur trade sites and is the least important.

## **RESEARCH NEEDS**

### **Quality of Recovered Archaeological Data Relevant to the Theme in Colorado**

The archaeological work conducted at Bent's Old Fort, Fort Vasquez, and Fort Davy Crockett add considerably to what we know about the fur trade in Colorado, though the Fort Davy Crockett work has been quite limited and points to excellent potential for further work at the site. In recent years, considerable work has been conducted to identify the remains of El Pueblo, the original occupation at current Pueblo, Colorado, when it served as a trading post from 1842-1854. Other than at these sites, no archaeological data pertinent to the fur trade exists.

### **Potential for Good Quality Archaeological Data to Exist for the Theme at Sites in Colorado**

Additional archaeological deposits of importance are certain to exist at Bent's Old Fort, Fort Vasquez, El Pueblo, and Fort St. Vrain, and the recent testing at Fort Davy Crockett has demonstrated that excellent archaeological research potential exists there. Archaeological research, primarily for interpretive exhibits and reconstruction, has been a focus of the work at Bent's Old Fort and Fort Vasquez. Good archaeological data recovery potential can be expected at the several small fur and hide trading posts known to have been established in the state and at an unknown number of fur trading camps that are also certainly present. Simply because of the likely ephemeral nature of the camps, most data about the period are expected to come from trading posts, but camps can potentially add considerable data, particularly if multiple camps come to the fore. The routes of trails used during the fur trade are generally known and, as Husband (1984) points out, knowledge of travel routes used during the fur trade period may alert cultural resource researchers to the potential for sites relating to the fur trade in the vicinity.

### **Known or Potential Sites within the Theme in Colorado That Should Be Sought, Reexamined, or Reevaluated**

Sites from the initial period of the fur trade are noticeably absent from the archaeological database. Some possible sites that could be attributable to either the fur trade or early exploration are Jacob Fowler's Lookout at Pueblo, dating to 1821 and 1822; Fort Talpa, also known as Spanish Fort, reportedly constructed for protection from Indians in 1820 near present Farista in Huerfano County; and Spanish Fort (Fort Sangre de Cristo), built by the Spanish at the foot of Sangre de Cristo Pass in 1819 to discourage American encroachment (Scott 1999). Other fur and hide trade sites are considered below:

- Fort Davy Crockett (5MF605; 1837-1840) is imperiled by erosion by the Green River and should be made the focus of archaeological investigations in a timely manner. Considerable effort has been expended in finding Fort Uncompahgre (1830-1844). At present, it appears that flooding and the changing course of the Gunnison River or road construction has obliterated the site.
- The location of Fort St. Vrain (5WL814; Fort George or Fort Lookout; 1837-1845) in Platteville is known, but the site was graded and leveled in 1951. Archaeological testing took place there in 1967, and additional archaeological work may be worthwhile. Currently, the historical marker placed in 1911 to commemorate the site is listed on the State Register of Historic Properties, but the site is not comparably designated (Malone 1967; Smith 2001).
- Archaeological work conducted at various times at Fort Lupton (5WL1823; Fort Lancaster [1836-1845]) has yielded no evidence of the fur trade era at its purported location, so the fort has either been destroyed or is situated elsewhere (Carrillo and Mehls 1992).
- Fort Jackson (5WL816; Sarpy's Fort [1837-1838]) in Weld County has been identified but was recommended as insignificant by its recorders in 1982; this evaluation may warrant reconsideration.
- Bent's New Fort (5BN394; 1853-1867) is at a known location, but the potential for it to contribute to our understanding of the fur and hide trade era is not currently known.
- Hardscrabble Plaza (5FN17) in Fremont County was recorded in 1974 and recommended as an insignificant property; it should be revisited and its archaeological values examined.

- Old Julesburg (42WS26; 1850s-1860s), on the South Platte River near Lodge Pole Creek in Sedgwick County, was recorded in 1974; it should be revisited and fully documented, including an assessment of archaeological values.
- Fort Gerry in Weld County (5WL828) has been recorded, but the period noted for its occupation was 1850-1859 and its condition was described as destroyed; still, it was recommended as a significant site. Clearly, the site's archaeological potential should be further considered, and its period of occupation should be reassessed because it likely began operation in the 1830s and it had two locations. From the 1830s to 1840, the fort was on the South Platte River at the junction of Crow Creek, and from 1840 to 1854, it was moved to the other side of the river opposite Crow Creek (Scott 1999).
- Fort LeDuc (5FN860; also known as Fort Maurice Ledoux, Fort Maurice LeDuc Fort Ledoux, Buzzards Roost, Maurice's Fort, and the Crows Nest; 1839-1845) has been recorded in Fremont County and is considered a significant property; however, a recording of Fort LeDuc (5CR11; Buzzard's Roost) was made in Custer County in 1974 and should be verified for accuracy.
- Fort Namaqua (5LR814; 1858-1862) in Larimer County was incompletely recorded in 1982, and it is unlikely that archaeological values have been considered adequately.
- Remains of other posts on the eastern Plains should be sought and assessed for archaeological potential, including Bent's Picket Post Stockade (1829) on the Arkansas River near Pueblo; John Gantt's forts (Fort Gantt [1831-1834] and Fort Cass [1834-1835]) on the Purgatory and Arkansas rivers in Bent and Pueblo counties; Fort Convenience (1832-1834) in Adams County; Fort Leche (Milk Fort, Peebles Fort, or Fort Independence; 1839) west of Bent's Old Fort in Otero County; Fort Fraeb (1842) in Routt County; Wilson Houses (1843) at Big Timbers near Bent's Old Fort in Otero County; Bent's Log Houses (1852) on the Arkansas River below Mud Creek in Bent County; Autobee's Ranch (Autobee's Plaza, Fort Huerfano; 1853) at the mouth of the Huerfano River in Pueblo County; and Fort Sanders (1858) near Brighton in Adams County (Scott 1999).

Two later manifestations that may be representative of the last vestiges of the hide trade are the Aguilar Trading Post (1867-1891) on the north side of the Apishapa River at Aguilar in Las Animas County and Sharps Trading Fort (Buzzard Roost, Sharps Post; 1870) near Malachite in Huerfano County (Scott 1999).

## **Mining and Mineral Processing**

### **DESCRIPTION AND BACKGROUND**

The mining industry is of obvious importance to the history of Colorado, because it structures patterns of growth, settlement, and land use, as well as political and social development. Given the complexity of the theme, this section emphasizes the identification of common or recurrent patterns and potential areas of significance in the industry. For instance, fluidity and evolution within the industry at the local and regional level is a recurring topic in assessing the adaptability of the industry. For the archaeologist, tracing the somewhat frantic history of mining is perhaps most evident in the rapid changes and developments in mining technology. A variety of methods were developed and applied to deal with ores of different natures; varying or modified processes were used between mines and even between ore bodies within a single mine. Mills were built, modified, and rebuilt time and again as new processing techniques were adopted in an attempt to better recover more metals from available ores.

Raines (2000) summarizes the key to understanding the dynamic nature of mining technology:

New ore-processing technologies came onto the market at a very fast pace during the 1880s, 1890s, and early 1900s. The process or equipment that was on the cutting edge one day might become completely obsolete in a year. Additionally, the process that worked well with the ores from one mine might fail miserably with the ores from another. Storms made these points in 1911 when he said that "the ores of the San Juan mines were of good grade, but generally diverse and complex in character – their successful treatment required a great deal of metallurgical skill." Mill managers were constantly experimenting with both processes and equipment and making what were hoped to be improvements. More than once, however, newly introduced processes were abandoned soon after their introduction.

During these years, the major improvements made in ore processing were the invention of concentrating tables, the introduction of the process of cyanidization, and the development of froth flotation. Each was revolutionary, each solved specific problems in handling the district's ores, and each increased the efficiency of processing, not to mention increasing profits. With the introduction of each change, however, large-scale remodeling of the mill plants had to be undertaken [year and page numbers].

In this regard, the evolution of *mining technology* becomes a key theme for the evaluation of mining districts (Hardesty and Little 2000:140). For example, with the development of the cyanide process for leaching gold from low-grade ores during the mid-1890s, many old mine dumps and plants that had been largely abandoned were reprocessed, as Murray documented for the historic mining districts of Custer County:

Several small cyanide plants gave brief flurries of promotional activity in the old camps, as investors hoped they could profitably re-open the mines. In fact, most of the subsequent mineral recovery operations in the Custer County mines has been limited to the reprocessing of old mine dumps to get the last dregs of precious metal from them. (Murray 1978:81)

The documentation of innovations and inventions within the mining industry of Colorado is also of significance, with many labor-saving devices developed in the state, as Smith notes:

The first use of a power drill in the United States occurred at Silver Plume in 1868-69 in the Burleigh tunnel. The water drill was invented by Coloradan John Leyner; it not only allowed faster drilling, but more significantly, cut down rock dust, the scourge of mining. In milling and smelting, the Wilfley concentrating table, the Bolthoff-Boss pulverizer, and the "Colorado" stamp mill modernized processes. (Smith 1977:123)

Archaeological sites that demonstrate local adaptation and invention may be historically significant. Innovative adaptations, such as the Hanging Flume in western Montrose County, are significant on a state and national level. Other local inventions and adaptations may be significant, despite not being documented in the historical literature.

Additionally, tracing the historic development of mining-related *settlements* becomes significant, as Mehls notes, "This may include examples of the form of the development of towns which grew into major camps which began during this era, examples of mining consolidation, examples of various stages of development as towns became more 'permanent'." (Mehls 1984a:34)

Therefore, evaluating industrial sites and landscapes requires recognition of the relative integrity of a mining or mineral processing historic property with particular reference to the evolutionary process; including the potential for subsurface manifestations of earlier operations, the potential reuse or recycling of machinery or structures, aspects of local adaptation and invention, and the incorporation of historic documents that verify the sequential development of the particular locale, in the absence of any archaeological manifestation.

## **MANIFESTATION OF THE THEME IN COLORADO'S ARCHAEOLOGICAL RECORD**

### **Archaeological Characteristics That Make Sites in the Theme Identifiable**

In this section, a general discussion outlining the most important factors structuring mining and mineral processing archaeological sites is presented, followed by a more specific discussion that identifies the common archaeological characteristics of mining and mineral processing sites, discussed under three main headings that are common to any archaeological investigation: site layout and composition, technology, and community/settlement patterns. Some of the more common problems likely to be encountered by the archaeologist relating to preservation and formation processes are also discussed.

Mining and mineral processing archaeological sites are categorized in terms of the principal material or metal being extracted, representing the most significant factor structuring similarities and differences in the

various archaeological sites subsumed under this general theme. However, certain common features are identified that distinguish historic mining and mineral processing sites from those of other industrial themes. Perhaps the most important consideration in identifying and assessing a mining and mineral processing site is to recognize that most operations underwent an evolutionary process from exploration, to testing, to the development of a production plant, and eventual abandonment. These stages took place for all mining, whether it was for placer gold, precious or base metals in hard-rock, coal, or uranium. The various stages of evolution relate not only to the richness of the deposit at the particular locale but also to socioeconomic factors, such as the availability of a workforce or necessary capital, and the environmental setting.

In some cases, evolutionary development was recognized by the engineers themselves and, consequently, many twentieth-century industrial buildings and associated infrastructure were designed and built with a capacity for further expansion, whether the full potential was realized or not (Twitty 2002). For example, in Bridal Veil Basin above Telluride, Hodges (Hodges 1899); as cited by Henderson, described the establishment of the mining machinery and infrastructure prior to any real output in production:

This section can almost be considered new territory, and, although no ore has been shipped from the basin, yet a mill has been built consisting of 10 stamps....Another property in this basin, which has a large vein of refractory ore, has erected a concentration mill of 40 tons daily capacity, but so arranged that its output can easily be doubled. (Henderson 1926:219-220)

Typical mining cycles of occupation, abandonment, and reoccupation result in situations where earlier components tend to be partly or completely destroyed by later developments, or site components become separated horizontally, with mining camps separated into geographical clusters, each representing a different time period or component (Hardesty 1988:12). In an archaeological framework, particular configurations of structural features, machinery, and associated artifacts, provide information relevant to identifying the stage of operation the archaeological data represents, the prevailing socioeconomic situation, and also the effects of environmental barriers, in terms of the relative degree of accessibility or feasibility for particular levels of operation.

At placer mines, the process of mining may have removed the earth where an earlier mining operation had made physical improvements. Conversely, the surface operations of belowground mines may bury earlier mining components or evidence of earlier mining on adjoining claims. The presence of wooden structural foundations for machinery, such as hoists, boilers, blowers, and air compressors, are indicative of economical or temporary installations typical of small-scale (or early stage) operations. Structural foundations constructed with stone or brick masonry (prior to the 1890s) or concrete indicate a more confident investment in a sustained or permanent production plant. Wheelbarrows on planks or strap rail systems, as another example, provided the cheapest form of transportation of mining debris, whereas ore cars were used for larger or more economically viable operations. Additionally, regions characterized by particularly difficult terrain may have had limitations, to some extent, on the types of machinery and other equipment feasibly transported there to set up an operation. Coal deposits were prolific and relatively uniform enough that deposits within accessible terrain were sufficient to meet industrial and domestic needs. Precious metals, in contrast, were extremely variable and sometimes highly restricted in locality, making access to transportation less of a factor about whether attempts at development were made or not. Because transportation was frequently not readily accessible to precious metal mines with valuable ores, creative measures were employed to bring ores to market at a profit. Aerial tramways were one solution used to reduce transportation costs. Another was beneficiation of ore through separation and concentration. Construction of a concentration mill was also a way to make low-grade ore valuable enough to ship (Sagstetter and Sagstetter 1998:54).

### **Mining Site Layout and Composition**

Belowground mining operations of all sorts can be classified into stages of operation with specific characteristics. Recurrent patterns are usually evident in the layout and composition of typical mining and mineral processing sites. Indeed, basic patterns in mine site and camp layout were adhered to from locale to locale (Twitty 2002:35), and this repetition is manifest in the regional archaeological record. The most

common feature of early mining sites is the prospect adit or pit, dug into the ground or hillside to examine the mineral body. Small-scale operations that went beyond the simple exploration pit stage tended to erect simple, inexpensive facilities, and associated equipment was used that was both inexpensive and somewhat portable. Wooden foundations were constructed because of low cost and ease of erection and “usually consisted of cribbing, a framed cube, or a frame fastened to a pallet, all of which were assembled with bolts and iron pins, and buried in waste rock ballast for stability” (Twitty 2002:29). Such facilities may also include a waste dump area, generally directly out and downslope of the shaft or adit portal (usually forming a semicircular pattern); simple structures, usually constructed from locally available materials (with nearby quarry faces and open pits often providing evidence for past extraction of building material); and crude blacksmith shops, usually situated near the adit portal to minimize handling heavy iron items and to enable economical mining below ground (Smith 1994:108). Slope or drift mines for coal were similar in structure but may have extended farther along a vein or exposure. Archaeological manifestations of mine blacksmith shops include a scatter of anthracite coal or coke, forge clinker, forge-cut iron scraps, the blades of upset drill-steels, a brick or whetstone, and occasionally an anvil block. Sometimes simple ventilation systems were erected at small-scale prospect adit sites, consisting of forge bellows at the mouths of adits utilizing stovepipes or canvas tubing to duct air into the workings, though these systems are rarely identifiable in the archaeological remains.

In contrast, larger scale plants usually included a transportation system, storehouses, a new blacksmith shop, an ore bin, and, during later times, such features as ventilation systems, air compressors, and a power source. In these cases, associated surface structures often help identify the mineral being extracted and may provide evidence of group or worker composition, if residences, bunkhouses, or mess halls (with associated artifacts) can be delineated. Steam boilers are another conspicuous feature of mining and mineral processing sites, and their form varies with the type of steam power needs of an operation and also the temporal association. Cinder piles may aid in the identification of a steam plant, even when the equipment has been removed.

Twitty (2002) recognizes several types of historic mine sites based on a dichotomy between temporary and more permanent (or production-level) features. The distinctions between temporary and permanent forms of mining operations broadly correspond to the fundamental differences between placer mining and hard-rock mining for precious metal mining, with similar distinctions for the discovery and belowground exploitation of other miners, including coal. Coal does not require reduction and beneficiation in the same way as metal ores. Mining techniques and the need for ventilation is similar, but the need for efficient transportation and temporary storage of large quantities of mined material was greater. In addition, different facilities may be found at coal mining sites that would not be expected at metal-mining sites, including screens for size sorting and coal-washing facilities. The various historic mine types under this scheme are listed in Table 23, showing the expected structural features for each type, the relative size of waste dump areas, and the relative density and diversity of associated artifact assemblages, in addition to a basic socioeconomic interpretation and a common date range based on these archaeological manifestations. This archaeological matrix is presented to provide a means of interpreting the array of archaeological features at a specific site under investigation in a standardized manner. What is important to note here is that this matrix allows recognition of broader contexts as well as anomalies; both of which, through analysis, may provide added strength to a significance statement for a particular site. For instance, the interpretation of a site will usually be based on its degree of conformity with Composition (Column 2) and will provide a means of classifying a site from one of the categories of Scale (Column 1). Then, a site’s degree of conformity with Socioeconomic Interpretation and Common Date Range (Columns 3 and 4) will provide a basis for further investigation to determine why or why not a site fits into its expected temporal and economic context, as discussed below.

Individual or small group sites represented by isolated features or artifacts that relate directly to placer mining activity or initial hard—rock or coal prospects are expected in surrounding areas of historic mining communities, especially boomtowns that commonly witnessed the influx of thousands of prospectors who were both concentrated and dispersed in various regions of the state. For example, with the discovery of gold and subsequent rise of the town of Gold Hill in Boulder County, in 1859, hundreds of prospectors arrived

within a year, though most of the established mines were deserted by 1861, with only 50 people left in the entire mining district (Southworth 1999:53). These sites are expected to be ephemeral, largely because of factors relating to “boom-bust cycles” characteristic of early western American industry. As listed in Table 24, diagnostic artifacts associated with such sites include picks, shovels, gold pans, and simple sluices, rockers, long toms, and arrastras.

**Table 23.** Archaeological matrix of mining and mineral processing site types, associated features, and socioeconomic interpretation.

Scale	Composition	Socioeconomic Interpretation		Common Date Range
Individual/ small group	Isolated features, mining-related artifacts, small camps, pits	Individual or small group informal prospecting.		1859-1870; 1929-1940
Primitive, temporary	Camps or one building Small waste rock dump Sparse artifact assemblage	Outfits that had poor funding, little or no investor confidence, limited underground workings, and lack of economic ore.		1859-1870
		<b>Well-Developed Mining Districts</b>	<b>Poorly Developed Mining Districts</b>	
Simple, temporary	1 or 2 buildings, possible hoisting system, modest waste rock dump, and a moderately dense artifact assemblage.	Sites represent deep prospecting backed by restricted financing that generally failed due to lack of ore.	Indicative of mining companies of modest capital reserves, optimistic investors, and minor ore deposits, though high costs enforced simple surface plants.	1870-1900
			Also coal mines serving local demand.	1870-1940
Temporary, with some production-class components	1-2 buildings with a shop or machinery, substantial waste rock dump (125 by 125 ft.), and a broad and dense artifact assemblage.	Deep, unsuccessful prospects, or poorly financed attempts to extract ore.	Represents modest financing, confident investors, extraction of some ore, and operation of modest duration.	1880-1910
Mixed temporary/ production-class components	Well-appointed shop, evidence of machinery, perhaps an ore bin, a substantial waste rock dump, and broad and dense artifact assemblage.	Deep, unsuccessful prospects backed by substantial financing, or run by a marginally profitable operation with limited financing.	Higher level of capital and productivity using mechanization to increase the tonnage or rock hauled from the mine.	1880-1920
Light production-class facilities	Well-equipped shops, small air compressor, steam boiler, a ventilation system, and an ore bin, and a large waste rock dump area (175 by 175 ft.). Artifact assemblage tends to be moderate, and the remains usually include boiler clinker and shop refuse dumps, reflecting an operation of moderate duration.	Confirm expenditure of capital, modest investor confidence, and minor ore production.	Represents sound investor confidence, an earnest attempt at maximizing ore production, and modest profitability.	1880-1920
Developed, mechanized	Production-class facilities, foundations for air compressors and boilers, ore storage facilities, distinct shop and boiler clinker dumps, huge waste rock dump areas (225 by 225 ft.). Artifact densities are typically moderate to high and assemblage includes a variety of machine-related items, reflecting long-term, intense activity.	Sound investor confidence in heavily financed attempt at maximizing ore production, and an operation that endured for years.	Represents a greater degree of capital expenditure and investor confidence than mines of similar magnitude in prominent mining districts.	1890-1950

**Table 24.** Potential mining technologies expected at various mining-related archaeological sites.

Type	Sites	Structures	Machinery/tools
Stone quarrying	Quarries, dumps, pits, processing plants, camps, towns.	Finishing mill, powder and tool sheds, employee housing, blacksmith shop, tram shed, crushing plant, housing	Power and hand drills, augers, channelers, crushers, wire saws, circular saws, planers, rubbing beds, guillotines, lathes, tramways, cranes
Cement	Plant complex, quarries	Cement mills, storage bins, cement silos, elevators, offices, tanks, stacks	Crushers, hammer mills, tube mills, ball mills, conveyor belts, rotary kilns, clinker coolers, boilers, vibrating screens
Smelting	Plant complex, slag dumps	Smelting plants, sheds, offices, mills, smokestacks, housing	Hearths, rock crushers, blast furnaces, reverberatories, concentrating tables, chemical and treatment vats
Coal	Adits, shafts, air shafts, waste rock, ore bins, camps, towns	Company houses/stores/offices, head frames, hoist houses, coal tipples, coal washeries, beehive coke ovens, by-product ovens, compressor or ventilation house, tramways (surface and aerial)	Drills, coal-cutting machines, conveyor belts, coal loaders, mine locomotives, mine cars
Uranium	Adits, shafts, air shafts, ore bins, waste rock and tailings piles, camps, towns, milling plants	Hoist house, trestle, bins, mills, tool shed, tram house, blacksmith or machine repair shops, compressor or ventilation house, housing	Drills, mine cars, ore crushers, roasting furnaces, leaching tanks
Placer mining	Camps, pits	Housing	Gold pans, rockers, long toms, sluice box, ground sluices, water supply ditches, wooden and metal flumes, metal pipes, boom dams, penstocks, canvas hose, Little Giant hydraulic nozzles, hydraulic elevators, bucket gold dredges
Industrial Mining	Adits, shafts, air shafts, ore bins, waste rock and tailings piles, milling plants, tramways, towns	Assay office, boardinghouse, boiler/boiler house, head frame, mill, mine, shaft house/tower, stamp mill, smelter, tram, blast plant, roaster, railroad	Hand tools, miner's lamps, pumps, siphons, fans, bellows, drills, hoists, compressors, steam engines or electric motors, crushers, milling equipment, ore cars, rail, tramway equipment

Primitive, temporary mining historic sites are also scattered throughout the state, such as the small historic settlement of Dumont (five miles west of Idaho Springs). The settlement was established by John M. Dumont of New York in 1859, hiring “down-on-their-luck” miners and paying them with groceries purchased on credit (Southworth 1999:32). This outfit is a good example of mining with poor funding, little or no investor confidence, limited underground workings, and a lack of economic ore. The settlement was originally called Mill City after the ore-crushing arrastras in operation there (Southworth 1999:32). For simple, temporary mining sites, one example is the historic mining district of Turret, in Chaffee County, that began as a lumber camp around the early 1890s but quickly turned to mining by the mid-1890s. Following a rapid development of the optimistically named operations of the Gold Bug, Vivandiere, and Golden Wonder mines, and the rapid development of the nearby town, complete with a two-story hotel, post office, schoolhouse, saloon, and butcher shop, the recoveries never panned out, and the boom was over by 1902 (Dallas 1985:203; Southworth 1999:141).

A mixed temporary and production-class site is illustrated at the historic mine of Gold Camp in Eagle County, established in 1880 and developed by the Gold Park Mining and Milling Company. A large stamp mill was erected to crush the gold ores; however, by 1884, the area was largely abandoned. Dallas (1985:94) cites a newspaper article relating to Gold Park from the *Rocky Mountain News*, in 1881: “Managers and principal stockholders have abundant faith in the mines...they expect shortly to reap a rich harvest.” A report by Burchard (1885), as cited by Henderson, signals the forthcoming fate of the operation: “At Holy Cross [Gold Park] exploration only has been done; bodies of ore have been developed, but the actual yield has been almost nothing.” (Henderson 1926:119)



A light production-class site is exemplified at the Valley View Mine near Telluride in San Miguel County, located in 1888 and in operation under various ownerships until 1907. By the end of 1897, the mine employed 22 men and was equipped with a 20-hp double flat friction electric hoist. Buildings at the mine included a large blacksmith shop, a two-story boardinghouse, two bunkhouses and an office, and also 65-ton capacity ore bins and chutes at a tram terminal at the head of a 2,000-foot-long aerial tramway that connected the mine to a mill (Horn 2002:26). Light production-class historic mining sites are expected to display features such as adits or shafts and the remains of structures, such as an assay office, boardinghouse, boiler or boiler house, head frame, shaft house, or stamp mill. The range of diagnostic artifacts includes miner's lamps, pumps, siphons, fans, bellows, and a variety of other hand tools. In addition to these cultural resource types, fully developed, mechanized mining sites may include remains of a smelter, sorting house, tramways and tram cars, a blast plant, roaster, a mine railroad, and more substantial foundations. Developed mining sites may also provide evidence of entire districts, whether residential, commercial, or ethnic (Mehls 1984a:32). Coal mines often progressed to the light production or fully mechanized stages when they were owned by one of the large coal companies that dominated coal production in the state.

### **Mining Site Technology**

To some extent, the distinctions in the various types of mining operations listed above also correspond to the various stages of technological development within the industry (Table 24, above). For instance, the earliest techniques associated with the placer mining phase involved some form of sluicing to separate gold from streambed gravels. The transition to hard-rock mining of precious metals necessitated the adoption of arrastras and stamp mills to crush gold-bearing rocks. The development of smelters and the introduction of blast furnaces in the late 1860s represents a broad temporal marker in the transition to the hard-rock mining industry in Colorado. This, in turn, led to further technological developments, such as air drilling (replacing hand labor as the main means of drilling and blasting), and ventilation systems, such as shaft fans and bellows (Mehls 1984a:38). The smelting of precious metal ores, the production of iron and steel, the rapid growth of steam power mining plants, and expansion of railroads created a tremendous market for coal and coke far above what was required for residential purposes. This demand stimulated the coal-mining industry that used mining techniques similar to those for hard-rock mining. The presence of an air compressor implies that miners were using machine drills and not hand drills (Sagstetter and Sagstetter 1998:46). However, it is important to note that these developments did not necessarily follow a simple unilinear stage of progression. Much variation is expected between regions and over time, punctuated by changes in local and national markets, such as the Depression of the 1930s, which created a revival in simple gold panning and sluice box placer mining activity (King 1984:47).

Although technology remains a major component of the archaeological record of mining sites, the value in documenting historic technological features lies in the ability to situate the machinery within a specific historical context because the mere presence of mining-related equipment in an archaeological context does not necessarily provide an indication as to the nature of the operation that was undertaken or the circumstances underlying its use. To illustrate this point, it is useful to consider the example of the Badger State Placer Mine Company, which set up an operation in the vicinity of Fort Garland in Costilla County in 1898. A report by Patton and others in 1910 (as cited in Henderson) describes the company's unsuccessful attempt with a new "steam shovel and gold-saving machine:"

This machine, pretentious in its day, was intended to handle 1,000 to 2,000 cubic yards of gravel per day. The steam shovel, or dipper type, discharged each load into a revolving screen. Here the gravel was disintegrated and washed by jets of water, the undersize being conducted thence through a riffled sluice 3 feet wide and 30 feet long. As the shovel brought up about 1 cubic yard at a time, the apparatus would one moment be congested with dirt, while a few moments later the screen and sluice would be running empty. Even under such conditions it is reported that this device treated about 2,700 cubic yards, from which was obtained an average yield of 24.6 cents per yard. Naturally, in face of the inexperience of the operators and the shortcomings of the machine, the costs of operation were in excess of the recovery and the closing down followed. (Henderson 1926:111)

A significant aspect of the archaeology of Colorado mining is the documentation of innovations and inventions not recorded by history, including the numerous local adaptations to specific circumstances. These represent the dynamic nature and diversity of the industry and the people associated with it. However, for the majority of cases, the archaeology of mining technology consists of isolated occurrences of abandoned machinery or equipment that has little or no associated context.

In general, the various methods and technologies involved in hard-rock mining are similar despite the extraction of different minerals and ores. For instance, open-pit uranium mining is similar to coal mining except it generally covers less area and the depth of the pits is variable, ranging from a few feet to as much as 300 ft. (Morse 1980:263). Belowground mining techniques for coal, uranium, vanadium, and precious and base metals were similar in that drills and explosives were necessary, blocks of extracted materials were removed and conveyed in similar manners, pillars and supports were needed to prevent cave-ins, fresh air ventilation of the workings was necessary, and tipples were required to store extracted coal or ore in preparation for transport. Variations on the theme were necessary, depending on the mineral being extracted and environmental situations. For instance, sophisticated ventilation systems were installed at some uranium mines, involving large-capacity pumps to expel radon gas to protect workers from exposure to radioactivity.

### **Mining Site Community and Settlement Patterns**

Hardesty (1988:101) suggests that variability between mining communities stems from a combination of five main factors. These factors, 1) ecology, 2) technology and the workplace, 3) ethnicity, 4) social class, and 5) laissez-faire individualism, are well suited to archaeological inquiry when a broad comparative and chronological perspective is adopted.

In addition to the simple relationship between the location of mining settlements and the presence of ore bodies, the ecology of mining resulted in three main types of settlement:

1. A single large town associated with a large ore body.
2. Several smaller settlement nuclei associated with smaller ore bodies dispersed over a large area.
3. Dispersed households over widespread and low-yielding ore deposits, such as placer gravels (Hardesty 1988:101-102).

In terms of the factors relating to technology and the workplace, Hardesty (1988:102) suggests that the technology of industrial mining utilized, whether expensive and large-scale or inexpensive and opportunistic, was a major factor structuring the social organization of mining communities. For instance, large-scale managerial and capital-intensive operations fostered the “development of a standardized and highly structured set of social relationships,” namely, wage labor, labor unions, and large inequalities in wealth and social status. Conversely, small-scale mining operations using inexpensive technologies fostered “laissez faire individualism and fissioning within mining communities” (Hardesty 1988:102). These contrasting forms of social organization are likely to create contrasting patterns in the archaeological record.

Hardesty (1988:103) states that “understanding social variability among mining communities that arises from differences in ethnicity and place of origin, which is often invisible in documentary accounts, should be one of the key goals of mining archaeology.” Identifying ethnicity in the investigation of a mining community establishes a framework for documenting patterns in social difference, fissioning and social interaction, among other factors, based on variability in aspects of the archaeological record. For instance, a common practice among coal (and other mining) owners was to “manipulate ethnic and language differences to discourage worker solidarity” and was manifested by “residential segregation by ethnicity” being “the norm in the camps, with the best housing going to Anglo-Americans and northern Europeans” (Clyne 1999:46). Similarly, “social status and class consciousness strongly influence patterns of social interactions, where one lives, lifestyle, and the sense of belonging that underlie the concept of community” (Hardesty 1988:103).

Another important dimension for interpreting the totality of the mining community is the identification of gender systems. Although women were excluded from most mining activities, the first

women to arrive in mining towns came as “prostitutes or with middle-class, professional families, such as those of merchants, doctors, and lawyers” (Hardesty 1998b:300). In some cases, the mere presence of a woman within a mining camp or town was a significant enough event for a sense of community to result. For instance, in the early mining settlement of Empire, several miles west of Idaho Springs, the sheriff’s wife, Mrs. James Ross, was presented with a free building lot in recognition of being the first woman to arrive in the town (Southworth 1999:33). As with ethnicity and class, the archaeological manifestations of gender within mining communities may be expressed in an analysis of households, associated artifact assemblages derived from trash dumps, and patterns of settlement segregation and has the potential to present an account of the material conditions of various groups that contrast with or supplement the historic literature.

The concept of *laissez-faire* individualism is expected to have resulted in the development of mining communities with a strong independent social climate and, according to Hardesty (1988:103), has two main implications for the archaeology of mining settlements:

1. Higher variability among the artifact assemblages of house sites of miners than would be expected in comparable nonmining settlements.
2. Households of mining settlements are expected to be inward looking and atomistic and to show little documentary or archaeological evidence of cooperative behavior.

However, many exceptions to these rules are expected. For example, the remote mining camp of Saints John (nine miles northeast of Keystone), established in the 1860s, was organized by Freemasons and was developed by the Boston Mining Company. The town did not have a saloon, though it did have a 350-volume community library, and the manager’s house was lavishly furnished with English and European furnishings – rarities in all regards for a mining town. The “high moral atmosphere” was presumably a reflection of the Bostonian morality of the Saints John Mine ownership (Dallas 1985:174). Thus, the incorporation of these factors to the study of archaeological evidence is an important means in seeking to understand how and why a mining community differs from or was similar to other communities.

Mining communities are covered in more detail as an element of Chapter 4 in this volume. Still, it is important to highlight the importance of households and aggregate households in a mining community as sources of important archaeological data relating to the study of socioeconomic status variation between workers, managers, and owners and between ethnic groups; retention of ethnic characteristics and identity; assimilation of social values and norms (such as Victorian morals and values); acquisition and availability of goods through time; consumer choice; household composition and the roles of women and children; substance abuse and vice; and the roles of support industries and businesses within a community. Because the majority of sites fall within the late nineteenth and early twentieth century, interpretation of mining communities and households may benefit from evaluation in a Victorian framework as proposed by Baker (1978a; 1999a).

### **Mining Landscapes**

In many areas, intensive mining has left prominent evidence so that it is a key element of the landscape. Often this is a combination of mining, milling, residential, transportation, and other elements that can be from a particular period of time or has aggregated through years of activity. Individual sites within a landscape may be considered for significance on their own merits, but can also gain significance as important elements of the physical landscape. According to Noble and Spude (1992), “Landscapes may represent the most dramatic visual images of mining. Mining landscapes evoke images of time, place, and historical patterns associated with past mining epochs.” As such, setting and feeling are important elements of mining landscapes and can be compromised by incompatible development. Although archaeologists are mainly concerned with the material remains at individual sites, the position individual sites may play as components of a mining landscape should be kept in mind.

## Potential for Sites within the Theme to Exist and Be Recognizable

A potential exists for mining and mineral processing sites dating from the first discoveries of gold in 1858 in the gravel deposits south of Denver and in the vicinity of Blackhawk and Central City. Considerable spatial and temporal variation in mining development exists and in the relative level of preservation for the variety of mining and mineral processing sites and related features. In this section, these factors are identified and discussed with examples to provide a framework for evaluating the relative potential for sites to exist and be recognizable in different archaeological contexts from different time periods, activities, and processes.

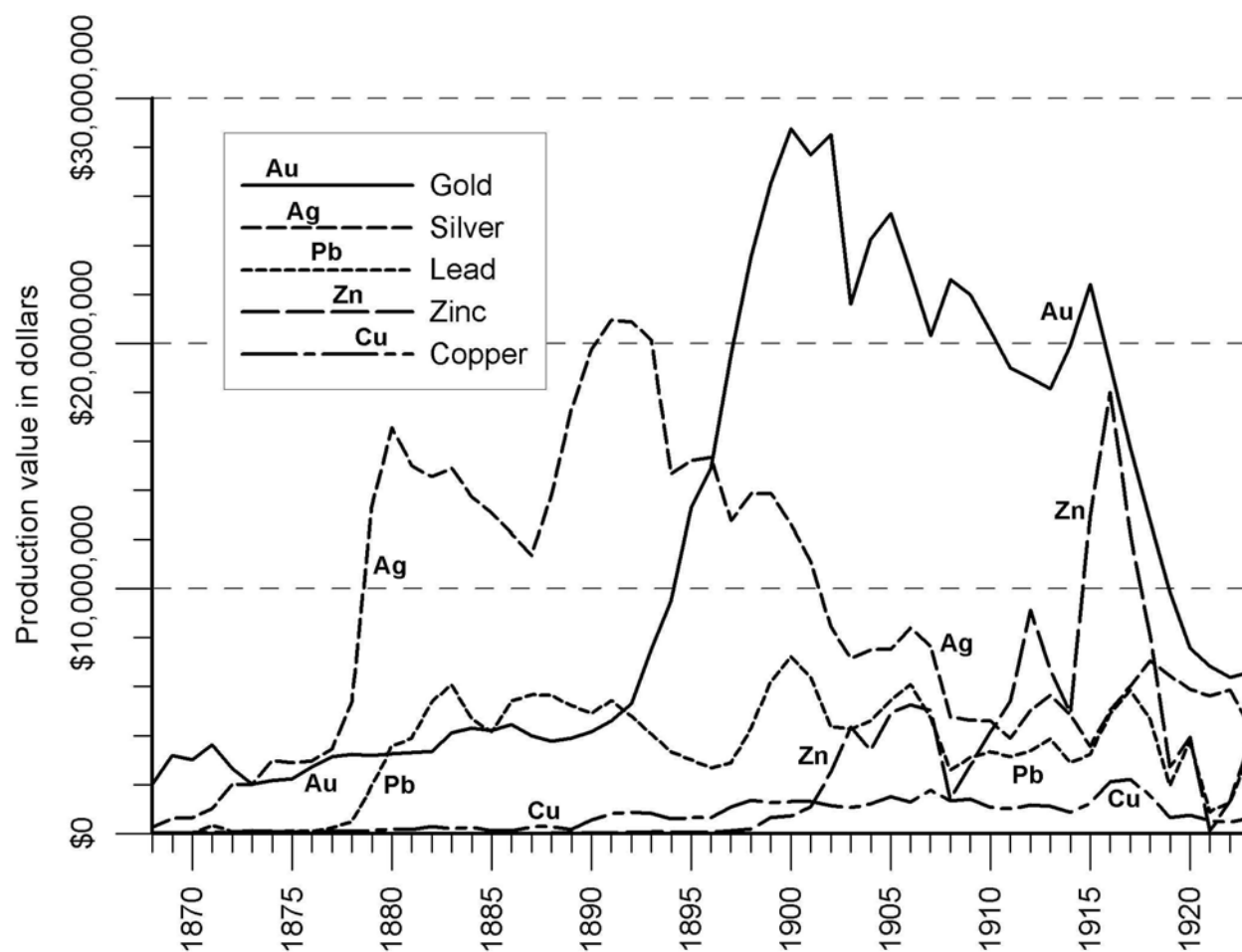
The archaeology of mining and mineral processing sites is expected to differ substantially during particular time periods and between regions, depending on such factors as the type of minerals being extracted, local histories, the level of investment, and the nature of the economic markets. As depicted in Figure 21, the production of precious metals in Colorado fluctuated, sometimes dramatically, during the late nineteenth and early twentieth centuries. An examination of the reasons underlying these fluctuations in relation to the specific mining region under investigation may or may not account for certain patterns observed in the archaeological record. Similar fluctuations were the case for coal mining and other mineral mining. For example, between 1860 and 1880, the mining of base metals such as lead, zinc, tungsten, and copper began as a secondary component to silver or gold mining operations, with these minerals separated during the refining process. However “during the 1880s and 1890s this began to change with exploration for and establishment of mines for base metals independent of precious metals” (Mehls 1984a:52), such as the site of Eagle Camp in Eagle Valley, established by New Jersey Zinc and others.

Zinc began to assume a prominent role in Colorado mining beginning about 1900, when the price of the metal rose sharply “because of an increase in demand and the efforts of producers in Missouri to restrict their output” (Fell 1979:237). Prior to this price rise, smelters had actually “penalized ores holding even small quantities of zinc because it interfered with the formation of silver-lead bullion” (Fell 1979:237). These patterns are depicted in Figure 21, whereby lead production was actually greater than gold production during the 1880s and early 1890s, and zinc began to take a more noticeable role within the mining industry after 1900. World events, such as the Depression of the 1930s and the world wars were also factors affecting the temporal fluctuations in mining activity. For example, during World War I, the thriving mines of Victor in Teller County were shut down for lack of workers (Dallas 1985:211). Nevertheless, it appears that production peaked during 1918 because of production elsewhere in the state, but overall demand and production dropped immediately following the war effort, as depicted in Figure 21. At the same time, the impetus of war stirred the development of mining of molybdenum at Climax, near Leadville.

Another interesting pattern to emerge from Figure 21 is that by the time of the Panic of 1893 and subsequent silver crash, silver was already in decline, whereas gold production was actually on the increase. The identification of such patterns is important for archaeological interpretation. For instance, at a very general level, one would expect the archaeology of mining and mineral processing sites dating to around 1900, when the state reached its peak level of total production of precious minerals, to differ from the archaeology of mining and mineral-processing sites dating to post-World War I years of the early 1920s, when the industry was operating at a much lower level of overall production. The archaeological manifestations of these general processes are examined below, based on an analysis of the state database.

One major factor causing spatiotemporal variation in the history of development and production within the mining industry in Colorado is geology, or the existence of particular ores in particular regions. Concentrations of precious metal mining sites are expected in mountain areas including Clear Creek, Gilpin, Boulder, Hinsdale, Gunnison, Pitkin, Summit, Lake, Chaffee, Park, San Miguel, Ouray, and Teller counties (Mehls 1984a:32). Silver ore was mined in the Leadville, Gilman, and Kokomo districts shortly after the first gold discoveries. Coal mining in Colorado began soon after the first gold-mining activity along the Front Range, with a particular concentration of coal-mining activity within Boulder and Weld counties. This rise in coal mining was in response to demand for fuel for smelting and steam power production. Later, coal deposits were discovered in southern Colorado and the Crested Butte/Redstone/Somerset area of west-central Colorado that supplied smelters and the steel industry in Pueblo. These deposits became the dominant source

of coal in the state in the twentieth century, though other sources of coal were exploited statewide, including deposits in the vicinity of Craig, Durango, and Grand Junction that was used for railroad and commercial purposes.



Drafted from data collected by Henderson (1926:69)

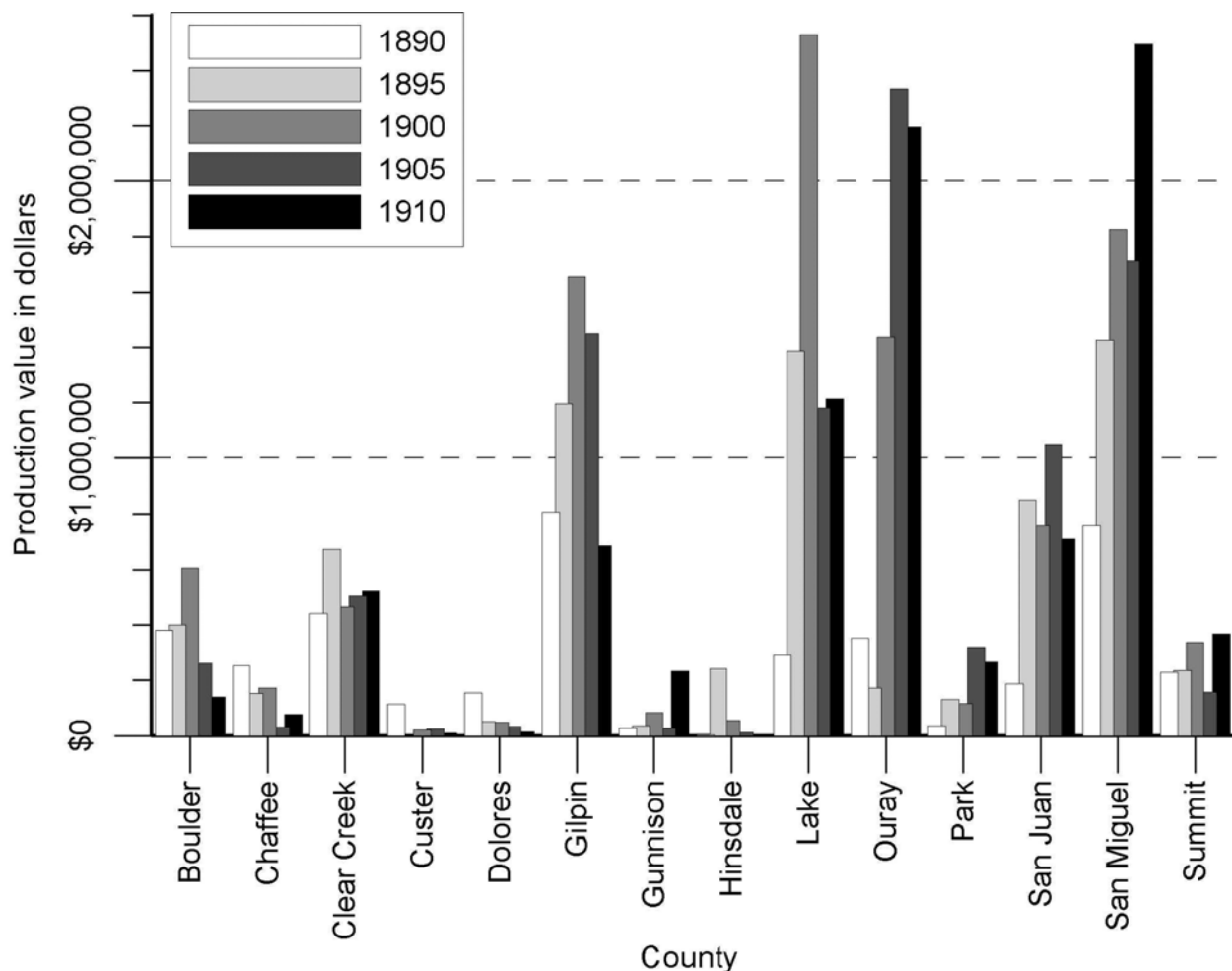
**Figure 21.** Production of gold, silver, copper, lead, and zinc in Colorado, 1868-1923, by years, in terms of recovered metals

Molybdenum was discovered in the Climax area around Fremont Pass north of Leadville in 1879, though it did not become an important mineral until World War I, when it was used as an alloy for hardening steel for armaments. Stone products (including clay, gravel, stone, marble, and cement) were particularly important during the late nineteenth century, providing basic materials for construction. However, the bulk and weight of these materials ensured high transportation costs, and as such, “only those of high value, such as fancy building stone, marble and cement, could be profitably mined at any distance from markets” (Mehls 1984a:53). As a result, most historic stone-quarrying sites and associated cultural resources are expected to be found near historic settlements where the materials were used for local construction. However, this was not the case for the marble industry because it was an unusual and particularly desirable product.

Uranium, radium, and vanadium have an intertwined history. Uranium was first discovered in Montrose County in 1879, but it was not properly classified until 1898. Radium, found in carnotite ore in association with uranium, was much sought after in the late 1890s for medical experiments. The market for

radium from the United States plummeted after 1921, when high-grade pitchblende from the Belgian Congo was introduced on the market at prices intended to eliminate American competition. Mining of carnotite ore for vanadium and uranium continued through the 1930s but at a very low level because of a limited market. Vanadium from the area was largely extracted from roscoelite ores found along the San Miguel River in the vicinity of Placerville in 1901, resulting in the 1910 construction of the first vanadium mill in Colorado at Newmire, later renamed Vanadium. In 1936, the U.S. Vanadium Corporation shifted its vanadium processing to a new mill at Uravan, which processed carnotite ore for both vanadium and uranium. In the late 1930s, the principles of radioactivity and the energy potential of nuclear chain reactions began to be understood, including its potential as a fission explosive device. In 1941, vanadium was classified by the U.S. government as a strategic metal because of its importance in the production of steel alloys. As part of this, the Metals Reserve Company was established, a base price was set for vanadium, and buying stations were put in place. In 1942, the Bureau of Mines and U.S. Geological Survey (USGS) combined to conduct secretive core-drilling programs at select locations in the Salt Wash Member of the Morrison formation on the Colorado Plateau. Exploration was reported to be for vanadium, but was actually done to find uranium ore for development of the nuclear bomb under the Manhattan Project. Uranium ore concentrating mills were established at Uravan and Durango and a refinery was constructed at Grand Junction. Following World War II, the Atomic Energy Act was passed to promote the use of nuclear energy for both domestic and defense purposes. The act resulted in the government establishing prices for uranium ore and being the sole buyer, refiner, and producer for atomic use. The Atomic Energy Commission joined with the USGS to identify and withdraw public lands where uranium was known to exist and lease them for mining beginning in 1948. Guaranteed prices induced citizen prospectors to fan out across the Colorado Plateau in search of uranium deposits that would make them rich. Rampant prospecting ceased in 1958, when the government determined that supplies of uranium had reached a point where unrestricted exploration and purchase was no longer necessary. Government purchases of uranium continued until 1970 on a more restricted basis. Commercial sale of uranium after 1970 was highly profitable for the mining industry as nuclear power plants were being constructed worldwide. Uranium prices fluctuated greatly in the 1970s and 1980s, with a great decline in the later 1980s resulting in a cessation in uranium mining that has continued to the present (Amundson 2002). Between 1948 and 1974, western Colorado accounted for 12 percent of the total uranium ore mined in the United States (Morse 1980:244). Although most of the mining operations are found along the Uravan Mineral Belt of Mesa, Montrose, and San Miguel counties, the largest uranium mine in Colorado is the Schwartzwalder Mine between Golden and Boulder in Jefferson County. The town of Uravan, in western Montrose County, was named by the U.S. Vanadium Corporation, from the first syllables of uranium and vanadium, two minerals found in carnotite ore of the area. It has been suggested that it was the presence of vanadium that enabled the economical extraction of uranium ores because the cost of excavation and processing of ore for uranium alone involved a large economic burden (Morse 1980:244). Sites associated with radium, uranium, and vanadium mining will be found throughout the Colorado Plateau, but productive mines are restricted to specific geological formations that bear carnotite or roscoelite ores.

To illustrate broad patterns of regional variation within the archaeology of mining and mineral processing sites, some trends may be observed by comparing the relative production of gold and silver in a select number of counties in Colorado between 1890 and 1910, with the notable exception of Teller County (Figure 22 and Figure 23). Although a relatively stable period of gold mining was maintained in some areas, such as Clear Creek County, others encountered brief flurries of activity before collapsing, such as the mines of Dolores and Custer counties. Others were able to maintain huge levels of overall production throughout the period, such as Lake, Ouray, and San Miguel counties. Such contrasting patterns are expected to create equally contrasting patterns in the archaeological record. All of the counties demonstrate a considerable drop in silver production after 1890, with the exception of increased production in 1895 for Lake and San Juan counties, a pattern that suggests that silver production remained high coincident to increased gold exploration and production in those areas.

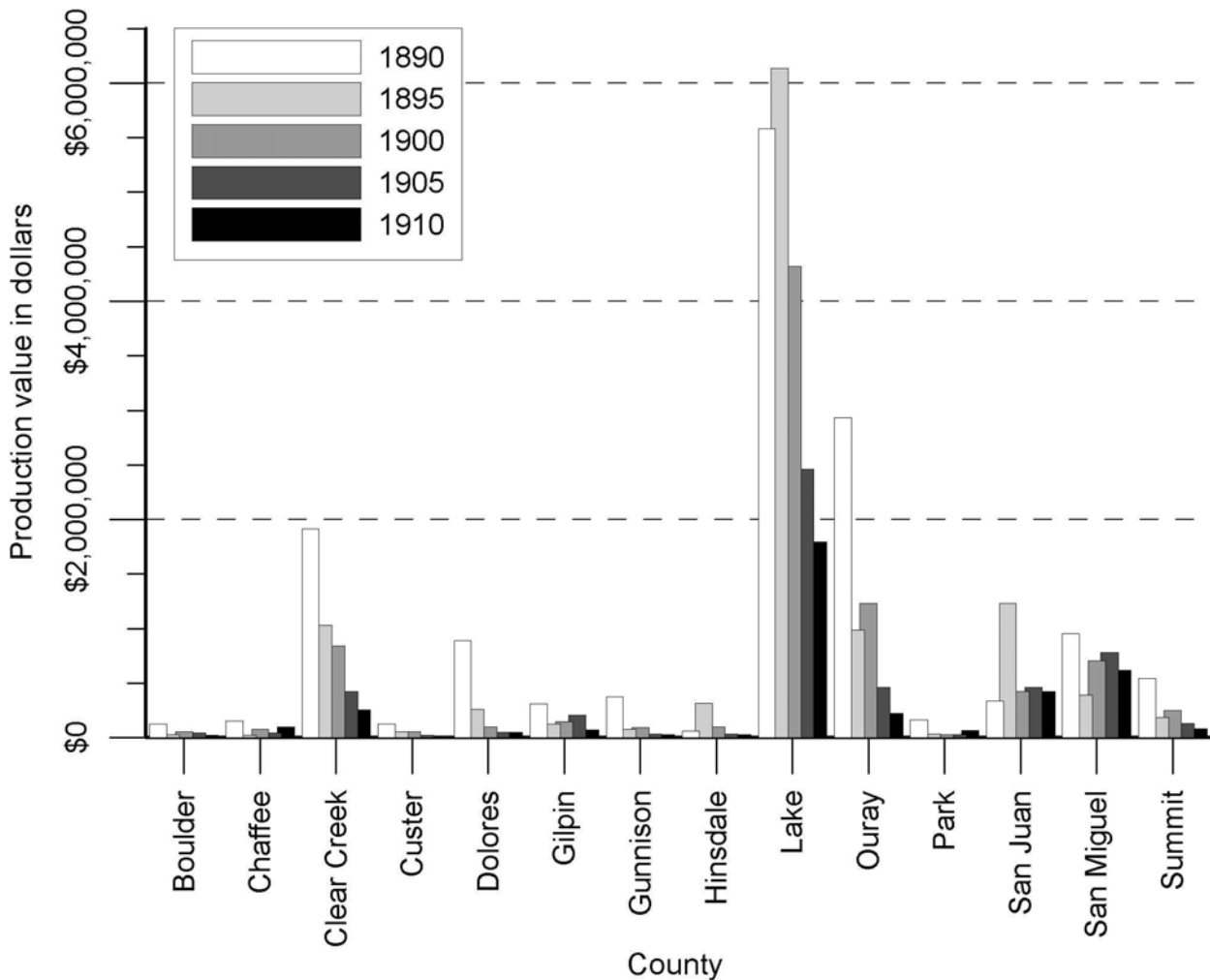


Drafted from data collected by Henderson (1926)

**Figure 22.** Gold production in select counties of Colorado for every fifth year from 1890 to 1910.

Substantial variation within any one of these regions is also to be expected, dependent also on the nature and progression of mining operations. For instance, much of the archaeological evidence for placer, primitive, or initial mining can be expected to have been destroyed by subsequent mining operations as these early deposits became further exploited. Additional problems of preservation derive from the tendency for past mining activities to have been close to water courses – an essential component of placer mining – and flooding episodes are likely to have obliterated many historic activity areas. For instance, a devastating flood of the San Miguel River originating at Trout Lake in 1909 removed all low-lying evidence of the extensive placer mining along the drainage from the 1880s and 1890s, perhaps as far as its junction with the Dolores River. In some instances, many camps were dismantled by the occupants themselves and reassembled in other areas where new strikes were made (Mehls 1984a:24-25). As a result, small-scale historic placer mining activity is expected to be underrepresented in the archaeological record. An interesting account of the Lake County placer mining district from 1867 is insightful in this regard:

Nothing, indeed, can be more deceiving or more ephemeral than the feverish prosperity of a placer mining country. California Gulch, which six years ago was infested by 5,000 to 6,000 people is now deserted. The relics of former life and business, old boots and clothes, cooking utensils, rude home furniture, tin cans, gold pans, worn-out shovels and picks, and the remains of toms, half buried sluices and riffle boxes, dirt-roofed log cabins tumbling down, and the country turned inside out and disguised with rubbish of every description, are most disagreeably abundant and suggestive (Hollister 1867); as cited by Henderson (1926:132).



Drafted from data collected by Henderson (1926)

**Figure 23.** Silver production in select counties of Colorado for every fifth year from 1890 to 1910.

Aside from the fact that rarely would all but the most hardened prehistoric archaeologist use the phrase “disagreeably abundant and suggestive” to describe such a wealth of cultural materials, this comment is insightful. The remains of placer mining “boom” activity was of such a density that commentators of the day were critical of the ephemeral nature of this form of mining, advocating the development of large-scale mining ventures as the only alternative. As this particular commentator advocated, “Although a few parties still make enough to support them through the winter by working this gulch [California Gulch] during the summer, its future prosperity, and this is true of the entire county, must depend on the development of its quartz mines” (Hollister [1867] as cited by Henderson [1926:132]).

Although “ephemeral,” it is apparent that cultural materials for placer mining districts were abundant; however, we return to the problems of subsequent developments, which obscure much of the archaeological record of such activities. For instance, following Hollister’s description of the “abandonment” of California Gulch area by 1867, the area was heavily worked subsequent to this period, as the following accounts testify:

1872 The placer and lode mines of California Gulch have been worked vigorously this summer...The mine has a shaft on it 140 feet in depth, with levels run at regular intervals, and a large amount of banks yet untouched (Raymond 1873); as cited by Henderson (1926:133-134).



1873 In the Printer Boy vein, in California Gulch, several very rich strikes have been made during the year, one of which, in August last, furnished \$3000 of leaf gold in a small pocket. The mine is opened to a depth of over 300 feet, and even at this depth the ore is still decomposed brown quartz. Horizontally the mine is explored for about 500 feet (Raymond 1874); as cited by Henderson (1926:134).

1874 The result of this season's work has been about \$80,000 worth of gold, although the supply of water was small and the summer shorter than usual. Most of the old ground is now considered as worked out, and, as a consequence, attention is given to the upper levels of the creeks mentioned and to the bars of the main stream [the Arkansas] (Raymond 1875); as cited by Henderson (1926:134).

These accounts illustrate aspects of the transition from surface mining to underground hard-rock mining and highlight the range of preservation and site-formation processes typically plaguing mining or smelting archaeological sites. As the above example demonstrates, the initial period of mining activity in California Gulch was likely to have been destroyed, dismantled, recycled, or relocated with subsequent developments, and as such, the majority of initial period sites are now obscured from the archaeological record despite intensive use.

Although hard-rock mining operations were generally more permanent with elements more likely to survive in the archaeological record, problems of preservation are still common. Because materials and equipment were in demand, failed mines frequently had their structures and machinery sold or salvaged for use at other mines. This was particularly common at mines where infrastructure was not highly developed and transportation costs for equipment and materials were high. In addition to processes of modernization, fires, floods, and avalanches were common, destroying many of the early resources, resulting in a low potential for architectural elements to survive, but perhaps providing opportunities for archaeologists to study short-lived operations with abundant materials in place, if they were not salvaged or rebuilt upon. In 1902, for example, an avalanche destroyed the surface improvements of the Liberty Bell Mine near Telluride, including the mill buildings and the aerial tramway (Raines 2000). Although the Liberty Bell was able to rebuild and continue operations for over 20 years, similar events at less-well-off mines often forced the closure of the operation. Despite the architecture being demolished, the on- and belowground evidence of these sites may remain available for archaeological interpretation. The final disappearance of mining equipment at many mining sites was as a result of salvaging during the Depression and for scrap metal drives during World Wars I and II. In many instances, a shaft or adit opening and associated waste rock may be all that remains of the physical mine workings. Frequently, shafts have been sealed, trash dumps have been looted, and most of the industrial material has been removed either for reuse or for scrap value. However, a closer look may reveal that archaeological values remain that may assist in interpretation of the mining operations and the lives of the individuals who resided there.

At some mines, extensive development resulted in replacement and, often, burial of earlier manifestations, leaving only the last and most highly developed configuration of the site for interpretation. In the Leadville area, it was found that this level of development was possible only at a very few of the most productive mines because upgrading for deep mining and increased production was so expensive. These mines truly grew over and replaced earlier improvements. However, adjacent mines that were not so improved ceased operating and remain as excellent examples of earlier mine complexes where the arrangement of improvements and the level of technology in use are still much in evidence as archaeological manifestations.

In some instances, good examples of mine operations from a particular period have survived because of unusual circumstances. For example, the Argo Mill at Idaho Springs was never highly successful, but it never completely failed. The mill was never scrapped, but neither was it financially feasible to completely upgrade it. What remains is a complete mill that contains a variety of equipment from a wide span of time and representing transitioning technologies.

Additionally, activities in many of the early mining districts were relatively mobile or underwent major economic transformations. Using California Gulch near Leadville as an example, the original placer mining town of Oro City was dismantled and moved to a new location with the establishment of the first hard-rock mine, the Printer Boy Mine, farther upstream (Southworth 1999:96). Some mines have suffered purposeful destruction of their workings at the time of their abandonment, such as the Orient Mine in Saguache County, established as a coal mine in 1880, whose opening was dynamited in the 1930s at the time of its abandonment (Dallas 1985:146). The town of Tiger in Summit County, operating between 1918 and the 1930s, was partly demolished by dredging of the Swan River and then burned down by the U.S. Forest Service and Bureau of Land Management in 1973 to make it uninhabitable to hippies (Dallas 1985:200). Although these sorts of activities were destructive to the architecture or certain other elements of these places, often making them less visible, the impacts to their archaeological signatures and the values they contain as archaeological sites may be less than they at first appear. Removal by dredging or burial under waste rock from subsequent high-production mining is certainly detrimental to archaeological components of mining sites by either removing them or making them inaccessible for investigation. Looting of trash dumps at mining sites has been a popular activity beginning in the 1960s. In some cases, archaeological deposits have been completely removed and can be considered to be destroyed. In other instances, care should be taken to assess the extent to which damage has taken place and carefully consider what remains there intact, because looting is seldom extensive and looters are selective in what they remove.

The potential for sites within the mining and mineral processing theme to exist and be recognizable is highly variable, but in most areas the likelihood that evidence for mining will be identifiable is quite good. Mining leaves characteristic structures and patterns of use on the landscape, including adits, shafts, waste rock and tailings piles, and haul roads, even when architectural elements have disappeared. Stepped, descending foundations of ore-processing plants that crushed, pulverized, and separated ore from its matrix and concentrated its minerals are particularly characteristic of precious metal lode mines. Waste rock and mill tailings have retained physical and chemical characteristics indicative of underlying ore bodies and milling processes. Natural and human-caused changes at mining sites may make the shorter-term mining attempts more difficult to interpret and evaluate in terms of their associations and potential to yield important information, particularly for sites of greatest age. Still, the tendency is to undervalue the potential of historic mining sites and not fully appreciate their data recovery potential.

A further problem for the archaeologist investigating historic mining and mineral processing sites is that in several documented cases, artifacts associated with mining activity are not always readily apparent at mining camps (Rosillon 1984:132). For example, a historic log cabin near Marion in west-central Colorado is presumed to have been occupied by miners working the nearby lode claims in the early 1900s, because “the history of the area strongly suggests such an explanation” (Rosillon 1984:131). However, “no artifacts clearly indicative of miner occupants were observed on the surface around Feature 23 [the cabin]” (Rosillon 1984:132). Additionally, identifying aspects of ethnicity or class in the archaeological record is potentially problematic, especially on a local level, because social distinctions are not always visible in architecture and artifacts at the household level (Hardesty 1988:103). This may be because ethnic identities probably made up a small portion of the material culture of an ethnic group or individual, and ethnic traits may have been represented by traditional activities that leave no archaeological remains. Further, manifestations of ethnicity such as dietary preferences are often difficult to discern archaeologically.

Many of these problems are best overcome by playing on the strengths of archaeological investigation. According to Hardesty (Hardesty 1988:12), archaeological mining sites are best understood as “discontinuous surviving remnants of multiple occupations” and require that “good field searches for surviving feature systems be conducted as part of the survey and site evaluation plan.” For instance, mapping historic site layout patterns is insightful for understanding the use of space as well as identifying the “intent of the work camp, and the institutions responsible for its layout” (Teague 1980:143). At a basic level, a haphazard and seemingly unplanned (as opposed to a rigid, linear plan of features) suggests an opportunistic or uncoordinated effort, whereas an orderly arrangement of features may reflect the bureaucratic and authoritarian nature of a mining company (Teague 1980:143). Haphazard, uncoordinated arrangements may also be indicative of poor planning or an underfunded operation. Teague’s explanation of site layout patterns

at the Reward Mine Complex in Arizona, “with buildings having an aimless alignment in the earlier years, and a rigid, symmetrical, and parallel arrangement after the turn of the century” shows that the “rise in technological complexity and the tremendous leap in the number and variety of material objects required a new kind of standardization and compartmentalization in order to make sense of the chaotic.” (1980:152)

Mines were inherently dangerous places to work. Miners were frequently injured or killed on the job from a variety of sources. Simply entering a mine, a miner might be hit by falling rocks or timbers, suffocate from gas accumulations, or fall down a shaft and die on impact or drown if it was full of water. Accidents crippled or killed many miners. Steam equipment blew up, compressed air hoses or steam lines broke, wire rope cables snapped, and hoist brakes failed with a variety of horrible results. When electricity became common, miners would occasionally be electrocuted by accidentally touching exposed wires. During blasting, premature or delayed explosions were a constant hazard. Fire was always feared, but when a fire took place at a mine opening, smoke sucked into mine workings was a particularly deadly event. During winter, miners at high elevations were subject to death from exposure and frequent avalanches. If death was not swift, a miner might die slowly from “black lung” disease from breathing coal dust or silicosis, or “miner’s consumption,” caused by breathing rock dust if he was using a machine drill not flushed with water. Such drills were common in the 1870s and 1880s, being replaced with water-flushed drills in the 1890s. Chemical exposure was also common, particularly for those working in mills. Early gold miners used primitive techniques to recover gold with mercury, often poisoning themselves in the process.

As time went on, conditions for miners improved. The first legislation passed by Congress relating to mine safety was in 1891. This law required ventilation and prohibited employing children under 12 but was aimed mainly at coal mines. Most of the regulations were the result of coal mine disasters and were not directed at precious metals mining. No safety laws pertaining specifically to mines other than coal mines existed until 1966. Even with the laws, safety of miners was largely up to the individual mining company and the company’s willingness to improve and maintain safe conditions in order to preserve or enhance their reputation. It also meant that miners had to look out for each other, and they formed strong bonds as a result.

The adoption of technological innovations, such as water-flushed drills and ventilation systems, may be evident at some mines, but the effects of working in mines and mills may be most apparent in the archaeological materials present at workers’ residences, boardinghouses, and medical facilities. Products used in the treatment of chronic afflictions, such as “black lung,” “miner’s consumption,” or injuries may be important clues as to the working conditions in the mines and mills, the concern of management for the health and safety of their workers, and how the working environment affected the workers. Archaeological materials associated with boardinghouses or company towns may provide further insight into company concern for sanitation and general health.

Archaeological investigations of past mining and mineral processing activity are of potentially great value, especially in the interpretation of mining landscapes, including underrepresented types of activities such as small-scale placer mining in various parts of the state and other types of activities that are not usually identifiable in the historic literature. For instance, descriptions or locations of unpatented mining claims are not always available from county courthouse records (Rosillon 1984:129), whereas the archaeological identification of mining claims and other features within a region would provide some indication as to the level of activity and spatial organization of placer or small hard-rock mining operations. In the case of uranium mines, it is unusual for a claim to have actually gone to patent, making assessment of the degree of prospecting and development nearly impossible without considerable courthouse research that details location certificates and annual assessment work filings. Such information would be valuable in interpreting aspects of prospector intensity and movement, which was more often than not dictated by speculation and hopeful exploration, and in a manner that is not easily interpreted from historic sources alone. Therefore, assessing the potential for a site within this theme to exist or be recognizable is often dependent on the establishment of rigid and well-developed archaeological methods of investigation to counter the numerous obstacles and data gaps characteristic of the archaeology of mining and mineral processing.

Because of radioactive environmental contamination and dangers of public exposure, many uranium mines and mills have been subject to clean-up efforts that have also had an impact on sites from an archaeological standpoint. Uranium sites are the most extreme example of the need for archaeologists to consider the possibility of becoming exposed to hazardous materials from radioactive minerals and radon gas. This same consideration needs to be made at any mining site where radioactive minerals or heavy metals may exist in the water, air, or soil, particularly when data recovery in the form of excavation is contemplated. Simply visiting a site with radioactive materials may pose a health hazard, whereas conducting activities where contaminants may be absorbed through the skin, breathed, or accidentally ingested is equally ill advised, as where radon and heavy metals are known or suspected to exist. Such hazardous conditions may put some sites or portions of sites out of consideration for on-site recordation or archaeological data recovery without special training, certification, and protective gear. In this same vein, exploration of underground workings of mines is discouraged, despite the understanding that equipment and examples of technology may not exist anywhere else. The hazards of underground workings are considerable, from unstable rock, deteriorating timbering, open shafts, and water, to poisonous or explosive gases, and atmospheres lacking oxygen. Without proper training and equipment, underground mine workings can be deadly.

### **Interrelatedness of Theme with Other Topics or Themes**

Being such an important industry in the development of Colorado, the mining and mineral processing theme has a connection with all other historic themes, and the connections are innumerable. Consider, the following account describing the history of mineral discovery and development that resulted in the establishment of Silver Cliff, in Custer County:

In 1878 three lumberman – Edwards, Hafford, and Powell – who were engaged in hauling timber from the Sangre de Cristo Range to Rosita, had their curiosity aroused by the black cliffs that stood out so prominently on the southern end of the White Hills, which they passed in going to and from their work. One day they climbed over the cliffs and gathered several pieces of a dark, greasy-looking mineral, which when heated in the stove, melted into a metal resembling silver. When some of these pieces had been sent to an assayer and it was learned that the mineral, when pure, contained 75 per cent of silver, another boom of mining excitement ensued. The discoveries promptly located the Racine Boy, Silver Cliff, and other claims; the surface of the ground in this portion of the valley was soon pitted with prospect holes; and a third town grew rapidly up, named from the mine, Silver Cliff (Emmons 1896), as cited by Henderson (1926:112).

In this instance, the themes of exploration, timber, mining, emigration, towns, and no doubt transportation are closely intertwined. Although smelting was the largest support industry to mining, other industries such as lumbering developed in association, as Mehls states:

Underground works required wood for bracing, timbering, shafts, head frames and other uses. Timber was needed for building, for heating homes, and for the refining process. As mineral activities grew, lumbering operations spread out from the camps. The northern mountains of Colorado caught the timberman's attention by 1870. This was due to two reasons; first to supply local mines and secondly to provide ties and other wood products for use in railroad construction during the late 1860s on into the 1870s. (1984c:90)

In general, the transportation theme is connected with all aspects of historic mining and mineral processing operations at both the local and national level, and, indeed, at the international level, as Hardesty (Hardesty 1990:45) states: "Mining operations in the American West were connected to the urban centers of America and Europe by means of a vast transportation and communications network" (Hardesty 1990:45). Mehls (1984a:91) notes that, although mining and transportation were strongly interrelated, mining stimulated expansion of Colorado's transportation system, because "freighters and railroaders felt that the high cost of construction in the mountains could be offset by lucrative trade."

The development of a mining frontier in Colorado also stimulated the expansion of the ranching industry, and the links between the two industries were often direct, as Mehls states:

Ranches were established along the trails that grew crops to sell to travelers, and some gold-seekers took up farming to supply the miners. This shift from subsistence to commercial agriculture and the rapid development of a transportation network meant that most early plains farmers were businessmen, not the typical pattern of frontier agrarians simply trying to feed themselves as had been done in other areas of the Great Plains. (1984b:63)

Transportation also manifests itself in other ways at mining sites. Internal transportation within an individual mine can often be distinguished, as can transportation methods used to move ore from a mine to a processing or shipping facility. Aerial tramways are a good example of an evident transportation method. Further, such transportation systems were as important for bringing equipment and goods to a mine as they were in shipping ore out. Railroads were of utmost importance for mine development for their ability to bring equipment and supplies in and enable ore to be shipped out at prices that enabled profitability and expansion of the mines. A graphic example of change wrought by railroad transport is in the Telluride area. After the arrival of the railroad in 1890, log-building construction ceased, even in the most remote locales, because construction lumber was so readily available and inexpensive.

Mining is integrated with the establishment of communities at all levels, including mining camps, towns, and cities. Communities were established at individual mines as boardinghouse facilities never intended to grow beyond the immediate facilitation of mining by providing room and board to workers. In times of speculation, towns grew up and died overnight, dependent on the actual viability of the minerals being sought. At larger mines, towns grew up as independent entities; in other instances company towns were established and controlled by the mine owners. Frequently, mining districts were served by towns that functioned as bases of supply and shipping. Somewhat related to this is market hunting, whereby game animals were procured on a large scale for emerging towns and camps, particularly before ranching and farming was well developed and wild game was still abundant. Although several towns often sprang up in a region, one usually emerged as the dominant community, usually because it was strategically situated at the interface of mining and transportation systems. Often, smelting or other processing facilities, such as coke ovens, were incorporated into the town that furthered its function in enhancing the mining of the region.

With the wealth generated from mining ventures, towns and cities provided recreational outlets for miners. Specialized recreation or resort towns were sometimes established in association with mining developments, such as Twin Lakes in Lake County – a popular resort in the 1880s and 1890s on the road between the two mining camps of Leadville and Aspen, notable for the hostelry built by John Campion, owner of the Leadville Mine (Dallas 1985:204). Additionally, the mining frontier served as an ethnic mixing ground and linked the United States with Europe, China, and other places. Mining camps and associated towns were what Hardesty (1988:3) calls a “population pool,” incorporating several nationalities and ethnic groups.

### **Representation of Site Types in State Database**

In Colorado, 3,639 mining and mineral processing-related archaeological sites have been recorded, based on sites listed in the state database up until 2002. These sites include a large number of sites recorded for attributes other than archaeological values and isolated finds, but a sample of 1,983 sites designated as historical archaeological can be found by accessing the online Compass database for historical archaeological sites under the “mining” theme (Table 25). Not surprisingly, mining sites are well represented in the mountains of Colorado, with Teller (17.3 percent), Gilpin (16.8 percent), Clear Creek (10.8 percent), Lake (7.5 percent), and Boulder (6.1 percent) counties accounting for over half of the total mining sites recorded in the state. These numbers demonstrate the historic importance of the mining industry in these areas and also the amount of development and reclamation work that has occurred there.

In all, 7,205 features have been recorded at the entire group of 3,639 mining and mineral processing sites of all sorts recorded in the state. The proportion of feature types recorded is presented in Table 26. As can be seen, shafts are the most common physical feature associated with mining sites, found at 26 percent of all recorded sites. Other well-represented features are adits (13.5 percent), prospect holes (9.5 percent), waste

rock piles (7 percent), and tailings piles (8.6 percent). As mentioned above, for a variety of reasons, a shaft or adit opening and associated waste rock or tailings are often all that remain of past mining activities. Obvious from the list of features recorded at sites is inconsistent terminology. For instance, the term *tunnel* is often used at mining sites to refer to an adit. However, technically, a tunnel is open on both ends and would be very uncommon at a mining site, even though in the historical literature mine openings were frequently referred to as tunnels. The differences between waste rock and tailings are also frequently confused, with *tailings* most often used as the primary descriptor. In fact, waste rock is the most common debris from mining and forms the majority of disposed of material at mining sites. It is so common that its mention at a site may frequently be neglected. Tailings are the fine remnants of pulverized rock from concentration or extraction mills. The use of proper terminology in describing waste rock and tailings is important because they are the result of different processes and because the presence of one or the other means different things where mine reclamation, environmental remediation, or human exposure to toxic materials are concerned for future investigation or management. Clearly, concise and standardized nomenclature for feature types will enable sites to be better compared with each other and will facilitate our understanding of individual sites and sites in aggregate. Such nomenclature is readily available (for instance on the Internet at <http://www.rocksandminerals.com/glossary.htm>) and should be utilized by anyone recording historic mining and mineral processing sites.

**Table 25.** Frequency of recorded mining archaeological sites by Colorado county.

County	Total	County	Total	County	Total
Adams	1	Gilpin	333	Montrose	30
Alamosa	1	Grand	16	Ouray	38
Boulder	120	Gunnison	41	Park	49
Broomfield	1	Hinsdale	23	Pitkin	3
Chaffee	84	Huerfano	19	Pueblo	3
Clear Creek	215	Jackson	16	Rio Blanco	4
Conejos	2	Jefferson	34	Rio Grande	6
Custer	31	Lake	148	Routt	30
Delta	2	La Plata	15	Saguache	24
Dolores	28	Larimer	43	San Juan	30
Douglas	13	Las Animas	16	San Miguel	35
Eagle	6	Mesa	44	Summit	52
El Paso	2	Mineral	25	Teller	344
Fremont	18	Moffat	8	Weld	3
Garfield	15	Montezuma	12	<b>Grand Total</b>	<b>1,983</b>

The uneven distribution of features in the archaeological database may be a reflection of variability in mining techniques and activities, the brevity of some activities, complete and rapid economic transformations, or direct acts of destruction or dismantling during abandonment phases. However, it is more likely that the distribution may be more of a reflection of inconsistencies in archaeological or historical documentation of the sites, particularly in regard to use of terminology, as alluded to above. Despite the suspected unevenness of recordation, the data provide a broad criterion for assessing the relative significance of mining-related archaeological features, especially those that are found in isolation. For instance, the low number of arrastras and sluices that have been recorded in the state would ensure that any future finding would be of significance, even without any associated context.

**Table 26.** Frequency of various mining site archaeological features.

Category	Frequency	Percentage	Category	Frequency	Percentage
Adit	975	13.5	Ore house	29	0.4
Air shaft	6	0.1	Placer	17	0.2
Arrastra	2	0.0	Platform	211	2.9
Blacksmith Shop	34	0.5	Portal	22	0.3
Boiler	24	0.3	Powder house	60	0.8
Boiler house	18	0.3	Privy	166	2.3
Cabin	23	0.3	Prospect hole	686	9.5
Claim marker	43	0.6	Quarry	98	1.4
Compressor	20	0.3	Rail	66	0.9
Flume	22	0.3	Rock pile	506	7.0
Head frame	132	1.8	Shaft	1891	26.3
Hoist	39	0.5	Shaft house	151	2.1
Hoist house	98	1.4	Sluice	9	0.1
Kiln	11	0.2	Smelter	8	0.1
Loading	96	1.33	Stope	127	1.8
Machinery	55	0.8	Waste Rock/tailings	621	8.6
Mill	129	1.8	Tipple	85	1.2
Office	26	0.4	Tramway	46	0.6
Ore bin	74	1.0	Trash scatter	168	2.3
Ore car rails	17	0.2	Trestle	73	1.0
Ore chute	112	1.6	Tunnel	209	2.9
			<b>Total</b>	<b>7,205</b>	<b>100.0</b>

The property types outlined by Hardesty and Little (Little et al. 2000:24) are useful for organizing mining sites containing specific categories of features (Table 27). Hardesty and Little's property types are used to facilitate the analysis and interpretation of the feature-type information in the database (Table 28). Certain feature types that could not be clearly associated with any one particular category remain as an isolated category. Based on these criteria, it can be seen that 46.5 percent of all mining-related archaeological features recorded in Colorado are classified as open pits, which includes adits and shafts. Waste rock dumps or mill tailings are the second most common feature category (18 percent) and ore loading facilities, including storage, are the third most common feature category (9.5 percent). In other words, exploitation and development activities represent the dominant property type, with landscape property types also well represented.

An analysis was attempted to document any temporal patterning of features. Unfortunately, this only showed another problem in the recordation of mining sites that may be common at all historical archaeological sites in the state. This problem is the defining of a temporal period or specific date range for sites being recorded. It is quite apparent that many recorders of historical archaeological sites in the state, including mining sites, have difficulty in analyzing historic artifacts or do little or no historical research about sites to put them into proper temporal context. Wide spans of time, such as the entire historic era, are often used as the date range for sites that may otherwise be accurately dated through artifacts or historical research. The introduction of a large number of poorly dated sites into the database renders that aggregate data rather useless for time-sensitive comparative purposes. One general trend was noticeable. It appears that 1930s Depression-era sites generally show a return to simpler technologies, more typical of ca. 1900, probably indicative of a resurgence of low-scale mining by individuals or groups trying to make a living with little economic investment.

**Table 27.** Range of mining and mineral processing property types (Hardesty and Little 2000:24).

<b>Prospecting/mine exploration property types</b>	Hand-dug prospect pits Power-shovel trenches Bulldozer cuts Drill holes
<b>Mine development and exploitation property types</b>	Hoisting works, such as head frames and hoist engines Open pits, shafts, or adits Ventilation systems, such as air shafts or blowers Power systems, such as steam boilers or electric generator houses Drainage systems, such as Cornish pumps Water delivery systems Ore bins or tipples Transportation systems, such as short-line railroads or ore cart runways Maintenance and administrative facilities, such as blacksmith shops, assay laboratories, offices, and workers' housing
<b>Beneficiation property types</b>	Arrastras Crushers Mills Concentrators Smelters Leaching tanks
<b>Refining property types</b>	Assay offices Private banks Express offices Mints Other refineries
<b>Settlement/landscape property types</b>	Camps, boom towns, districts Engineered mine complexes Mining landscapes (including waste rock dumps, mill tailings, and open pits)

**Table 28.** Frequency of major mining-site feature categories recorded in Colorado.

<b>Feature Category</b>	<b>Frequency</b>	<b>Percent</b>
Beneficiation	150	2.08
Hoisting works	269	3.73
Machinery	55	0.76
Maintenance/Administration	120	1.67
Open pits	3353	46.54
Ore loading	680	9.44
Power systems	62	0.86
Prospect pit	686	9.52
Quarry	98	1.36
Settlement	232	3.22
Transportation	129	1.79
Ventilation	28	0.39
Waste/dumps	1295	17.97
Water delivery	48	0.67

## EVALUATIONS OF SIGNIFICANCE

Mining sites will generally be ascribed significance under Criteria A and D, though some sites have sufficient architectural integrity to qualify under Criterion C, and a smaller number have associations with historically important individuals and could be ascribed significance under Criterion B. It should also be remembered that mining sites without individual distinction may be considered significant if they are



important elements of a mining landscape. The National Register eligibilities of the 1,983 sites recorded as historical archaeological mining properties in the state, according to the Compass database as of 2004, are presented by county in Table 29. Considerable variability in site significance evaluations is evident between counties. One general trend seems to be that mine sites in coal-mining areas are less often ascribed significance than mining sites in other areas. A more pronounced variable in significance can be attributed to other factors, primarily the ability of the recorder to properly research the history of a mining property and identify the artifacts present, understand its historical context, and evaluate its archaeological potential.

Of particular importance in the overall trends of significance evaluations of mining sites in the state is that at least 667 of the 1,983 mining sites recorded as historical archaeological properties have been recorded by the Colorado Division of Mining and Geology, usually as part of their preparation for the closure of unsafe openings. This is fully one-third of all of the mining sites recorded in the state as historical archaeological properties. As can be seen in Table 30, before 2004 the Colorado Division of Mining and Geology had a propensity for recommending the sites they have recorded as not eligible, with only 2.5 percent of the sites they have recorded being considered significant. The influence of their recordings in Gilpin County is particularly notable. When compared with the overall trend of 20.4 percent of mining sites being considered significant in the state (data that include the Division of Mining and Geology sites), the disparity is obvious. It is clear that significance evaluations made by the Division of Mining and Geology should be considered suspect. An examination of a sample of site forms prepared by the Division of Mining and Geology from before 2004 show that the sites are poorly recorded – often focusing on only the opening considered for closure; the sites are poorly researched – often with only the inspector’s reports and superintendent’s reports on file with the Division of Mining and Geology used for information; and inappropriate site boundaries utilized – frequently large areas are included, but clearly not fully examined or recorded, or multiple unassociated mines are included within a single recording. The problems with the recordings and evaluations by the Division of Mining and Geology are no longer ongoing, having been rectified through the hiring of outside consultants to conduct their cultural resource inventories. However, all recordings and evaluations of sites made by the agency prior to 2004 should be considered skeptically, and the sites should probably be completely rerecorded and reevaluated.

**Table 29.** National Register eligibility recommendations for recorded historical archaeological mining sites by county from Compass Database 2004 (row percentages in parentheses).

County	Eligible	Not Eligible	Need Data	Unknown	Listed NR/SR	Total
Adams		1 (100)				1
Alamosa				1 (100)		1
Boulder	18 (15.0)	85 (70.8)	6 (5.0)	11 (9.2)		120
Broomfield		1 (100)				1
Chaffee	6 (7.1)	74 (88.1)	1 (1.2)	2 (2.4)	1 (1.2)	84
Clear Creek	13 (6.0)	133 (61.9)	9 (4.2)	59 (27.4)	1 (0.5)	215
Conejos		1 (50.0)	1 (50.0)			2
Custer	1 (3.2)	29 (93.5)	1 (3.2)			31
Delta		2 (100)				2
Dolores	2 (7.1)	24 (85.7)	2 (7.1)			28
Douglas		11 (84.6)	2 (15.4)			13
Eagle	1 (16.7)	5 (83.3)				6
El Paso	1 (50.0)	1 (50.0)				2
Fremont	2 (11.1)	12 (66.7)	3 (16.7)	1 (5.6)		18
Garfield	2 (13.3)	9 (60.0)	3 (20.0)		1 (6.7)	15
Gilpin	27 (8.1)	273 (81.9)	23 (6.9)	10 (3.0)		333
Grand		13 (81.2)	3 (18.8)			16
Gunnison	5 (12.2)	33 (80.5)	1 (2.4)		2 (4.9)	41
Hinsdale	7 (30.4)	11 (47.8)			5 (21.7)	23
Huerfano	2 (10.5)	15 (78.9)	2 (10.5)			19
Jackson	3 (18.8)	9 (56.2)	3 (18.8)	1 (6.2)		16
Jefferson		25 (73.5)	7 (20.6)	1 (2.9)	1 (2.9)	34

County	Eligible		Not Eligible		Need Data		Unknown		Listed NR/SR		Total
Lake	59	(39.9)	54	(36.5)	16	(10.8)	19	(12.8)			148
La Plata	1	(6.7)	13	(86.7)	1	(6.7)					15
Larimer	1	(2.3)	40	(93.0)	2	(4.6)					43
Las Animas	5	(31.2)	6	(37.5)	1	(6.2)	3	(18.8)	1	(6.2)	16
Mesa	9	(20.4)	26	(59.1)	6	(13.6)	3	(6.8)			44
Mineral	12	(48.0)	11	(44.0)	2	(8.0)					25
Moffat	2	(25.0)	5	(62.5)	1	(12.5)					8
Montezuma	2	(16.7)	7	(58.3)	3	(25.0)					12
Montrose	4	(13.3)	23	(76.7)	2	(6.7)	1	(3.3)			30
Ouray	5	(13.2)	6	(15.8)	12	(31.6)	15	(39.5)			38
Park	10	(20.4)	35	(71.4)	4	(8.2)					49
Pitkin			2	(66.7)					1	(33.3)	3
Pueblo	2	(66.7)	1	(33.3)							3
Rio Blanco	2	(50.0)	2	(50.0)							4
Rio Grande	1	(16.7)	3	(50.0)			2	(33.3)			6
Routt	3	(10.0)	26	(86.7)	1	(3.3)					30
Saguache	1	(4.2)	15	(62.5)	7	(29.2)	1	(4.2)			24
San Juan	15	(50.0)	11	(36.6)	4	(13.3)					30
San Miguel	15	(42.9)	16	(45.7)	2	(5.7)	2	(5.7)			35
Summit	8	(15.3)	42	(80.8)	1	(1.9)	1	(1.9)			52
Teller	157	(45.6)	160	(46.5)	16	(4.6)	10	(2.9)	1	(0.3)	344
Weld			3	(100)							3
<b>Total</b>	<b>404</b>	<b>(20.4)</b>	<b>1,274</b>	<b>(64.2)</b>	<b>148</b>	<b>(7.5)</b>	<b>143</b>	<b>(7.2)</b>	<b>14</b>	<b>(0.7)</b>	<b>1,983</b>

**Table 30.** NRHP eligibility recommendations for sites recorded by the Colorado Division of Minerals and Geology prior to 2004 (row percentages in parentheses)

County	Eligible		Not Eligible		Need Data		Total
Boulder	3	(5.8)	46	(88.5)	3	(5.8)	52
Chaffee	1	(8.3)	9	(75.0)	2	(16.7)	12
Conejos			2	(100.0)			2
Custer			5	(100.0)			5
Douglas			2	(100.0)			2
Fremont			1	(50.0)	1	(50.0)	2
Garfield			5	(83.3)	1	(16.7)	6
Gilpin			239	(95.6)	11	(4.4)	250
Grand			4	(100.0)			4
Gunnison			21	(100.0)			21
Hinsdale			6	(100.0)			6
Huerfano			5	(83.3)	1	(16.7)	6
Jefferson			2	(100.0)			2
Lake			18	(85.7)	3	(14.3)	21
La Plata	1	(12.5)	6	(75.0)	1	(12.5)	8
Larimer			24	(96.0)	1	(4.0)	25
Las Animas			3	(60.0)	2	(40.0)	5
Mesa			16	(84.2)	3	(15.8)	19
Mineral			10	(76.9)	3	(23.1)	13
Moffat			1	(100.0)			1
Montezuma			2	(100.0)			2
Montrose			8	(100.0)			8
Ouray			6	(75.0)	2	(25.0)	8
Park	1	(5.0)	17	(85.0)	2	(10.0)	20
Pitkin			1	(100.0)			1
Routt			4	(66.7)	2	(33.3)	6
Saguache	1	(5.9)	9	(52.9)	7	(41.2)	17

County	Eligible		Not Eligible		Need Data		Total
San Juan	1	(11.1)	6	(66.7)	2	(22.2)	9
San Miguel	1	(11.1)	7	(77.8)	1	(11.1)	9
Summit			6	(100.0)			6
Teller	8	(6.8)	94	(79.7)	16	(13.6)	118
Weld			1	(100.0)			1
<b>Total</b>	<b>17</b>	<b>(2.5)</b>	<b>586</b>	<b>(87.9)</b>	<b>64</b>	<b>(9.6)</b>	<b>667</b>

### Areas of Significance

The significance of mining and mineral processing properties is ultimately derived by the establishment of links with a variety of data categories of themes that are considered important to history under the National Register guidelines (National Park Service 1997b; Noble and Spude 1992). Ascribing significance under the industry theme alone is difficult; significance will generally be better determined when associations with secondary themes are considered. Such secondary themes include commerce, community planning and development, engineering, ethnic heritage, exploration/settlement, invention, labor, landscape architecture, military, politics/government, and social history. Indeed, mining and mineral processing sites often have important links to the social history of a community, including politics and government, as Keane and Rogge state:

Mining districts were important local government entities; great wealth generated by some mining ventures was sometimes directed at achieving political influence....The social structure and organization of mining communities are important elements of the social history of the American frontier. (1992:81)

For instance, labor systems, including working conditions, worker safety, wage systems, development of unions, and labor strikes, are important themes in the history of mining in Colorado, components of which may be significantly associated with specific mining sites (Keane and Rogge 1992:81). Additionally, various ethnic groups were often constituents of mining labor forces and this theme is considered to be one of the more important research questions relating to western mining settlements (Hardesty and Firby 1980:1).

Evaluating a historic mining and mineral processing site in relation to one or more of these themes depends on assessing the available archaeological data within a specific temporal and spatial framework. For instance, different regions or different periods of regional economic conditions are expected to be recognizable in patterned differences in material culture (Buckles and Buckles 1984:9). Additionally, for features that are characterized as mining-related archaeological resources, such as waste rock dumps, mine shafts, ore chutes, building foundations, and railroad grades, it is necessary to link the resource to a specific property type before any evaluation of significance can be undertaken (Hardesty and Little 2000:140). As listed in Table 27, page 322, a number of key property types linked to mining and mineral processing historic sites are identified based on the three fundamental stages in mineral processing – extraction, beneficiation, and refining – and also property types associated with mining settlements and landscapes (Hardesty 1990:24-25). In the section “Manifestation of the Theme in Colorado’s Archaeological Record” on page 302, an archaeological matrix was presented to provide a means for interpreting the array of archaeological features at a specific site under investigation in a standardized manner.

A systematic approach for evaluating mining and mineral processing properties was developed by Hardesty (Hardesty 1990:48), involving a process of investigation based on three different scales of analysis, as shown in Table 31. Under this system, a historic mining and mineral processing property becomes eligible for listing on the National Register if it can be used to address at least one of the topics within the evaluation matrix (Little et al. 2000:33). However, for any cultural resource, the value of the information that can be potentially derived through archaeological investigation is dependent on having sufficient integrity.

**Table 31.** Evaluation matrix for mining and mineral processing historic properties (Hardesty 1990:48).

Research Domain	World System	Region	Locality
Demography	Comparative data on patterns of mining frontier demography	Patterns of occupation/ abandonment in district	Interpretation of household population
Technology	Adaptive variety and change in industrial and appropriate technologies on the mining frontier	Adaptive changes in industrial technologies imported into district	Interpretation of mining/milling technologies
Economics	Adaptive patterns of economic production and distributions on the mining frontier	Patterns of economic distribution and production within the district	Interpretation of household consumption and production
Social organization	Patterns of mining frontier social structure and change	Patterns of “colony” social structure and ethnic relations	Interpretation of household status and ethnicity
Ideology	Emergence of “syncretic” mining frontier ideology	Interaction of Victorian and ethnic folk cultures	Interpretation of household ideology

As stated above, demonstrating the general process of fluidity and evolution within the industry at a specific archaeological site would be of great significance. In this regard, the evolution of mining technology becomes a key theme for the evaluation of mining districts (Hardesty and Little 2000:140). In addition, the documentation of innovations and inventions within the mining industry as a whole to a site-specific level is also of significance because archaeological sites can display aspects of local adaptation and invention.

### Periods of Significance

Periods of significance for historic mining sites will be on a site or region-specific level tied to the history of a particular mine or mining district. A quick summary of mining in Colorado provides a general sense of mining periods that can be ascribed to Colorado’s mining sites. Initial mining in the state was focused upon placer gold deposits on streams emanating eastward from the Rocky Mountains. The period lasted only a few years, from 1859 to the middle 1860s, when the easily worked deposits were largely exhausted and the Civil War intervened. This time was largely an uncaptialized period of mining and mineral exploration that led to the discovery and exploitation of hard-rock mineral deposits beginning in the late 1860s and early 1870s. Very productive deposits were discovered throughout the mountains of Colorado that stimulated capitalization of mining ventures by investors from the eastern United States. Fantastic discoveries of rich silver deposits, particularly in Leadville in the 1870s and early 1880s, led to rampant mine speculation that made some investors rich but resulted in considerable financial loss to many who were taken in by unscrupulous promoters. More measured investment in the later 1880s and 1890s resulted in solid mining ventures being undertaken in the Leadville area and the San Juan Mountains. The fall of silver and the resulting Panic of 1893 caused a downturn in the mining industry of the state that was made up for in a few years by new gold discoveries and increased production by gold mines in existing mining districts. In the late 1890s, discovery of rich gold deposits in Teller County caused a new mining boom focused on the Cripple Creek area. An increased demand for base metals soon after 1900, extending through World War II, increased production at many of the existing mines in the state. The war effort created a demand for strategic metals, such as vanadium and molybdenum, used in the manufacture of hardened steels. The expanded production of those metals opened new areas to mining. Following World War I, mineral prices dropped. That, in turn, caused precious metal mining on a large scale to decline considerably, with many major producers going out of business. During the Depression years of the 1930s, somewhat of a resurgence in mining took place among small operators working at a subsistence level. At the same time, the holdings of marginal or defunct mining companies began to be consolidated by companies hopeful that the mineral industry would bounce back. This trend continued through the 1970s and companies, such as the Idarado Mining Company, acquired large holdings of mining claims that were operated below ground in a streamlined fashion through a limited number of access points. In the 1930s, mine waste dumps began to be systematically reprocessed, often using portable mills. This reprocessing accelerated with increased demand for strategic metals during World War II. Development of the atomic bomb during World War II resulted in exploration for uranium by the U.S. government. Cold War weapons production and the growth of the nuclear power industry from the late 1940s through the middle 1970s created a demand for uranium that put a

large number of citizen prospectors in the field and resulted in the development of numerous uranium mines on the Colorado Plateau and elsewhere in the state.

### **Integrity**

The historic integrity of a mining and mineral processing site may have a strong influence on determining whether it is significant. Integrity under the National Register guidelines considers qualities of location, design, setting, materials, workmanship, feeling, and association. However, an inherent problem in assessing the relative significance of industrial sites is that the fluid, evolving nature of the industry and associated social landscapes (largely a result of technological evolution and the productivity cycle) has resulted in a situation whereby different scales of operation developed in particular areas or during particular time periods. Additionally, the historic stages of development are often obscured by more recent developments (Hardesty 1990:48). For example, the early old gold mining camp at the abandoned town of Hamilton, two miles north of Como in Park County, is mostly buried beneath the waste from subsequent dredging operations along Tarryall Creek (Southworth 1999:82). Such factors create difficulties in assessing significance. All too often a general lack of integrity is pronounced and insignificance is proclaimed. Issues of integrity are probably a major reason that fewer than 10 percent of the 2,400 National Historic Landmarks (NHL) in the United States relate to industrial production processes, business, energy, or extraction and mining themes (Bodurow 2003:71-72).

When assessing the integrity of historic mining sites, the words of Noble and Spude are of utmost importance:

Because most historic mining properties will be abandoned and in poor repair, special care must be taken when evaluating integrity. The integrity of a mining property can not be judged in the same fashion as the integrity of a building....Although...individual components may appear to lack distinction, the combined impact of these separate components may enable the property to convey the collective image of a historically significant mining operation. In essence, the whole of this property will be greater than the sum of its parts. In such cases, a mining property may be judged to have integrity as a system even though individual components of the system have deteriorated over time. (1992:19)

## **RESEARCH NEEDS**

### **Quality of Recovered Archaeological Data Relevant to the Theme in Colorado**

The analysis of archaeological data in the Office of Archaeology and Historic Preservation database pertaining to mining and mineral processing sites demonstrates the unevenness of site recordation and the resulting limitations on the database rather than any actual archaeological patterning that would be of value to future investigations of historic mining sites. In fact, the database analysis simply demonstrated that the archaeological data mirror broad patterns in history, with only minor significance to archaeology. The ability to identify any archaeological characteristics that may provide a mechanism for distinguishing between sites attributed to different time periods is quite limited mainly because consistency in recordation is lacking. Inconsistencies stem largely from a lack of uniformity in nomenclature in the description of site elements, a frequent inability to adequately identify historic artifacts and utilize them for temporal and functional interpretation of a site, and a recurring lack of site- and regional-specific historical research that would help place sites into proper context. Clearly, consistent recordation techniques and excellent scholarship are needed to generate the good quality data necessary to further archaeological research into mining and mineral processing sites in the state.

Beyond basic recordation, few sites have been subject to archaeological investigation in the state. Mine reclamation work at Leadville, Cripple Creek, and a few other places around the state have resulted in some mitigative documentation of mining features but there have been no real archaeological investigations of mining facilities. Somewhat more common has been archaeological investigation of associated residential components. The best and most publicized of these has been the work done at Ludlow (Ludlow Collective

2001; McGuire and Reckner 2002; Wood 2002b). Although not specifically a mining component, the work at Ludlow has focused on the inequities of labor at the coal mines of southern Colorado and has been very successful in exploring topics related to underrepresented groups, including minorities and women. In this regard, the research was able to illuminate topics important to our understanding of the industrial history in Colorado, with the mining connection really being secondary. Along these same lines is a smaller study of an Italian community associated with the Ute-Ulay Mine in Hinsdale County (Ringhoff 2002a). Again, the actual context of mining is secondary to the social, economic, ethnic, and labor issues that surround the site.

### **Potential for Good Quality Archaeological Data to Exist for the Theme at Sites in Colorado**

Given the sheer number of mining and mineral processing sites and features in Colorado, excellent potential exists for good quality archaeological data. Despite the excellent resource base, recognition of archaeological potential at mining and mineral processing sites has been poor. It is clear that two possibly interrelated problems are affecting the pursuit of archaeological data recovery at historic mining and mineral processing sites in the state. The first problem is that the archaeological values of mining sites in the state are being underestimated by researchers, and the second is that mining and mineral processing sites are not being recorded in a standardized or complete fashion that enables those sites to be adequately considered for significance under National Register Criterion D. The interrelatedness of these problems is that a preconceived notion of unimportance or an unfamiliarity with the archaeology of mining sites leads to poor recordation and poor recordation leads to conclusions of insignificance. A further complicating factor with mining and mineral processing sites is that they range from simple to very complex, and the complex sites are difficult to deal with on a variety of levels. Simple mining sites are rather ubiquitous and redundant, often consisting of little more than a shallow pit with removed soil and rock adjacent. These sites are easy to record and quite easy to dismiss as lacking further research value. As sites become more complex, the variety of features and associated artifacts increase exponentially. This complexity, coupled with disturbance from the mining itself, equipment upgrading, and plant modifications, creates an industrial landscape that is often very unappealing. Subsequent equipment and plant removal, salvaging, and deterioration often leaves a mine or mineral processing site with a sense of devastation that is not often easy to look beyond, both when a large quantity of debris is still present or when a site has been stripped of equipment or constructed elements. In these disfigured environments, it is important to look past initial perceptions and recognize areas that have specific data of importance to offer.

Mining and mineral processing sites are often a mix of industrial components and residential components that need to be treated differently. The industrial components have technological information to offer that can often be recognized by equipment, machinery mounts, and architectural elements. These can be documented in the field through drawings, photography, and written descriptions, and then fleshed out by historical research that is both site specific and technology oriented. That is, the physical remains of a mine or mineral processing site can be understood by knowing the history of the site and the technology of the processes that took place there. Often the physical remains are the catalyst for determining what the technological processes were. Archaeology can play an important role in revealing specific technological elements obscured in a site by recovering artifacts characteristic of certain technologies or samples that may reveal chemical signatures of particular technologies. When plans of a technological layout are in hand for a particular site, such as from Sanborn fire insurance maps, archaeology can reveal whether a site was built in conformity to the plans and if and how it may differ from the plans, or it can show subsequent modifications or replacement. Archaeology in the pursuit of technological information can be very specific in scope and may be as simple as fully exposing a machinery mount so that it can be fully observed. It may be as complex as excavating materials from an assay office to understand the methods and processes being used. It is of utmost importance that adequate historical research be conducted for a site so that archaeological research is oriented toward answering important questions about technology. A failure to conduct adequate historical research or an absence of historical documentation should not be grounds for dismissing the importance of a mining or mineral processing site if archaeologically recoverable data are present. In all cases, but particularly where historical information about a site is minimal, a broad understanding of mining and mineral processing technologies is necessary to put a site into proper context on a regional scale so that it can be properly evaluated for significance. It is very possible that a mine without a remarkable history may contain

technological data of importance that can be recovered archaeologically. In recording the industrial components of mining and mineral processing sites, it is quite important that proper terminology be utilized in describing physical elements. Mining terminology is quite specific and numerous publications are available that define proper terminology. In addition, it is important to have an understanding of mining technology and mining and mineral processing technology so that the industrial processes evident at sites are properly described and sensible for the time and place. At most sites, very specific clues are present, even when equipment has been removed, that can inform as to what level of technology and what kind of equipment was in use. For an individual inexperienced in industrial technology, this task can be daunting. Up to the present time, inadequate recordation has been accepted for mining and mineral processing sites, as has inadequate historical research on both an individual site scale and overall contextual level. This practice has perpetuated a lack of appreciation for mining and mineral processing sites as places with archaeological value. The only way to prevent a continuation of this trend is for land managers to raise standards of acceptable reporting of industrial components of mining and mineral processing sites. Such standards should include conformity of mining nomenclature, descriptions of sites that include particulars of industrial process, historical research that includes mine ownership title transfers, mineral survey data, mine inspectors and mine superintendent's reports, other information available from newspapers and mining journals, and placement into context with the general mining or technological history of the region.

The archaeology of residential components will have a completely different focus than mines or mineral processing sites where industrial and technological aspects are of primary concern. Residential components will be investigated with more of an anthropological perspective, with the mining or mineral processing workplace being the common connection between households. A wide variety of households can be expected to be associated with mining. These include private or company-run boardinghouses, individual families of all socioeconomic ranks and ethnic backgrounds, single laborers, groups of laborers, management-level employees, and independent agents, such as assayers, mineral surveyors, freighters, and prostitutes. At any particular time or place, these household divisions can be compared and contrasted within or between groups to flesh out interpretations of everyday life important to understanding in the present day. For the most part, research has focused on reactions of everyday people to political or workplace oppression and racial prejudice and retention of ethnic or religious identity that is different from the overlying dominant culture. In general, the examination of mining households is similar to what can be done in the study of any community for which a common employment focus exists. In Colorado, mining communities are particularly pronounced and form an important class of sites for study. In many cases, mining communities sprang up and disappeared over a relatively short period of time. They are geographically restricted and many mining communities were never reoccupied. As a result, they provide excellent opportunities for study because they offer more moment-in-time data than sites with a broader economic base and longer tenure. Unfortunately, these very attributes, which make these sites such wonderful opportunities for research, are the same characteristics that have been used to denigrate them, whereas sites with long tenure with muddled archaeological deposits are held up as examples of utmost historical value. Generally, this is where archaeology collides with architecture and general history, with archaeological values not being as understood, sought, or valued. Lacking architectural elements or only containing architectural remains in poor or ruinous condition, sites are frequently described as being destroyed without consideration of their archaeological values. Individual mines with residential archaeological components can often yield very specific information about occupants through deeds and other sources. Occupants of residences in mining communities may be more difficult to place at specific households on the ground, particularly for communities where ownership was more informal and lots and blocks were not designated for tracking transfers of ownership. Still, historic information about residents may be garnered from a variety of historical records, including census data and courthouse records. Even without historical records in abundance, archaeology can provide important comparative information between households in terms of socioeconomic status, ethnicity, health and diet, habits and vice, household composition, recreational pursuits, education, compatibility with the dominant culture, participation in national markets, and self-sufficiency.

## **Known or Potential Sites within the Theme in Colorado That Should Be Sought, Reexamined, or Reevaluated**

All previously recorded mining and mineral processing sites in the state for which the industrial components have been poorly described and for which poor or no historical background research has been conducted should be considered candidates for reevaluation. In particular, any and all sites recorded by the Colorado Division of Minerals and Geology should be considered suspect, likely requiring completely new recording in the field and reevaluation under the National Register criteria.

### **Timber Industry**

#### **DESCRIPTION AND BACKGROUND**

The origins of the timber industry in Colorado corresponds to the initial growth and expansion of the mining industry, between 1860 and 1880, as mines across the mountains required constant supplies of wood for underground workings. The arrival of the Union Pacific Railroad in Cheyenne, Wyoming, in 1867, and rapid expansion of railroads throughout Colorado spurred the demand for lumber and provided a transportation outlet for lumber products. Railroad construction continued to provide impetus for a developing timber industry and became incorporated into some of the more developed logging operations of the state. Indeed, Chappell (1971) shows the clear connection between the lumber and railroad industries:

Soon it dawned on the lumberman that the railroad could not only carry finished lumber to market, but could carry raw logs from forest cutting site to sawmill plant. In this step the marriage between the industries was consummated, and the logging railroad was born. ...Initially suppliers of ties, these lumbermen very quickly moved into other markets. A diminished amount of railroad construction, coupled with the beginning of treatment of ties with preservatives such as creosote to lengthen their track life, meant a lesser demand for ties than during the early era of construction in this region. To survive, many who had begun as tie cutters had to become either partially or wholly lumbermen, catering to other markets. They soon supplied mine timbers, shingles, flooring, siding, and all the varieties of milled and finished lumber used in building construction (Chappell 1971:6).

In addition to being a support industry for mining and railroads, lumber was necessary for the construction of houses and buildings, so it can be considered to have been essential to the growth of towns and cities throughout the state. Demand for lumber and finished lumber products existed from the individual settler on the eastern Plains of the state to industrial giants. The need for lumber products by all consumers should not be overlooked. To supply the demand for lumber products on the Front Range and the eastern Plains, several of the large timber companies headquartered in Denver invested heavily in logging and sawmill operations in southwestern Colorado.

Passage of the Forest Reserve Act of 1891 initiated federal oversight of lands on the public domain set aside as forest reserves. Still, the 1895 to 1907 period saw increased logging and the establishment of numerous logging railroad systems on the public domain. Establishment of the U.S. Forest Service in 1905 and designation of additional lands as national forests over the next several years resulted in federal oversight on most of the forested and mountainous terrain in the western half of Colorado. Subsequently, several logging towns were established in Colorado, such as Edith and Chromo in the Colorado Plateau region and McPhee and Pagosa in southwestern Colorado.

The following summary of logging technology, logging crews, and logging camps is summarized and expanded upon from the study of a logging camp in eastern Oregon (Horn 1987). It corresponds to an archaeological matrix for logging and sawmilling sites presented in Table 32.



**Table 32.** Archaeological matrix for logging and sawmilling sites.

Size	Features and Technology	Logs Close to Market/Transport	Logs Distant From Market/Transport	Date Ranges
Small	Single-bladed ax, hand saw, logs not milled; oxen, horses and mules for skidding; skid trails; wagons, slides; log chutes on steep hills	Close proximity to building site or industrial complex, logging camp with low frequency of scattered artifacts, difficult to discern other than stumps leveled areas for tents. Not considered a commercial venture		Pre-1880; persists into later periods in isolated areas.
Medium	Double-bitted axe and crosscut saws; chainsaws after mid-1940s; donkey engines, horses, and wagons; trucks after 1920; reciprocating and, later circular saws.	Logging along rail lines and sawmills on rail lines, commercial production, some capital investment, small developed camp with multi-function log or frame buildings.	Logs roughly cut at small, usually portable, sawmills for easier shipment to finishing plants in town, transport via wagon or flume. Some capital investment. Small crews. Small developed camp with multi-function log or frame buildings	1870 onward; likely filled niche in remote regions with a local market.
Large	Double-bitted axe and crosscut saws; chainsaws after mid-1940s; donkey engines, horses, and wagons; logging railroads; trucks after 1920; circular saws with replaceable teeth; band saws after 1910.	Large sawmills built on existing rail lines, logging railroads built to access more distant stands of trees. Large capital investment, highly developed camps with numerous framed buildings, dense artifact concentrations, fully commercial.	Large sawmills built near tracts of timber that could be worked for a long time. Large capital investment, logging railroads built to access more distant stands of trees and to connect mill to main rail lines, developed camps with diverse function, framed buildings.	1880s onward with surge after increased number of rail lines.

### Logging Technology

Technology and demand dictated the manner in which logging was done and where it could be done economically. Prior to 1900, a certain amount of logging was done specifically for immediate use close to a building site or industrial complex, such as a mine. In these cases, suitable trees were cut, usually with an ax, and pulled a short distance by horse or oxen to the place where it was to be used. Little shaping or finishing was done to the log beyond cutting to length, adzing one or more sides flat, or notching. No finished lumber was produced in these situations, and the work cannot be termed commercial in any way. Commercial logging was necessary where demand for lumber exceeded timber sources close at hand.

The productivity of a logging operation depended on the methods used in cutting and processing timber. The two main factors that influenced the manner in which an operation worked were economics and geography. The geographical area in which a company was operating had the most visible effect on an operation.

Geography determined where a sawmill could be placed for best economic benefit. If timber was near a potential market or transportation link, the sawmill could be placed where convenient. If the timber was at some distance from a population center or transportation link, other arrangements had to be made. Two choices were possible: 1) logs could be brought to a mill placed at a convenient point for export or sale or 2) a mill could be brought to the timber. In the first instance, railroads, wagons, or log drives could be used to transport logs to a mill if sufficient capital or geographic conditions existed. In the second, logs could be reduced and partially finished, resulting in a more transportable product that could then be economically transported to market by flume or wagon.

Sawmills in isolated, mountainous, heavily timbered areas of the country were at a disadvantage because of higher construction and maintenance costs not to mention problems of transportation (Erickson 1965:180). However, in the southern Rocky Mountains, trees of merchantable size were usually quite distant from population centers. Consequently, economical methods of processing and transportation were

implemented in response to geographic constraints. First preference for a sawmill site was along an established railroad line. The next best choice was a situation where a mill could be placed on fairly level ground with access to a good water source and near large tracts of timber that could be worked profitably for a long period of time. In many parts of the country, stream courses could be used to float logs to mills downstream or sufficient water could be diverted to flume logs or rough-cut lumber to a mill (Erickson 1965:179). In Colorado, neither of these conditions satisfactorily presented itself, and water transportation seems to have been rarely used. Before rail connections became extensive in Colorado, most mills were limited to production aimed at local consumption rather than export. Out of necessity, mills were usually small and portable. Even with increased railroad networks, many areas of Colorado did not have adequate access to distribute beyond the local area. Where level tracts of well-timbered lands existed, such as north of Dolores, in the Mancos area, and south into New Mexico, lumber companies invested their own capital in railroad equipment and constructed railroad logging systems into the woods. These logging railroads were connected to sawmills and export facilities on existing railroad lines.

Improvements in sawmills that increased output were a primary impetus for other technological advances in logging. Circular saws began replacing reciprocating saws in the 1860s (Cox 1974:234-235). Because of the speed that a circular saw could cut, lumber outputs increased markedly. Circular saw blades were improved with the introduction of replaceable teeth (Cox 1974:235), and, by the 1880s, replaceable teeth had become standard throughout the industry (Hogan 1921:39). This reduced downtime for maintenance and improved efficiency. Band saws seem to have been first used at sawmills beginning in the middle 1880s but were not regularly installed in sawmills until the 1910s, and then only by highly capitalized, high-output mills.

To meet the demands of higher output sawmills, logging techniques were improved (Erickson 1965:23). The double-bitted ax was introduced about 1878. This long-handled axe was less expensive and held an edge better than the single-bladed ax in use up until that time (Cox 1974:228). Crosscut saws had been used in the woods for bucking trees to length since the 1840s. Beginning in the 1880s, crosscut saws were used in conjunction with axes for felling trees. Kerosene was used to keep saw blades from binding with pitch (Smith 1904:441; Wall 1893:195). In addition to being much faster, crosscut saws could fell trees more accurately, resulting in less breakage of logs. Another benefit of quicker cutting was a reduced frequency of trees splitting up the trunk as they fell (Cox 1974:222). The proper length of a crosscut saw was determined by the typical girth of the trees being cut plus two or three feet of travel for saw strokes. In Colorado, like the east side of the Cascade and Sierra Nevada mountains, a saw six or seven feet long was sufficient (Time-Life Books 1976:92). Felling trees with crosscut saws prevailed until the adoption of the chain saw in the 1940s (Erickson 1965:23). Stumps from trees cut by chain saws bear distinctive cut marks that are more ragged in appearance than the marks left by crosscut saws.

Animals provided the necessary power for work in the woods. Oxen were used where timber was easily accessible and hauls were short. As skidding distances became longer, horses were used (Crosby 1930:1). Horses were smarter, faster, more easily handled, and had more stamina than oxen (Gibbons 1918:56; Kellogg 1976:4; MacKay 1978:165). They could stand cold weather, ate moderately, and were best adapted for logging smooth or rolling terrain. The working life of a horse in the woods was four to seven years (Bryant 1914:131). Mules were also in common use. Mules were more tolerant of heat than either horses or oxen. They were better adapted for long or hard hauls during the summer or in hot climates. They could stand rough treatment, were less excitable and more agile, and could perform more labor on poorer and less feed than horses (Bryant 1914:131-132). Horses and mules were used singly or in teams for skidding logs out of the woods. The number of animals used depended on the size of the timber; a horse is capable of moving about 1,000 board feet of timber per turn (Gibbons 1918:56). For heavy loads of timber or strings of logs, large teams of oxen were used (Bryant 1914:146; Felt 1978:16). Transport by wagon or "big wheels" was also common. Big wheels were a set of wheels beneath which one end of a log was lifted to facilitate its being dragged to a mill or loading facility. A strong leather harness was a necessity for horses and mules. When animals were used in pairs, either a set of double trees or a spreader and two single trees was required. For single animals, only a spreader was needed (Bryant 1914:150).

Neither oxen nor horses can skid logs for long distances. For moving timber efficiently for distances up to one mile, steam-powered donkey engines were used. These small, portable steam engines were developed in California in 1882 for logging redwoods. Improvements that increased the power of the engines were quickly made. Wire rope became available in the 1880s and rapidly replaced manila rope for use with the donkey engines (Carranco and Labbe 1975:41, 45; Cox 1974:231). By the 1890s, donkey engines had gained popularity in the Pacific Northwest (Carranco and Labbe 1975:51; Crosby 1930:2; Gibbons 1918:47; MacKay 1978:168), and their use certainly extended to the Rocky Mountains. They became affordable enough for smaller operators to consider their use by the late 1890s (Cox 1974:232)

The use of steam donkeys was quite economical, cutting the price of removing logs from the forest in half. They could bring logs in from greater distances and in less time than animals. By getting logs out of the woods faster, operators could keep production at a mill closer to full capacity (Lucia 1975:17). “Notwithstanding the almost instant popularity of steam donkeys, horses remained a factor in the woods until about 1900” (Crosby 1930:30). Single-drum donkey engines could not return line to the woods and depended upon horses to haul the line out to the downed timber (Kellogg 1976:6; Lucia 1975:17).

Once a logging operation had exhausted the timber within reach of animal power and donkey engines, the most economical method for reaching timber was the construction of a logging railroad. The enormous expenditure required for installing a railroad was prohibitive for all but the largest and most financially secure companies (Crosby 1930:4). In the 1920s, logging trucks entered the scene, providing an even more flexible and economical means of removing timber than logging railroads.

## **Logging Crews**

The size and composition of logging crews varied with the region and the timber harvesting methods used in the woods. In the northern woods of the Midwest, the average crew was composed of 65 men and 25 to 35 horses (Bryant 1914:61). In Canada, the number of men on a crew varied in size from 15 to 40 men per boss. These were divided into work gangs under sub-bosses (McArthur 1890:797). In the West, crews appear to have been smaller and may correspond better to the sub-crews of the Canadian woods. A typical logging crew of the 1870s consisted of a boss, one chopper, one teamster, one hook tender, two sawyers, one swamper, one skidder, two barkers, and one cook (Hogan 1921:37-38). The boss was in charge of the camp, kept the men’s time, bought the equipment, selected animals for teams, laid out skid roads, paid out the wages, and made sure the cook did a good job. The chopper felled the trees, the teamster drove the teams and took care of the animals. The hook tender beveled the ends of the logs and chained the logs together if they were being moved by oxen. The sawyers bucked the logs to length while the swampers cleared the route for skidding the log. The skidder kept the skid road in repair (if a skid road was being used). The barkers stripped bark from the side of the log on which it would be dragged (Hogan 1921:37-38; Hulbert 1904:804-807; Smith 1904:4441).

As logging technology changed to felling trees with saws and use of horses, mules, and donkey engines instead of oxen, the jobs of the logging crews were also modified somewhat. Two men with a crosscut saw, wedges, and sledge hammers were required to fell trees. The skidder and barkers were less necessary. Two men were needed to operate a donkey engine. A “donkey puncher” ran the machinery while a “woodbuck” cut firewood to feed the boiler (Huckleberry 1970:68-69, 77). Once a log had been skidded out with the steam donkey, a horse was used to return the line to the woods (Carranco and Labbe 1975:45).

In some places skidding operations became rather complex with wire rope, pulleys, and sheaves being used in conjunction with a steam engine to yard logs to a central location for loading onto wagons, trucks, or railroad cars. Skidding was often done on skidways that directed logs along a route on the ground or was facilitated by a spar tree to which a sheave block was attached and logs drawn to it through the air on a carriage running on a continuous wire rope system. In some cases temporary wire rope tramways were devised. Once at the central yarding area, cable systems were used to load the logs onto a conveyance, often using a boom. Through time steam engines were replaced by gasoline engines. Following World War II, heavy mobile equipment was applied to logging that included Caterpillar tractors, tracked skidders, and log

loaders. Also after World War II, chainsaws made felling trees and their preparation for skidding very efficient. With all of these innovations, the number of workmen required for a logging operation was greatly reduced. Improvements in logging equipment have also made it possible to log areas that previously were considered too steep and rugged.

## **Logging Camps**

Logging camps were common fixtures of logging operations until the improved personal transportation of the automobile made camps obsolete in the 1920s and 1930s. Several requirements needed to be fulfilled in considering where a logging camp would be placed. The first consideration was that it be central to logging activities in an area with large tracts of accessible timber for harvesting. Camps were usually in level, well-drained areas free of obstacles with a nearby supply of water for drinking, cooking, laundry, and stock. Last of all, the camp had to be accessible to supplies (Bryant 1914:56-57).

Buildings were usually one-story tall and of log construction. Chinking was done with slabs of wood, moss, clay, or mortar. Buildings were frequently floored with hewn timber or rough lumber and roofed with shakes or clapboard. Doors were of rough boards. Windows were difficult to install but a few windows were installed for light and ventilation. Buildings were seldom divided into rooms (Bryant 1914:52; McArthur 1890:797).

A typical logging camp in Oregon or Washington in the 1870s consisted of one large building with two or three small outbuildings. The main building was usually constructed of low-grade lumber and measured roughly 20 by 30 ft. This was divided into two rooms – one for the cook and the other for the crew. The cook's room contained a large cookstove, benches, and tables. The camp boss frequently had separate quarters and a building made of logs and shakes protected the oxen and their feed (Hogan 1921:137). Because of their isolation, camps had to be reasonably self-sufficient and resembled small settlements in the services they provided (McBride 1907:375). As time went on, the number and diversity of camp buildings increased. Later camps consisted of at least a cookhouse, office, store, bunkhouse, stable, and blacksmith shop (Hulbert 1904:803-804).

## **Sawmills**

Sawmills made more efficient use of timber by cutting logs into boards of various sizes. Early conversion of logs into boards was very labor intensive and consisted of cutting slabs from a log by two individuals on either end of a large whipsaw over a pit. One of the workers worked the saw from below, while the other worked it from above. Mechanization of the reciprocating saw action was a considerable improvement but was still a slow process in producing boards. Early reciprocating saws were powered by water wheels; later, steam engines were used as the power source. At the time of the Colorado gold rush in 1859, boards were either sawn by hand or with reciprocating saws. The advent of circular saws beginning in the 1860s stimulated commercial harvesting of timber in Colorado and the beginning of lumber production and marketing as an industry. Stands of timber along the Front Range were targeted first and facilitated building and residential construction at the burgeoning mining towns. Most of the initial sawmills in the region can be termed to have been small local-consumption mills with some larger mills positioned where their output could be transported by wagon to Denver. With the expansion of railroads throughout the state during the 1870s and 1880s, large-scale production was possible in some places, with the larger cities along the Front Range becoming centralized distribution points for lumber to meet the growing needs of farming communities throughout the eastern Plains and for the growing mining industry. Early lumber producers included Hallack & Brother, founded in Denver in 1866 and merged with the Sayre-Newton Lumber Company in 1883, and the McPhee and McGinnity Lumber Company, also of Denver. The importance of the lumber industry to the mining industry is exemplified by the establishment of the Tabor-Pierce Lumber Company by Horace Tabor in 1879. As areas, such as the Black Forest, became depleted of timber, the large lumber producers sought new tracts of commercially viable timber, which they found in the ponderosa pine belt of southwestern Colorado. Both the Hallack-Sayre-Newton Lumber Company and McPhee and McGinnity Lumber Company were well connected with the Denver & Rio Grande Railroad and capitalized

on the railroad's expansion. Through subsidiaries, such as the New Mexico Lumber Company, large commercial mills were constructed at key points along the railroad lines, including the establishment of company towns, such as McPhee near Dolores. These mills were technologically advanced in every way. They made use of circular saw technology and, beginning about 1910, band saws, which increased production even more. Some of the production was marketed locally, but most was exported to the Front Range, where it was shipped to outlets throughout Colorado and the nearby Plains states as basic lumber or finished products, such as window sashes, doors, and moldings.

Sawmills are industrial complexes consisting of numerous parts that are put together to enable production steps to take place in an economical and logical fashion. The first step in the process is delivery of logs to the plant. For a sawmill to work efficiently, a sufficient number of logs need to be kept on hand so that a shortage does not stop or slow production. This requires a large area for logs to be stockpiled and an efficient way for logs to be introduced to the stockpile from the woods by wagon, animals, or railroad. Logs then need to be introduced into the mill for sawing. Sometimes this is accomplished by floating the logs in a mill pond from which they are pulled into the mill, and other times they are simply dragged or carted to the saw.

Once in the mill, the logs are placed on movable carriages that enable the full length of the log to pass through the saw blade. The cut boards are then carried away, either manually or by some sort of conveyor for further processing by additional saws, such as edging and cut-off saws. These trim the boards to the desired lengths and widths. After proper drying, the boards are a marketable product that can be transported to a customer or can be further processed to make a more finished product. If a more finished product is desired, the rough-cut lumber can be sent to a planing mill, which essentially smooths its sides and edges. It may also be further cut and planed to make decorative moldings or window sashes or doors. Such specialty products require expensive equipment and skilled workers. Improved technology through time has resulted in economizing in all aspects of sawing and planing that has sped up each step, reducing both waste and the number of workers required. For instance, saw blades are now made of specialized materials that resist dulling, make thinner cuts, and cut at a higher speed, thereby reducing the frequency that blades need replacement or sharpening, diminishing the amount of wasted wood, and speeding the cutting process. Computers are now coupled with cutting equipment, maximizing the amount of usable wood products that can be produced from a log and streamlining the movement of logs through the blades.

All of the cutting and finishing steps result in the production of an enormous amount of sawdust, which needs to be disposed of in some way. In some cases, sawdust was simply removed from the plant and disposed of in large piles. In other situations, it was moved to a burner. Fire was a constant threat to sawmills, so burning of sawdust and wood scraps was done well away from the main sawmill plant and its stockpile areas, usually in large metal incinerators with spark arrestors. In recent years, burning of sawdust and wood scraps has run afoul of clean air laws, compelling the sawmills to find new economical uses for sawdust, often in the form of new products.

To have a good quality finished product, freshly cut lumber needs to dry. Careful drying of lumber prevents warping, checking, and cracking. At most sawmills in Colorado, lumber was put into large stacks outside the mill, with the boards separated from each other to allow air circulation. Considerable level space is necessary for stockpiling lumber while it is drying. In some instances, lumber was placed in a warm warehouse with a heat source, known as a kiln, to bring the moisture content in the wood down to acceptable levels.

The last step necessary at a sawmill is the transport of lumber or finished wood products to market. This process requires an efficient mechanism for loading lumber onto wagons, trucks, or railroad cars, entailing, at a minimum, sufficient room for loading to occur or special equipment to enable loading to take place.

At all sawmills, a skilled labor force is necessary to run and maintain the various pieces of equipment that are in use. A considerable force of unskilled labor is also necessary for the movement of logs into the

mill, movement of lumber or finished products out of the mill, and loading of finished products for transport to market. Smaller mills are more labor intensive than larger mills, which tend to be more heavily mechanized. For instance, at smaller mills, removal of sawdust from cutting or planing equipment would be a manual labor task, whereas at a larger mill, conveyor belts might be used for the same task.

Historically, sawmills have required a workforce to be on hand. At small sawmills, workers lived at the mill, often in a bunkhouse, or very close by. At larger mills in isolated settings, nearby residences formed a small community. At the very large mills, a company town of sorts was often developed, with housing and other amenities provided by the lumber company. As with mines or mineral processing plants, such situations form a dichotomous situation of industry and residential components side by side that can be identified through the archaeological remains but need to be treated and evaluated differently through industrial archaeological and anthropological archaeological perspectives.

## **MANIFESTATION OF THE THEME IN COLORADO'S ARCHAEOLOGICAL RECORD**

### **Archaeological Characteristics That Make Sites in the Theme Identifiable**

At the broadest level, one can expect to find three main types of logging-related sites: cutting sites, transportation sites, and processing sites (sawmills, planing mills). A more comprehensive list of artifacts, features, and sites is presented in Table 33. However, it is important to note that a logging operation is a complex social and technological system of different activities, and any archaeological investigation of logging and lumber production requires a regional and multidimensional scale of analysis.

#### **Cutting Sites**

The archaeological manifestation of cutting sites is perhaps best viewed at the level of landscape, by examining the size, condition, and distribution of forested areas visible today and interpreting this landscape through analysis of historic sources. Knight describes the Sheep Creek Timber site in Montana:

On the mountain slopes and ridges south of Sheep Creek, and ranging in elevation from 5,920 to about 7,000 feet, is evidence of former timber harvest activities. Not visible from the valley bottom because regenerated trees screen them from view. Cutting units, the areas from which timber was harvested, are nevertheless detectable in the present timber stands because the rotting stumps remain upright. A walk through the present forest reveals the stumps of large Douglas-fir trees (many with diameters of greater than 24 inches), the same species as now occupies the formerly cut-over stands. Because nearly all of the more recent timber harvest south of Sheep Creek has taken place in the last 26 years, the old cutting units are relatively easily demarcated. (1981:32)

A distinction between short stumping and high stumping (up to 40 inches above the ground) may provide evidence of seasonality in timber harvest operations; the high stumping is indicative of tree cutting when snow accumulation was considerable (Knight 1981:51). This practice is in contrast to high stumping in the Pacific Northwest, where cutting above the butt swell of large, old growth trees was necessary. Many operators preferred winter harvesting because of the relative ease of transporting logs across snow-packed landforms (Knight 1981:51). In Colorado, high stumps may be indicative of late season firewood cutting and charcoal production.

Also at cutting sites, one may expect to find associated harvesting objects, such as chain, wire rope, blocks and sheaves, one- and two-man crosscut or bucking saws, wedges, axes, log sleds, and parts of steam or gasoline engines, skidders, loaders, hoists, and chain saws. Skid trails, spar trees, and log loading facilities may be in evidence. Cutting sites also involved the establishment of camps and associated facilities. Camps were usually of log or board construction and, at a minimum, consisted of a cook house, a bunkhouse, and a stable (Bryant 1914:57-61). Some were portable and could be moved from place to place. Some camps associated with logging railroads used railroad cars pulled onto a siding as shelters and other facilities.

**Table 33.** Typology of logging remains (Brown and Elling 1981).

Remains or Site Types	Related Tasks	General Activity
<b>Artifacts</b>		
Broken, discarded tools; trash, cans, bottles, etc.	Trail and road construction	Construction/logging
Axes, saw blades, augers, wedges, springboards	Felling	Logging
Metal peelers, piles of bark	Peeling	Logging
Crosscut saw blades, broken handles	Bucking	Logging
Tongs, chains, yokes, cable, hooks, couplers, grease cans, barrel hoops, donkey engine parts, etc.	Transport	Skidding (forest to loading facility or forest to mill)
Broken circular or band saw blades, handles, machinery, sawdust piles	Sawing, edging, and trimming; lumber stockpiling	Milling
Tongs, chains, yokes, cable, hooks, couplers, wooden wheels, wagon parts	Transport	Hauling (mill to market)
Bottles, cans, pipes, pottery, discarded or broken tools, clothing	Shelter; food preparation; food consumption; waste disposal.	Labor/subsistence
<b>Locations</b>		
Logged areas	Felling	Logging
Landings	Transport	Skidding/hauling
Storage areas (near landings and skid ways)	Log stockpiling	Skidding/hauling/milling
Steam donkey locations	Transport	Skidding
<b>Linear Features</b>		
Crude trails, crude roads	Construction	Construction/logging/hauling
Skidways	Transport	Skidding
Skid roads	Transport	Skidding/hauling
Pole-chutes	Transport	Skidding
Wooden tramways, railroad hoists, railroad grades, railroad trestles, flume	Transport	Hauling
<b>Sites</b>		
Field camps	Shelter, food preparation, and consumption; equipment maintenance	Logging/skidding, Labor/subsistence
Permanent landings	Storage, transport	Skidding/hauling
Mill sites	Sawing, edging, trimming; lumber stockpiling	Milling
Mill town	Shelter, subsistence, labor, entertainment, recreation	Labor/subsistence Milling
Domestic/residence	Shelter, etc.	Labor/subsistence
Eating areas	Food preparation, consumption	Labor/subsistence
Privies	Waste disposal	Labor/subsistence
Trash pits	Waste disposal	Labor/subsistence
Landscapes:		
High stumps	Felling	Logging
Cutting unit	Felling	Logging
Trails, roads, railroads, skidways, skid roads	Construction, transportation	Construction/skidding/hauling

### Transportation Sites

The earliest method for transporting logs to saw mills used horses or oxen that could either drag the logs or haul them on a variety of heavy wagons, carts, big wheels, or go-devils. In some places, logs were hauled by animals on tram cars that ran on primitive rail systems similar to tramways for mining. In the winter, sleds were commonly used. In some parts of the country, it was preferred to haul logs across frozen

ground or on snow to overcome problems of rough topography (Bryant 1914:155-177). In some instances, logs were floated down a stream to the mill. For example, the first sawmill built near Pagosa Springs by Charles I. Loucks and E. T. Walker in 1879 sent railroad ties down the San Juan River to the Denver & Rio Grande Railroad at Juanita (Chappell 1971:28-29). Splash dams were frequently constructed on streams to provide the water surge necessary for log drives; it is not clear if that technique was ever used in Colorado, but examples have been documented in Wyoming. Where water was unreliable or flows were small, flumes, sometimes regulated by reservoirs, were sometimes constructed to transport logs, or more frequently, to transport rough cut lumber from a mill in the woods to a finishing plant in a nearby town. Most streams in timbered areas of Colorado carry insufficient water or are too rugged to be satisfactory for transporting logs. Flumes represented a large capital investment and their use has not been documented in Colorado. Animal power was the most common mode of transportation.

As easily accessible timber was exhausted close to railroad lines, loggers were gradually forced to cut timber farther and farther away from the main lines, requiring the extension of railroad spurs to access new stands of trees (Chappell 1971:14). Where large stands of timber existed in suitably gentle terrain, companies with sufficient capital sometimes constructed logging railroads. Logging railroads constructed to reach more distant stands of timber were considered temporary by their builders and were designed to be easily picked up and moved to new places. For this reason, and because steel rails and hardware were collected as salvage material upon abandonment of a grade, logging railroad routes frequently have variable integrity. The Montezuma Lumber Company railroad grade is a good example of this, as described by Newell:

In most cases, rails and spikes had been removed, leaving only isolated pieces of metal to suggest what had once operated there. In a couple of instances, one on private land and one in the Forest, ties had been left undisturbed, leaving no doubt as to what we were seeing. In other places raised roadbeds with buried rotting ties gave a visual impression that could be photographed. Occasional spikes or base plates added evidence. Then there were other spots where there were no ties and no metal. In such cases one had to "think" like a locomotive", or perhaps more precisely, like a track surveyor. (1985:3)

In some places, evidence of skidding of logs will show clear evidence of logging, usually in conjunction with a loading facility or sawmill. Such features will include skid trails, slides, chutes, and loading platforms. Skid trails were frequently lined with logs or poles that helped direct logs along the route using animals or a cable yarding system. It was not uncommon to grease the wood lining to reduce friction. Slides or chutes were used to transport logs short distances, usually down steep slopes (Bryant 1914:230-241). They also were often lined with poles, split logs, or lumber to assist downward movement. A description by Knight of a log chute at Sheep Camp in Montana is insightful in characterizing this type of archaeological feature:

Because it remains recognizable for most of its length (though it has settled and been partly covered by forest duff), one is able to observe in detail the design of the Allen Gulch log chute. It was built of two parallel lines of poles (logs of about 10-inch diameter) laid end-to-end and secured by short crossties which would have prevented the poles from separating under the weight of the logs being slid through the chute. As evidenced by still-visible marks in the wood, each piece was worked with an adze until almost half of its circumference was removed, thus providing a flat, smooth surface generally six to eight inches in width. When the poles were lain side-by-side, the flat surfaces were turned inward, forming a shallow, V-shaped trough. (1981:29)

Log stockpiling and loading areas are another important feature of cutting sites, as described by Knight (1981:39):

Placing bucked logs in piles where they awaited transfer to another location, a practice to which loggers referred both as decking and "yarding," has persisted from early days to the present. In some log drives, particularly those conducted in timber bordering a large stream or river, logs were decked on the banks of the stream to be floated. As operations moved away from the water, it was considered



more expedient to locate log decks inland, either near or within the cutting units. It will be recalled that on Sheep Creek, log decks do exist in the cutting units, and consist uniformly of 15 to 15.5-foot logs.

### **Processing Sites**

Many smaller logging operations utilized portable mills, summarized by Bryant (1914:421):

The portable mill operations in this state [Colorado] are taken as a type of small operations on the National Forests. The mills are often several miles from a village at rather high elevations in the forests where the topography is rugged and the snow is deep during the winter season. The stand is chiefly small-sized timber, with logs averaging from 10 to 12 inches in diameter at the small end, and from three to four and one-half 16-foot logs per tree, when cut to a top diameter of 6 inches. The closeness of utilization depends largely on the local markets, and the purpose for which timber is used. When waney-edge boards can be used for packing cases and other rough work there is very little waste, but when the demand is for lumber only the mill waste is large.

Portable sawmills were the solution to reaching distant stands of timber for those unable to afford the costs of installing a logging railroad where terrain was too steep for railroad installation or where stands of merchantable trees were too small for the larger companies to be interested. One locational characteristic expected for the earliest mills is proximity to a water source, because steam power required large quantities of water for boilers. Later gasoline-powered mills did not have such a requirement.

Mills and other woodworking plants along railroads or in industrial settings contained a variety of specialized pieces of equipment. For instance, in 1927 the Robinson Lumber Company in Denver was a well-equipped lumber processing mill that possessed two surfacers, five jointers, one matcher, one drum sander, one belt sander, one universal saw, three combination saws, three rip saws, one crosscut saw table, one scroll saw, one hand lathe, one sash clamp, one door clamp, one end tenoner, one sash sticker, two molders, one horizontal boring machine, one hand veneer press, one self-feed rip saw, two swing cutoff saws, one shaper, three mortisers, two routers, one pulley machine, three Emery grinders, two dry kilns, and nine trucks (Timberman 1927). In contrast, sawmills in the woods were usually very basic, intending to cut timber to basic dimensional sizes so that it could be efficiently transported by wagon. Those with rail service were considerably better equipped and often had planing facilities and an ability to manufacture sash and doors, moldings, or boxes. More commonly, planed dimensional lumber was shipped to specialty mills that did finish work or made particular wood products. What is of relevance to archaeology, however, is how the physical evidence provides data on the design, layout, and construction of features not described in documentary sources (Brown and Elling 1981:130).

Other attributes of mills and associated facilities are their organization and social structure. A dynamic mix of people were involved in logging operations, especially with the development of satellite centers or support communities, providing an opportunity for archaeological investigations aimed at examining cultural and social differences within the population. Lumberjacks and sawmill workers were often transplants from other parts of the country where timber had been exhausted. A general pattern of worker migration took place first from the northeast to the Great Lakes region and then to the Pacific Northwest. It is uncertain whether this general migration is reflected in the composition of laborers engaged in the timber industry of Colorado. In other parts of the country where lumber was a principal industry, workers moved from camp to camp as they felt the urge. In Colorado, where logging was not so prevalent, it is uncertain whether this pattern of mobility existed or was even possible. In addition, loggers and sawmill workers tended to be culturally diverse. It is uncertain what ethnic diversity may be represented in the logging industry labor force of Colorado through time. A considerable amount of information about logging camps and organization of the industry exists for other parts of the country that could be utilized for comparative purposes in Colorado. These include logging studies in California (Brown and Elling 1981; U.S. Forest Service 1980), a study of logging camps in Wisconsin (Franzen 1992), a study of logging railroads in New Mexico (Glover 1984), and excavations of logging camps in eastern Oregon, Montana, and Wisconsin (Horn 1987; Knight 1981; Richner 1986).

## **Representation of Site Types in State Database**

### **Sites within the Theme Recorded in the State**

An examination of the OAHP online Compass database revealed that 196 sites associated with the timber industry have been recorded in the state. Of these, 119 are sawmills, 42 are logging camps, 3 are logging features, and 32 are company offices or lumber product outlets. None of the offices and outlets has been evaluated for archaeological potential. In addition, portions of at least three logging railroad networks have been recorded in southwestern Colorado. Only 10 of the 119 sawmill sites (8.4 percent) have been evaluated as National Register-eligible, either officially or in the field, whereas 76 (63.9 percent) have been evaluated as not eligible officially or in the field. An additional 23 sites (19.3 percent) have been officially determined or field recommended to require additional data before an evaluation of eligibility can be made. Two sites are unevaluated, and eight are in existing National Register districts. Of those in National Register districts, seven are within the Walker Ranch Historic District (5BL235). These were unofficially suggested to contribute to the historic district but were not considered individually eligible for the National Register. However, none were evaluated for significance in terms of their archaeological values. Sawmills were recorded with dates ranging from the 1850s to the 1970s, with most dating between the 1900s and 1940s; however, nearly half of the sawmills have no dates of operation indicated for them on the forms.

Many more logging camps than sawmills have been considered significant. Of the 42 logging camps that have been recorded, 12 (28.6 percent) have been considered National Register eligible, whereas 23 (54.8 percent) have been considered insignificant. One logging camp is in the Walker Ranch Historic District and, like the sawmills, has been unofficially suggested to contribute to the historic district but not be individually National Register eligible. Another six sites (14.3 percent) are in need of additional data before a significance evaluation can be made. Logging camps were recorded with dates ranging from the 1860s to 1950s, with most dating to the 1910s to 1930s. Again, nearly half of the logging camps have no dates of occupation indicated for them on the forms.

### **Adequacy of Recordation and Evaluation**

Examples from the Compass database illustrate that timber industry sites are generally poorly recorded. As noted above, nearly half of the sites recorded in the state lack date ranges, and several have very generic date ranges, suggesting both inadequate historical background research and poor use of historic artifacts to ascertain when a site was occupied. Like mining sites, sawmills are clearly undervalued by recorders. This perception may be because equipment from sawmill sites has usually been removed and recorders generally fail to evaluate the remaining physical characteristics of the sites and understand their archaeological potential. A clear built-environment bias is also evident in the recordings. If standing structural remains have disappeared or are in ruins, the sites are frequently described as being disturbed or destroyed, seemingly without comprehension that evidence of site layout very likely exists archaeologically. Logging camps exhibit less of this bias, as evidenced by the considerably greater number of sites recommended as significant. This recommendation is made most likely because there is less of an expectation for standing architecture at camps and, evidently, the abundance and variety of artifacts are often difficult to ignore. It would be expected that the quantity of logging camps should far exceed the number of sawmills on the ground and in the database. However, nearly three times the number of sawmills than logging camps have been recorded. This anomalous situation may have two explanations. The first is that timber operations in the state may have been small and sawmills served as bases from where timber cutting crews worked. The second explanation might be that logging camps are not being recognized by recorders for what they are and perhaps are being recorded more generically as artifact scatters, camps, or cabins.

Examination of a sample of site forms for sawmills illustrated that the field recordation has often been quite detailed in documenting artifacts, structures, and features. However, site evaluations do not often link structures and features with associated artifacts or adequately consider archaeological potential in evaluations of significance. In most cases historical background is minimal or absent. As an example, site 5DA1002, the Dow Homestead and Sawmill, contains foundations, sawmill remains, a dugout, a barn, a loading ramp, a

shed, corrals, a pen, a road, and a trash dump. Artifacts at the site include numerous fragments of purple glass, clear glass, ceramics, cooking ware, cans, buckets, along with building materials, pipe fragments, clothes, dishes, and many miscellaneous pieces of equipment and hardware. Historical background is lacking and no date range is given, despite the artifacts clearly demonstrating a pre-World War I period of use. The archaeological potential of the site's features and associated artifacts would clearly suggest that a recommendation as National Register-eligible would be appropriate, yet it was determined to be officially not eligible. In some cases, the recommended need for additional data is quite surprising. For example site 5TL235, the Metberry Sawmill, has sawmill and boiler house foundations, structural remains, and a flume. At site 5FN924, the Sawmill Springs Mill, identified artifacts that include the remains of the sawmill, slash piles, two sheds, a trash scatter, a spring house, a flume, and an abundance of artifacts, including building materials, hardware, glassware, crockery, miscellaneous equipment, barrel hoops, cans, and other debris. The structural remains, features, and material culture evident at these sites would clearly suggest considerable archaeological potential. It appears that the additional data most needed should be sought through historical background research. A review of site forms reveals a pattern toward basing eligibility recommendations on attributes other than archaeological values. Commonly, the recorders do not consider the historical integrity and value of the archaeological deposits in interpreting a site or its ability to enable informed conclusions to be made regarding the scope of an operation and its connections to broader historical themes.

As indicated above, 32 lumber company offices, lumber yards, or retail outlets have been recorded in the state. These sites have largely been documented by built-environment inventories in urban settings. In no cases have their archaeological values been discussed. It should be kept in mind that important archaeological deposits can occur in developed or urban environments and an opportunity to examine management and marketing aspects of the timber industry through archaeological investigation should not be overlooked.

### **Potential for Sites within the Theme to Exist and Be Recognizable**

Sites associated with the timber industry will be present anywhere where trees of suitable size were present close to settlements or former settlements, mining areas, along railroad lines, and in gentle terrain away from other developments. Office and marketing outlets may exist in urban settings throughout the state. The principal tree species sought for lumber and lumber products in the state was ponderosa pine, though Douglas fir and spruce were also harvested. Logging camps will be the most difficult for researchers to recognize because they may have the appearance of generalized industrial camps. Routes of logging railroads have frequently been reused as vehicle roads and may not be immediately recognizable. Some railroad grades required little preparation and may not be easily identifiable unless ties, hardware, or coal cinders are still present. Sawmills and lumber processing mills are generally easier to recognize because of distinctive machinery and sawdust piles. The more developed of these are generally along main railroad lines and were large industrial complexes with residential elements. Some of the more remote sawmills do not have well-defined machinery areas or sawdust piles and have aggregated residential locales that may be confused with some other activity.

### **Interrelatedness of the Theme with Other Topics or Themes**

The logging industry is closely associated with transportation, because of its close relationship with railroads. Mining and urban development are also closely related themes. The federal government theme is also interrelated because government policies and management have affected the timber industry's use of the public domain. In other parts of the country, particular ethnic groups are associated with logging. Although not demonstrated thus far, it is possible that this was also the case in Colorado, and ethnicity may be an interrelated theme.

## **EVALUATIONS OF SIGNIFICANCE**

### **Relationship to the National Register of Historic Places Criteria**

Timber industry sites will generally be evaluated as significant under Criteria A and D. Few sites will have sufficient architectural integrity to qualify under Criterion C, and associations with historically important individuals are unlikely for significance under Criterion B. To date, the archaeological values of timber industry sites have not often been appreciated by recorders. This view is largely due to a failure to conduct adequate historical background research that would properly place sites into context and a failure to understand the functional and temporal information provided by artifacts and features present at the sites.

#### **Areas of Significance**

Areas of significance that may be relevant to the timber industry include community planning and development, conservation, engineering, ethnic heritage, industry, social history, and transportation. The principal area of significance for the timber industry is as an industry that contributed to the growth of the state. However, this area of significance is more applicable to aggregated information about the industry through history; archaeology can add more particularistic information pertinent to other areas of significance.

Community planning and development may be pertinent to sites where communities grew up around a sawmill or lumber processing facility that was the reason for the community to exist. In many parts of the country, company towns were established by lumber companies for their workforce. Places in southwestern Colorado, such as Glencoe and McPhee, were company towns that existed only because of the lumber industry. Smaller communities clustered around short-lived sawmills in the woods should also be considered under this area of significance.

The issue of conservation is also important to consider for timber industry sites. Removal of timber had environmental consequences that can still be seen. Impacts to watersheds by logging, because of both fires and erosion due to denuding of areas, was a primary impetus for establishing forest reserves in the 1890s and the organization of the U.S. Forest Service as a managing agency. Logging practices had direct impacts on the industry itself. For instance, in 1916, the Pagosa Lumber Company closed its massive operations as a result of depleted resources. Much of this may be viewed on a landscape level, and the possibility exists of comparing impacts to the land before and after federal regulations were instituted through withdrawal of lands as forest reserves and national forests and oversight by the U.S. Forest Service.

Many timber industry sites have the potential to provide important information relating to engineering (Criterion C), from the installation of logging railroads to the implementation of innovative logging systems devised to efficiently remove timber from the woods. Engineering may also be evident in the arrangement and type of equipment utilized at sawmills and other lumber processing plants in the state.

The participants in the timber industry were a diverse ethnic mix. Timber industry sites, particularly logging camps and small sawmills, have the potential for expanding our understanding of ethnic heritage in the state and the mixing of cultures.

Small logging camps, sawmills, and company towns provide an important opportunity for the study of social history. Study of the composition and interrelationships of the components of these communities has the potential for yielding important information about the relationships between households, social stratification between workers and managers, and the presence or absence of ancillary facilities for medical care, recreation, education, and consumer purchases. Transportation is also an area of significance to which timber industry sites are likely to be able to contribute. On a basic level, sites are likely to be associated with the construction and maintenance of railroads in the state by providing railroad ties and other building materials.

Logging operations that included logging railroads have an opportunity to demonstrate technological innovations in the construction of those lines along with ancillary facilities specific to the use of railroads for logging. Timber industry sites associated with main line railroads, such as sawmills and lumber processing facilities, also may contribute to our understanding of transportation by the facilities that they include that enabled them to interface with the railroad. Railroads benefited from the freight traffic generated by the timber industry and constructed spurs and other modifications that may be of significance because of their association with timber industry activities. Timber industry sites not served by railroads should also be considered under the transportation theme if road networks or flumes were constructed to facilitate their operation.

### **Periods of Significance**

Periods of significance can be based largely on changes in technology that changed logging or sawmilling practices. General periods can be characterized as

1. Early limited logging from the 1850s through the 1870s;
2. The initiation of large scale commercial logging from the late 1860s to the 1920s;
3. Early truck-based logging from the 1920s through the 1940s; and
4. Heavily mechanized logging from the 1940s to the present.

Early logging by ax alone will be evident only at the earliest period sites and point-specific logging (e.g., logs used for adjacent cabin construction) into the 1870s. Sawmilling using circular saws was likely initiated in the 1860s and 1870s, accompanied by logging using crosscut saws. Sawmills using band saws may have been installed at some of the larger mills beginning in the 1910s. The biggest change in logging, and the one that changed the face of what is observed over the landscape, was the introduction of trucks for the movement of timber from the woods. This development spelled the end of the use of logging railroads, reduced the number of small portable sawmills in the woods, and may have eliminated the need for logging camps. Early truck-based logging still used ax and saw cutting technology for felling trees, but yarding of logs and their loading shifted entirely to motive power instead of animals, and logs were transported by truck to centralized sawmills and planning facilities. Railroads were still important for transporting finished goods to distant markets. Heavily mechanized logging was possible after World War II and further reduced the manpower necessary for cutting, yarding, and loading timber in the woods. To facilitate logging, major roads were constructed to provide access for equipment. Sawmills became larger and more efficient and were situated where transportation of their output could be transported by trucks using highways. Small sawmills in the woods were no longer economically viable.

### **Integrity**

As with all archaeological sites, sites with undisturbed deposits are preferable. However, at sawmill sites, removal of equipment for use elsewhere or subsequent salvaging makes sites with remaining equipment rare. Consequently, a lack or absence of machinery at a sawmill should not be viewed as detrimental to site integrity, and archaeological investigation should be viewed as the best way to interpret layout, function, and industrial process. Of most importance are sites with recognizable features accompanied by artifacts that can provide information about layout and function so that camps and mills can be readily interpreted. Integrity of location is always of concern for archaeological properties, because the deposits need to be directly associated with activities that took place at the site or component of the site. Integrity of design is usually quite important to timber industry sites. Even where structures are no longer standing, integrity of design can usually be ascribed if physical evidence demonstrates the layout of a site; this possibility is bolstered by the presence of artifacts that confirm feature or structure functions. The setting of a timber industry activity as an archaeological site is not of particular importance because timber industry sites inherently destroyed the setting that was the reason for their existence. A physical setting that conveys the sense of it being the place where logging occurred or where products were processed and shipped by railroad may be important for significance under Criteria A or C. Integrity of materials is probably the most important for archaeological sites, because it is important that deposits worthy of data recovery are intact and worthy of investigation. Integrity of workmanship will rarely be evident at a purely archaeological property, though some features of a

site may show evidence of considerable labor or skill. Integrity of feeling is largely irrelevant for significance under Criterion D but may be important for consideration of significance under the other criteria. Integrity of association, like that of materials, is critical for archaeological sites because it is necessary that archaeological materials retain their contextual associations.

## **RESEARCH NEEDS**

### **Quality of Recovered Archaeological Data Relevant to the Theme in Colorado**

At the present time, no archaeological data recovery has been conducted at any timber industry sites. Such investigations are critically needed in the state, for all aspects and time periods.

### **Potential for Good Quality Archaeological Data to Exist for the Theme at Sites in Colorado**

Excellent data is expected to exist for logging camps and sawmills throughout the forested areas of the state. The majority of these sites are expected to exist on national forest lands, though adjacent private lands can also be expected to retain timber industry sites. Because timber industry sites are likely to be focused on national forest lands, Forest Service archaeologists should be careful not to undervalue the data recovery potential of logging camps and sawmills sites within their jurisdiction, particularly for resources that have not seen much subsequent disturbance. Documentation of patterns of distribution within and among sites should also be considered a priority. Like mining and mineral processing sites, timber industry sites will often contain both industrial components and residential components, which need to be considered differently. The industrial components have technological information to offer that can often be recognized by equipment, machinery mounts, and structural elements. These components can be documented in the field through drawings, photography, and written descriptions and fleshed out by historical research that is both site-specific and technology-oriented. For logging camps and local-consumption mills, data are likely to be more of the moment-in-time sort that, in combination with other sites from different places and time periods, can be invaluable for comparative purposes and as elements for aggregated studies. Like mines and mineral processing sites, it is generally expected that equipment will have been removed for use elsewhere or as salvage. That equipment is no longer present should not weigh heavily against the significance of a site because sites with remaining equipment would be extremely rare, particularly the earlier a site is. Even with equipment removed, archaeological evidence usually remains that can be documented by using an industrial archaeology approach. As with mining and mineral-processing sites, a basic understanding of logging and sawmilling methods is necessary to know what one is looking for and what evidence for certain technologies should look like. Field investigations should be coupled with adequate historical research into the site itself and applicable period technology. Typically, sawmills were not as well described in the historical literature as mining sites, making archaeological inquiry even more important to our understanding of logging and sawmilling in the state. Still historical sources, including courthouse records, period newspapers, Sanborn fire insurance maps, local histories, and industry journals, should be consulted. Archaeology can play an important role in revealing specific technological elements obscured in a site or recovering artifacts characteristic of certain technologies. It can also facilitate the understanding of the layout of a site and the operative steps of the industrial process. When plans of a technological layout are available for a particular site, archaeology can reveal if a site was built in conformity to the plans, if and how it may differ from the plans, or if there were modifications or replacement. Archaeology in the pursuit of technological information can be very specific in scope and may be as simple as fully exposing a machinery footing. It may be as complex as excavating materials from a blacksmith shop to understand what specific pieces of equipment were in use, maintenance activities, and the level of technology. At most sites, very specific clues are present that can show what level of technology and what kind of equipment was in use, even when that equipment has been removed. This task can be daunting, especially for an individual inexperienced in industrial technology.

The importance of doing adequate historical research cannot be overstressed. Without it, no site can be put into proper historical context. Failure by a recorder to conduct adequate historical research or an absence of historical documentation should not be grounds for dismissing the importance of a timber industry site if archaeologically recoverable data are present. In all cases, but particularly where historical information

about a site is minimal, a broad understanding of logging or sawmill technologies is necessary to put a site into proper context on a regional scale so that it can be properly evaluated for significance. It is very possible that a timber industry site without a remarkable history may be a good representative example for a particular region or period of time and contain technological data of importance that can be recovered archaeologically. Up to the present time, inadequate recordation has been accepted for timber industry sites, as has inadequate historical research on both an individual site scale and overall contextual level. This practice has perpetuated a lack of appreciation for timber industry sites as places with archaeological value. The only way to prevent a continuation of this trend is for land managers to raise standards of acceptable reporting to include adequate historical research and good physical descriptions that include an explanation of the industrial processes in evidence and placement of the site into context with the general logging or technological history of the region.

The archaeology of residential components at timber industry sites will have a completely different focus than the archaeology of industrial and technological components. Residential components will be investigated with more of an anthropological perspective with the workplace being the common connection between households. A wide variety of households can be expected to be associated with logging and sawmilling, including private or company-run boarding houses, as well as residences for individual families of all socioeconomic ranks and ethnic backgrounds, single laborers, groups of laborers, and management-level employees. At any particular time or place, these household divisions can be compared and contrasted within or between groups to flesh out interpretations of everyday life important to our understanding in the present day. Because of their isolation and frequent short duration, logging camp and sawmill communities form an important class of sites for study because they offer more moment-in-time data than sites with a broader economic base and longer tenure. Unfortunately, these very attributes, which make these sites such wonderful opportunities for research, are the same characteristics that have been used to denigrate them, whereas sites with long tenure with muddled archaeological deposits are held up as examples of utmost historical value. Lacking architectural elements or containing architectural remains in poor or ruinous condition, sites are frequently described as being destroyed without consideration of their archaeological values. Occupants of residences in logging camps and sawmill communities may be difficult or impossible to correlate with specific individuals. Even when specific individuals cannot be identified, archaeology can provide important comparative information about households in terms of socioeconomic status, ethnicity, health and diet, habits and vice, household composition, recreational pursuits, education, compatibility with the dominant culture, participation in national markets, and self-sufficiency.

### **Known or Potential Sites within the Theme in Colorado That Should Be Sought, Reexamined, or Reevaluated**

Numerous early sawmills with associated residential camps are present on Haycamp Mesa and north of Dolores in southwestern Colorado that should have additional historical research completed and would be excellent subjects of archaeological data recovery. The sawmill facility at Glencoe, alongside the Rio Grande Southern Railroad line north of Mancos in southwestern Colorado, is a larger sawmilling operation that is expected to provide excellent data about major output mills and company communities. The Uncompahgre Plateau has several smaller sawmills not associated with railroads that were situated in the woods for production of lumber for nearby valley communities. It is expected that other areas of the state have comparable sites worthy of examination, particularly in places along the Front Range where the earliest logging took place.

Many of the timber industry sites already recorded in the state have had no or inadequate historical background research conducted for them and many lack adequate descriptions of features and artifacts. All sites that are found lacking in these ways should be considered candidates for reevaluation.

# Food Processing

## DESCRIPTION AND BACKGROUND

This section addresses the ancillary industries, structures, and materials associated with the processing of the major agricultural crops and livestock in the state. Today, food processing and marketing account for more than half of the state's annual sales in agriculture (\$6.7 billion of a total of \$11.5 billion). It is estimated that food processing adds 70 percent to the cost of agricultural products (Colorado Department of Agriculture 2004), an indication of the importance of food processing to the industry and overall economy of Colorado. A brief summary of historical developments relating to the food-processing industry will provide an overall background for investigating more specific archaeological associations. An outline of agricultural and livestock development in Colorado is necessary because it was only with a strong agricultural base that development of a vibrant food-processing industry was possible.

In Colorado, the major agricultural crops grown historically were potatoes, sugar beets, wheat, corn, vegetables, and Western Slope fruit. In terms of livestock, the cattle and sheep industries were fully established in Colorado by the 1880s, with Colorado ranchers running some 800,000 head of cattle by 1880, and approximately two million sheep by 1886, grazed in a manner similar to cattle (Wyckoff 1999). Originally, agricultural industries in Colorado developed to supply and service mines and associated communities. With the rush of mining activity and exploration throughout Colorado, most of the earliest food producers were established in and around newly developed mining communities or quickly developing service towns and cities. Except in very marginal settings, agriculture was not for subsistence but was oriented toward producing a surplus for commercial purposes. With the development of water infrastructure, including extensive networks of irrigation ditches, canals, reservoirs, diversion projects, and agricultural cooperatives, commercial agriculture for export became common. Numerous canals and reservoirs are visible across the Colorado agricultural landscape and serve as testimony to the extent agriculture was pursued in the arid environment. With implementation of federal reclamation projects the amount of agricultural land under irrigation expanded exponentially. Where irrigation was not economical, dry farming often took hold. Beginning in the late 1890s, these unirrigated lands previously not recognized as being arable were turned into agricultural production. An experimental station for dry farming was operated at Cheyenne Wells from 1894 to 1900, addressing problems specific to the Plains. A station was also established on the Great Sage Plain of southeastern Utah in 1901 that stimulated settlement of dry lands in southwestern Colorado beginning in 1906 (Widstoe 1920). Dry farming provided opportunities to a new generation of farmers displaced from irrigated agricultural lands that had been fully settled.

Economic hard times created difficulties in agricultural production in the 1930s that the federal government attempted to rectify through the Agricultural Adjustment Act of 1933. The act established production controls that resulted in payments and loans to farmers who voluntarily reduced production of certain crops, promoted marketing agreements, quotas, and export subsidies, and provided for the purchase of surplus production by the Department of Agriculture. In essence, it resulted in certain aspects of agriculture being federally subsidized. The act was determined to be unconstitutional in 1936, so was newly written with many of the 1933 provisions as the Agricultural Adjustment Act of 1938, which has remained as the foundation of subsequent Farm Bills to the present day. The act established a method of maintaining prices of certain agricultural products through quotas and influencing production, prices, supplies, and distribution through the Commodity Credit Corporation. The act and subsequent authorizations under the Farm Bill has had a major impact on modern agricultural production in America, including Colorado.

With promotion of sugar beets as a viable agricultural crop in the 1890s, the first of Colorado's sugar plants was built in Grand Junction in 1899. The excitement over sugar beets continued for another decade or so, and the industry expanded significantly throughout Colorado, between 1901 and 1906, when the Great Western Sugar Company built many of its factories. Of course, the development of canning and food preservation methods, in general, is a major event relevant to the food-processing industry. In 1882, Kuner Pickle Company was established in Denver and other areas, and in 1887, Empson Packing Company established canneries in Longmont; they merged with Kuner in 1926 (May 1937:70-78). Many new methods



and techniques in food preservation were developed between 1900 and 1945, including early experiments in cold packing conducted by H. S. Baker in Denver in 1908. Cold-packing methods and quick-freezing methods, beginning in the 1930s, enabled growers in Colorado to reach interstate markets with relatively fresh produce, overcoming problems associated with the lack of adequate transportation and nearby markets in many regions (King 1984:168). The expansion of chain grocery stores, in the 1920s, furthered the demand for preserved food products.

The agricultural industry has required a great deal of seasonal manual labor for the cultivation and harvesting of produce and at various stages of the packing and canning process. Through time, many of the cultivation and harvesting tasks have been mechanized, but some crops, such as apples, peaches, and some vegetables, still require hand labor for pruning, cultivating, and picking. Migrant laborers often camped near the fields where they found employment or were provided temporary housing at the farms of their employers. In some towns, particularly in the rich agricultural lands of northeastern Colorado or where year-around canning or processing facilities were situated, workers congregated in segregated communities, often defined by ethnic background. For instance, the sugar beet industry employed Japanese, Volga-German, and Hispanic laborers, who tended to settle together in urban or rural communities close to where they could find dependable work. Hispanic laborers, many from Mexico and Central America, are still depended upon for orchard work and other agricultural tasks on the Western Slope and live together in temporary rural enclaves or have established themselves as permanent residents in nearby towns.

In addition to packaging agricultural products, the bottling of beer, mineral water, and soft drinks has a long tradition in Colorado. Brewing of beer and ale began in Colorado with the Rocky Mountain Brewery in 1859. Mineral and soda water would seem to have been a natural product for Colorado, considering so many tourists and residents had been attracted to the region's clear mountain air, mineral springs, and other healthful benefits beginning in the 1870s. The first bottler of soda water was Jacob Scheuler in Denver in 1876, but the industry remained largely undeveloped in comparison to soft drinks and beer. Mineral water was produced only in a small number of places, including Manitou Springs, Pueblo, and Denver. Other bottlers sprang up in Denver in the 1880s, and soon most of the towns in the state had bottling works that offered a variety of products including soft drinks and cider (Clint 1976:63-72). Mechanization and standardization in bottle closures through the invention of the crown cap in 1892 made it possible for bottlers to increase their output while reducing overall costs. The introduction of the Owens bottle machine in 1904 brought about a further reduction of costs and an increase in the standardization of machine manufactured glass containers of all sorts.

Dramatic advances in production, preservation techniques, and distribution systems paved the way for huge corporations that controlled almost every aspect of the storing, processing, and packaging of canned goods, particularly after World War II. The ability to mass produce glass containers by machine continued to be a primary factor in reducing costs and enabling better preservation of contents. Along the same lines was the development of new canning technology including the widespread adoption of the sanitary can, beginning in 1904, which enabled complete mechanization of the canning process using low-cost cans that were hygienic and untainted. The archaeology of food processing is diverse, ranging from large-scale factories to small, individual operations, in both rural and urban settings. For larger operations, any investigation would fall within the realm of industrial archaeology, examining patterns focused on site structure, machinery, and architecture. Here, it is important to be aware of the changing role of a factory or facility over time. For instance, the Great Western Sugar Company built a processing plant in the town of Johnston in 1926, extracting sugar from molasses that was obtained from other sugar beet processing plants. Between the 1950s and 1977, a section of this plant manufactured monosodium glutamate (MSG) and then high fructose corn syrup for soft drinks and other products. The plant was eventually sold to Adolph Coors Company in 1983, who sold it to its present owner, Colorado Sweet Gold, LLC in 1999. Thus, a single plant may have had numerous owners and functions, and, though the overall form of the buildings and its layout may have remained largely the same, the interior workings are likely to have been modified with changing functions. Three general themes relating to food processing include the contrast between local food processors and larger, consolidated operations; the overall trend toward a more uniform production process (Hennessy 2003:6); and the close relationship between food processing and associated transportation networks.

## MANIFESTATION OF THE THEME IN COLORADO’S ARCHAEOLOGICAL RECORD

### Archaeological Characteristics that make Sites in the Theme Identifiable

Table 34 lists the most common sites, structures and materials associated with the archaeology of food processing in Colorado.

#### Meat Processing

Early Colorado ranchers shipped or drove their animals alive to butchers at specific mining camps and towns. From an initial focus on supplying local miner’s needs through the 1870s and 1880s, cattle were increasingly shipped to the large slaughterhouses of Chicago and Kansas City in the late 1800s, where highly centralized meatpacking industries had developed (King 1984:168). Subsequently, the gradual establishment of commercial slaughterhouses and packing plants in Colorado and other western states in the twentieth century reflects the decentralization of operations (King 1984:168). Decentralization was made possible by improvements in technologies, such as refrigerated shipping, that enabled regional distribution of fresh products. Even with large numbers of animals being shipped to packing plants, local demand for meat was often satisfied by local butchers who obtained animals from nearby producers. In rural areas, it is common to find a small slaughterhouse or butchering facility as a component of a ranch. Refrigeration was an important innovation in towns and rural areas and resulted in cold storage lockers springing up, often in association with butcher shops, to provide long-term meat storage for a ready supply to markets and for individuals.

**Table 34.** Major food-processing facilities, structures, and materials.

Food Processing	Structures	Materials
Meat processing and dairying	Stock yards, cattle pens, slaughterhouses (packing plants), dairies	Slaughterhouse equipment, smokehouses, spring houses, coolers, butter churns, and cheese-making vats
Sugar beet	Beet-loading facilities, beet processing plant, abandoned beet dumps, company housing, farm house, worker housing, barns, outbuildings, silos, German-Russian facilities (barns, churches, cottages, community halls), migrant housing, railroads, trestles, kilns, water towers, flumes	Beet pilers, beet washers, beet slicers, conveyor belts, boilers, diffusers, filters and purifiers, evaporators, centrifugal machines, pumps, vacuum pans, granulators
Fresh produce: fruits and vegetables	Packing plant, storage facility	Slicers, conveyor belts
Grains and milling	Farmsteads, mills, grain elevators, windmills, railroads, root cellars, hay barns, loading docks, irrigation systems (water wheels, weirs, flumes, diversion dams, canals etc)	Plows, discs, harrows, seed drills, harvesters, combines, dipping tanks, numerous specialized machines and techniques depending on the product
Canning and bottling of agricultural produce	Canneries, bottling plants	Cans, jars, conveyors, vats, container filling equipment
Beverage processing	Breweries, bottling plants, distilleries, wineries	Kegs, bottles, cans, conveyors, bottle-washing machines, bottle fillers, capping equipment, and packaging and loading facilities

As with most early and opportunistic economies, the links between various industries was intricate. With expanding markets within and outside Colorado, stockyards were increasingly built near strategic railroad junctions, enabling ranchers better opportunities to get their products to the market and contributing to the growth of nearby towns. As railroads expanded throughout the state, ranching was stimulated because outlets for livestock or wool were more readily accessible to ranchers. For example, the town of Placerville was initially a small mining camp near the junction of the San Miguel River and Leopard Creek. However,

with construction of the Rio Grande Southern Railroad in 1890, Placerville flourished because it was the closest shipping point for cattle and sheep for ranchers west of the San Miguel River, including the Norwood and Paradox areas and into Utah. The railroad enabled the town of Placerville to become an important supply center for ranchers and miners, beginning in the 1890s, and one of the most important livestock shipping points in western Colorado through the 1940s.

Another example is the town of Rocky Ford. The Atchison, Topeka, and Santa Fe Railway Company built its tracks between Las Animas and Pueblo through Rocky Ford in 1875 and 1876. A large stockyard was built in Rocky Ford in 1893, and another smaller stockyard was built in 1902. These were not merely holding places for livestock, but feedlots where animals were fed to put on weight prior to their shipping to market. Beet pulp from a newly constructed beet processing plant was used to feed the local livestock. The situation increased business for local ranchers, along with those in the stockyard and feedlot business, the beet processing operation, and the railroad. Changing economic conditions caused the demise of the stockyards at Rocky Ford in the 1960s.

Perhaps the best example of the links between various industries is the Denver Union Stockyards, established in 1886, with its strategic location enabling it to become the largest receiving market for sheep in the nation contributing to the development of other, ancillary markets and suppliers. The meat packing industry quickly developed around the Denver Union Stockyards. By 1900, one of the nation's largest meatpacking companies, Swift and Company, had built a plant adjacent to the stockyards. The Colorado Packing and Provision Company also built a plant directly in the stockyard area prior to 1910. The Blaney-Murphy Packing Company had an impressive building constructed in the stockyards that was later purchased by Cudahy, another national packing giant. Although a few large-scale operations dominated the packing industry in Denver, regional packing facilities continued to thrive in the rail yards of other Colorado towns. Notably, the Nuckolls Packing Company was in operation in Pueblo and Grand Junction during 1910s and 20s, as was the Barwise Packing Plant in Fort Lupton. These examples illustrate the importance for packing plants in proximity to stockyards and rail lines.

Subsequent use of motorized vehicles to transport livestock reduced the dependence of the meat processing industry on the railroad, and now loading facilities for the transport of animals to slaughterhouses are no longer focused upon rail lines. From an archaeological perspective, these changes in market access and location should be identifiable on the ground or, at least, it should be possible to identify components associated with livestock processing and link them with their broader regional context. Archaeological sites associated with this theme include slaughterhouses, packing plants, dairies, cattle pens, feedlots, and stockyards. Identifying some common elements of the meat processing and packing industry may enhance identification and interpretation of archaeological sites. For example, despite a general process of mechanization, the central processing steps still rely on the hand-held knife in the act of evisceration and cutting. Mechanical equipment is rarely flexible enough to adapt to carcass peculiarities (Hennessy 2003:4).

### **Dairying**

In addition to beef cattle, dairy cows were also a part of the early livestock landscape. Dairy production can be divided into two scales or markets: local production and regional production. Initially, farmers in the state had one or two dairy cows to supply their individual families with dairy products. Goats were also kept for milk. Farmers were concerned only with supplying their families with milk and other dairy products, such as butter and cheese, which were made on site using churns and molds. Even at this small scale, excess production was likely and this probably provided a source of income for a family. Family dairy operations expanded to serve local demand and existed in rural areas throughout the state until relatively recently. Before affordable refrigeration, these dairies were often close to towns. Archaeologically, these small dairying operations will be recognizable as components of typical ranch or farm layouts. Only the existence of a specialized spring house for keeping dairy products cool and the discovery of associated artifacts, such as churns, cheese vats, strainers, and presses, would indicate dairying activity. In large part, technological advances, including refrigerated shipment, led to the consolidation of dairies after 1920 and the decline of small dairy production.

In some cases, the opportunity for supplying towns and mines with milk made possible larger regional dairy operations in Colorado as early as 1880. For example, the Sinton Dairy, based in Colorado Springs, began its operations in 1880 with 12 cows, each producing 14 quarts of milk per day. Milkmen delivered the milk by horse-drawn wagon to the residents of Colorado Springs at a price of 10 cents per quart (Sinton Dairy Foods Company 2004). The milkmen would use a measured ladle to dole out the milk, and consumers would use whatever containers were available for receptacles.

Similar dairy operations persisted into the 1940s. These typically had 20 or so milking cows that required milking twice a day. Milk was poured from the milking buckets into 10-gallon metal cans that were cooled as quickly as possible by immersing the cans in a water bath and stirring the milk. The cooled milk was poured into a large separator bowl with a spigot from which it was emptied into reusable glass milk bottles. Cream from the separator was put into pint bottles and sold or made into butter. Cleaning of bottles returned by customers was an important part of the process. Once the bottles were filled, they were sealed with cardboard caps by hand. Caps could be ordered that had the name of the dairy printed on them. The filled bottles were then put in crates and delivered door to door to homes or to local grocery stores. Cows were tested regularly for brucellosis (Bangs) and tuberculosis. Calves were separated at an early age from their mothers and either raised as dairy stock or for beef (Marge Chandler, personal communication with Susan Chandler, July 24, 2006). In situations where only a few cows were being milked, arrangements were made with a larger dairy operation to pick up the cooled cans of milk, and they bottled and distributed the finished product.

In mining regions, milkmen traveled on horseback with two five-gallon containers loaded on their horse like saddlebags. These containers, known as cream or shipping cans, had spigots and the miners would fill their containers right off the horse (Pera 2000:68-69). The early dairies relied on natural conditions to prevent milk from spoiling. The Sinton Dairy delivered milk in the cool, early-morning hours. A dairy near Telluride used creek water to cool the containers of milk and designed a building with thick walls and air intakes next to the creek to maintain a cool interior temperature for storing milk. The early dairies also milked cows by hand. From an archeological perspective, design features, such as cooler rooms and barns with milking stanchions adjacent to feed troughs, will assist in identifying dairies. Associated artifacts, such as 5- or 10-gallon milk containers and measured ladles, can identify sites as early dairy operations. The regional production and sale of milk byproducts also became evident in Colorado in the 1880s. The Littleton Creamery was established in 1886 as a wholesaler of butter, cream, and cheese.

Technological innovation changed the archaeological record of dairy operations. Two changes in particular occurred that drastically affected how dairies operated after 1900. First, the invention of refrigeration eliminated the need to rely on natural conditions and construction of special structures to keep milk cold. This revolutionized the distribution and storage of dairy products, allowing milk producers to ship greater distances. Refrigerated vats replaced those once cooled by water. Refrigerated railroad cars allowed for even broader, statewide distribution, and, as a consequence, the dairy industry began consolidating and centralizing its plants near transportation centers. For example, the Miller Sanitary Dairy (later known as the Royal Crest Dairy), built in 1910, was on Evans Street, a central location near the transportation hub of Denver (Royal Crest Dairy 2004). The Littleton Creamery moved to 19<sup>th</sup> Street in Denver in 1903 for the same reason. Soon, smaller regional operations were either absorbed or forced out of business as the dairy industry centralized. For example, the Littleton Creamery in Denver was purchased by Beatrice Company of Nebraska in 1912 and started producing 20,000 to 30,000 pounds of butter per day (Lower Downtown Denver Historic District 2001). Consolidation and mass production were accompanied by automation of the milking process. No longer were cows milked by hand, but automatic milking machines were used. Although patented in 1865, effective vacuum milking machines hit the market after 1918 and are still in use today (Wendel 1997:249). Consequently, the presence of a vacuum milking machine dates a dairy site to after 1918. These machines were used in both urban complexes and smaller rural operations throughout the state.

The second technological innovation that is reflected in changes in dairy equipment related to aspects of sanitation. The pasteurization process, patented in 1864, heated milk to kill bacteria present in the liquid. The Sinton Dairy first pasteurized its milk in 1907. Pasteurization equipment usually included a batch heater,

into which a batch of milk would be poured and heated to a certain temperature to kill the bacteria. Other sanitation measures related to containers. Sanitary bottles slowly replaced cream and shipping cans. Milk bottles probably began to be used in Colorado after 1904, when the Owens Automated Bottling Machine became widely used and enabled easy and reliable sealing of glass containers (Lockhart 2001). Automated filler and capper machines were not perfected until 1911 (International Dairy Foods Association 2004) and were likely not in widespread use in Colorado until the 1920s and early 1930s. These technological innovations affected the larger dairies more than the smaller rural operations. Hand milking, 5- and 10-gallon cans, and nonpasteurized milk persisted in more rural areas through the 1930s.

Waxed cardboard milk containers were patented in 1914, though they were not commonly used until the 1940s, and plastic containers were introduced in 1964 but not commonly used until the 1970s. Advances in bottling and milking are likely to be observable in the archaeological record. They also illustrate centralization of the industry away from numerous regional dairies to a few industrial operations that have statewide and larger distribution. Small operators did not have the capital for construction of sanitary buildings and for the purchase of automated milking and bottling machines.

By the 1930s and 1940s, even the more remote family operators were going out of business. The McKnight Dairy near Telluride, which had supplied the town and mines, was sold in 1946; it was the last independent dairy to operate in the region (Pera 2000:69). Later dairy operations were fully industrial and should be distinct from early operations in their centralized, often urban, location, level of technology, and architectural design. Dairy barns rapidly developed a standardized, somewhat institutional, layout by the 1910s that distinguished them from other agricultural structures. A dairy barn typically had a long, central hall with stalls lining each side. Cows would either face into or out of their stalls, each of which was equipped with a feed bucket. By the 1930s, many of the larger dairies had incorporated automatic milking machines with pipes running from each stall to processing and storage vats attached to the barn. Some were further automated with mechanized carts that ran the length of the barn and distributed feed to each stall.

### **Sugar Beets**

The sugar beet industry is a major component of Colorado's food-processing heritage. In 1899, the Colorado Sugar Manufacturing Company built the first sugar factory in the state in Grand Junction, using the leftover beet pulp to feed sheep and cattle in the local area. Soon, numerous other beet- processing factories were established, and many remain in various towns and communities, whether they were a welcome feature or not. For instance, some Greeley residents protested against a sugar factory because they feared that it would turn their town into an "industrial center" (Ubbelohde et al. 1972:271).

Mehls notes the distinctiveness of features associated with the beet-processing industry in Colorado:

One feature that sets parts of Weld and other beet growing counties apart from the rest of agricultural America was the beet dump or beet loading facility. Very few of the farmers lived close enough to the sugar plants to actually take their produce to the factory. Instead, they took it to locations on the railroads for transfer to hopper cars and then to plant. Hand loading from farm wagon to rail car was impractical so earthen or wood trestle ramps with scale houses were built near the tracks and conveyors or gravity then was used to move the beets. Abandoned dumps can be found in many parts of the county today as trucks now handle much of the beet traffic. (1988:41)

### **Fresh Produce: Fruits and Vegetables**

For archaeology, the processing of fruits and vegetables is a relatively straightforward affair, consisting of small-scale operation at the orchard itself or near the field or within a centralized warehouse of a related company. Processing includes an associated transportation link to a market or cannery. Sorting of fruits and vegetables was initially hand labor that became increasingly mechanized. Large-scale mechanical sorting of easily bruised fresh fruits was not developed until the 1960s. Packaging for shipment to market is the last step in the sorting process. For less perishable agricultural products, such as apples and onions, storage facilities on or near the place of production is common, often constructed or operated as a cooperative

venture by farmers of an area. These are usually semi-subterranean shelters that keep the produce cool, but protect them from freezing, and that may include conveyors for loading and unloading.

### **Grains and Milling**

Grain could be processed in small amounts at home to provide flour for the farm family. Wheat was either ground with stones, rolling pins, or small hand-grinding mills, which were available as early as 1884 (Cope 2000:254). Archaeologically, this activity is difficult to identify without the discovery of associated artifacts, such as hand-grinders, sifting screens, or small rollers and grinding stones. Flour was more typically obtained from a local mill.

Flour milling underwent significant technological changes that should be reflected in the archaeological record. The earliest flour mills, dating before the late 1880s and early 1890s, were grist mills that depended on water or steam power to turn millstones for grinding wheat, corn, and other grains, and were a relatively common feature of Hispanic agricultural settlements in the San Luis Valley and other parts of the state where grain production was common (King 1984:167). Flour mills of the “Mexican type” were reported in Costilla as early as 1859; another mill was constructed in the town of San Luis in 1860 (Athearn 1985:52). Farmers likely built mills to process their crops for local markets. Archaeologically, grist mills are identifiable by the remains of stone crushers and grinders and likely date to prior to 1890. Early local or regional mills typically had three or more-stories and were rectangular structures with steep-pitched gable roofs, constructed near rivers. In Colorado, numerous local mills existed in farm country on the eastern Plains and the Western Slope. Though less common, mills were also built in intermountain agricultural valleys, such as the Steamboat Roller Mill in the Upper Yampa Valley, built prior to 1892.

Major technological changes in the 1890s revolutionized the business of flour milling, as summarized by King:

Most notable was the development of better ways of purifying the flour, first with sieves then with streams of air. At about the same time, steam rollers were introduced (rolling mills) that cracked rather than ground the grain, resulting in a more desirable product. (1984:167)

Improvements in milling techniques led to mass production and the establishment of large-scale milling companies, such as the Colorado Milling and Elevator Company, founded in the 1890s (King 1984:167). Large-scale milling operations were generally situated where good railroad transportation connections were available, such as in the lower downtown area of Denver. This enabled grain cooperatives or wholesalers to ship grain in bulk to the mill and for the mill to readily transport the processed flour to distant markets. Such a large facility required conveyors and silos for the storage of raw grains, conveyors or elevators to transport the grain to the mill, heavy machinery for the grinding of the grain, conveyors or elevators to transport the flour to a sacking or packaging area, a warehouse for the storage of packaged flour, and a system for loading the finished product onto railroad cars for export. The mills were multistory industrial buildings. The spatial arrangement between the building and train tracks, the height of the buildings, and the interior arrangement of bins, elevators, separators, rollers, and purifiers are key identifying features of a flour mill. Through time, motive power and milling equipment was improved at mills making them more efficient and increasing their output. In addition, with the advent of automotive trucking, reliance on railroads lessened.

Historic granaries provide other archaeological evidence of historic wheat and other grain processing and storage. Early granaries were rectangular, one-story, wood-framed, gable-roofed buildings that typically had a cupola vent on the roof and a post foundation, indicating a need for air flow to prevent stagnation. Grain was loaded into the building through openings high in the gable ends or, in longer, multicompartment granaries, through square ports in the roof. Access was through doors along the long walls of the structure into a centered hallway between grain bins. Later, granaries were constructed to accommodate trucks: a large door on each end of the building would allow a truck to drive through the center of the structure and deposit grain into bins lining each side. This design was more common after 1920. Not all granaries were

rectangular; some were octagonal or round, though these designs are less common and date to the 1920s and 1930s. Silos, another common feature of farms, were not ventilated from the bottom and were for the fermentation of grain and green cuttings for stock feed (silage). The first round galvanized steel grain bin was introduced by the Butler Manufacturing Company in 1907. These round, conical-roof, steel granaries began to become common farm outbuildings by the late 1930s and early 1940s. Rigid-frame metal buildings, now a common feature of modern farms and ranches, were introduced by Butler in 1940.

### **Canning and Bottling of Agricultural Produce**

For agricultural produce in general, the evolution of the canning industry is perhaps the most significant event in relation to expanding production of perishable commodities and its influence on producers and consumers. Certain areas of the state became well known for their produce, usually fruit, and the resulting demand stimulated more plantings and the establishment of nearby canning and bottling facilities. For instance, Loveland was well known for its cherries, Palisade for peaches, and the North Fork of the Gunnison area for apples. However, one major difference between the canning and livestock industries was that canners generally set up factories closer to the fields that supplied their commodities, and so processing plants are expected to be more prevalent across the landscape. Canners needed to be close to their producers, in contrast to meat packers, who could receive cattle alive at a more distant collection point. Archaeological sites of the canning industry are limited to canneries and bottling plants, such as the large cannery established by John Empson at Longmont and Fort Lupton during the 1880s and 1890s, eventually selling out to Kuner Pickle Company of Denver in the 1920s. Other canning companies included the Round Crest Canning Company, also known as the Prison Cannery, operating in Cañon City Colorado around 1900, and the Merry Pickle Company of Littleton, which began canning around 1892. Another interesting example is the Stokes Canning Company of Denver that canned chili and, by 1932, was turning out 8,000 cans of the southwest delight per day (Stokes Canning Company 2004).

King summarizes the evolution of the canning industry in relation to expanding production of perishable commodities and its influence on consumers:

In the last thirty years of the nineteenth century, technical advances focused on the mass manufacture of tin cans and better sealing procedures, mechanized preparation of the product, and more reliable methods of pressure-cooking canned foods. In pea canning, for example, the invention of automatic pea podders and pea viners in the 1880s reduced the amount of hand-labor, often performed by women and children from nearby farms, thus lowering the price of the final product. Mechanical means of cutting and peeling fruits and vegetables also resulted in additional savings. Canners generally set up their factories close to the fields that supplied their commodities. (1984:168)

Those involved in the canning business had to sell the idea, not only to reluctant farmers who were unconvinced that selling directly to a factory would be profitable, but also to consumers, unconvinced that eating food preserved in cans (rather than fresh or in bottles) was not unpleasant. Of course, the canning industry eventually became a huge success, and its products are perhaps the most ubiquitous artifact in the historic archaeological record.

Canning and bottling of produce required the capability to handle large quantities of perishable foods before they spoiled. This necessitated processing plants being situated near a crop source. Before refrigeration, canneries needed to act quickly to process and can the produce they took in on a seasonal basis or to process it in different ways for longevity. Some produced dried fruit, cider, vinegar, and fruit juices. With refrigeration and freezing, larger quantities of produce could be taken in and stored, spreading out the period of time available to process certain crops. A certain amount of processing of raw produce from the fields was necessary, including washing, sorting, cutting, chopping, blanching, and cooking. All of these processes took specialized equipment, including, in some cases, equipment that was needed only for one certain crop. The actual placement of processed foods into cans and the sealing of the cans was initially done by hand but gradually became completely mechanized, particularly with the advent of the sanitary can after 1904 and the machinery that could roll metal caps onto glass bottles. Labeling of cans and moving cans and

bottles into crates and boxes also became increasingly mechanized through time with the use of conveyors and packaging machines.

### **Beverage Processing**

Until 1890, beer was required to leave breweries in barrels for taxation purposes, and beer bottling was done by outside bottlers. Until the advent of pasteurization in 1875, bottled beer would remain good for only a few days, so bottling of beer was limited. Before bottling became commonplace, breweries sprang up in nearly every town of Colorado, and large breweries exported their beer in kegs transported by railroad. Early “breweries” include kitchen-style home-breweries, or small “shed” type structures, and only a select few expanded to large-scale operations. Beginning in 1890, beer was also taxed by the bottle, and brewers began to bottle their own product. Still, a major hurdle had to be overcome with carbonated beverages, that is, how to securely close bottles when the contents developed considerable internal pressure. Numerous innovative bottle closures were invented, culminating in 1892 with the crown cap, which became the industry standard after a relatively few years.

Colorado’s most well known and dominant brewer is Coors. It is an example of a company that is multifaceted and adaptable to changing economic conditions. In 1873, Adolph Coors and Jacob Schueler opened a brewery in Golden, and, by 1890, the brewery’s annual output was 17,600 barrels (a barrel is 31 gallons). During the Prohibition era (1916 to 1932), the company turned to its porcelain business and maintained use of the brewing equipment to make several food products, malted milk, and a near-beer called Mannah. The Coors porcelain branch originated when the company allowed John J. Herold to use their glass works for pottery production in 1910. The Herold China and Pottery Company lasted only two years, after which the Coors Company began producing stoneware and industrial porcelain in the plant. The Coors Porcelain Company is still in the industrial porcelain business, having changed its name to Coors Ceramics in 1986, then CoorsTek in 2000 (Clint 1976:58-59). Numerous other breweries were established in Colorado, including the Walter Brewing Company in Pueblo from the early 1880s; the Zang Brewing Company founded in 1871, after purchasing the Rocky Mountain Brewery Company, Colorado’s first brewery, established in 1859; Neef Brothers Brewing Company in Denver, established in 1892; and the Milwaukee Brewery established in Denver in 1879, later known as the Tivoli Brewery and then the Tivoli-Union Brewery in 1901.

With improvements in bottling techniques and bottle closures, large breweries were able to expand their markets and compete effectively with local breweries. Prohibition in Colorado was passed during the election of 1914 and went into effect on December 31, 1915. During Prohibition, only those breweries that were able to diversify into other products survived. Product diversification included nonalcoholic malt beverages, cereal, ice cream, and soft drinks (Clint 1976:47-49). When Prohibition was repealed in November 1932, several breweries reconditioned their equipment and returned to beer production. Prohibition reduced the number of breweries in the state, and those that remained invested in new equipment for brewing and bottling. Beer was first canned in 1935. The earliest production beer cans were crown-cap, cone-top cans. The market for canned beer expanded with America’s entry into World War II, and several changes in canning technology took place to meet the demands of production and shipping. Breweries such as Coors were at the forefront in making cans affordable and convenient for consumers, including the use of aluminum and self-opening “pop-tops” (Maxwell 1993:101-111). In 1959, Coors introduced the country’s first all-aluminum two-piece beverage can.

Some of the early bottlers of beer went into the flavored soft drink business as a side line. Because many used fresh fruit, they bottled soft drinks only during the summer months. Saloons were reluctant to promote soft drinks, so sales were generally low. With the implementation of Prohibition in 1916, saloons disappeared, and soft drinks began to be successfully marketed nationwide. The 1910s and 1920s brought expansion of national brands with local bottlers affiliated with one of the many national companies. By the 1920s, only four private brand bottlers remained in Colorado: Mackinney-Roberts Co. of Colorado Springs, Deep Rock Artesian Water Bottling Company of Denver, Standard Bottling Company of Denver, and Manitou Mineral Water Company of Manitou Springs. While causing the demise of some breweries, Prohibition stimulated the soft drink industry and enabled great expansion of the bottling industry in most of



the larger towns of the state. Even following the repeal of Prohibition, the number of soft drink bottlers continued to increase. By 1957, 57 bottling plants were in operation in Colorado (Riley 1958).

Early bottlers of carbonated soft drinks had to overcome the same difficulties incumbent with the bottling of beer. Crown caps, invented in 1892, became the standard of the bottling industry, particularly after the advent of the automatic bottling machine in 1904. Other technological innovations that stimulated the industry were automatic capping machines and advances in carbonation with the introduction of compressed carbon dioxide equipment. The soft drink industry completely mechanized the bottling process and eliminated all hand labor through the use of automated bottle washing machines with conveyors that took the bottles to automatic fillers and cappers and onward to case filling equipment. Canning of soft drinks began in 1953. Bottle manufacturers felt stiff competition from cans, leading to innovations that enabled bottles to be manufactured at lower costs. The introduction of nonreturnable bottles eliminated the bottle-washing step from the bottle-filling operation, because only new bottles were used. In recent years, the use of plastic bottles has almost eliminated the use of glass bottles in the soft drink industry.

In 1886, three liquor distilleries were operating in Colorado, including one near Bellevue, outside of Fort Collins, that made corn, wheat, and rye whiskey (D. Baker 1974). It remains unclear how much liquor production occurred in the state. In addition to sites related to high production liquor distilling, the probability exists of discovering sites where liquor was produced and bottled at a local level. In-house or rural stills were likely in operation before Prohibition and proliferated afterward. Bootleggers served local demand through the operation of stills in isolated and hidden settings. Mining camps are also likely locations for local-level stills. Still equipment included mash barrels for fermentation, piping, retorts for boiling grains, buckets, and bottles or jugs.

The historic beverage industry in Colorado also included wineries on the Western Slope, around Grand Junction and Delta, because it was the most suitable area in the state for growing grapes. The U.S. Department of Commerce reported that 1,744 gallons of wine were produced in Colorado during 1899 (Colorado Wines 2004), and, by 1906, over 1,000 farms were involved with grape production. The probability of discovering historic winery sites in Colorado is low. Implementation of Prohibition in 1916 resulted in all the vineyards being uprooted and a cessation of commercial wine making. However, winemaking for personal consumption was allowed during Prohibition; up to 50 gallons of wine per year could be made for personal use. Because of home winemaking, therefore, there is a chance of discovering evidence of winemaking as components of residences, including large vats in basements or root cellars, aging barrels, reused bottles, and grape presses. Such evidence may be demonstrative of ethnic affiliation, because winemaking during the Prohibition era is often associated with Italian families. The first modern commercial winery opened in 1968 (Colorado Wines 2004).

## **Representation of Site Types in State Database**

### **Sites within the Theme Recorded in the State**

An examination of the OAHIP on-line Compass database revealed that 117 sites associated with the food processing theme have been recorded in the state. These are three slaughterhouses, seven packinghouses (presumably all meat packing), 21 dairies, 27 creameries, two beet dumps, eight sugar factories, three potato cellars, one apple-packing shed, one vegetable-packing company, two agricultural co-ops, 12 flour mills, three canneries, eight breweries, 14 bottling works, and five stills. Only nine of these sites have been considered for their archaeological values.

### **Adequacy of Recordation and Evaluation**

Although 117 sites have been identified as having been recorded for the food processing theme in the state site file database, few have been evaluated for archaeological values. Of those for which archaeology has been considered, none can be said to be recorded particularly well. For those sites recorded in urban settings, the likelihood for associated archaeological materials is low but not out of the question. For sites in

more isolated settings, archaeological values are more likely and should be better considered during recordation. Sites from earlier time periods are more likely to contain archaeological materials of importance because wider variation in the manner of operation and technology in use can be expected that will be helpful in describing early industrialization for the various enterprises. Small operations that are components of ranches, such as dairies or slaughterhouses, may be very fruitful for archaeological investigation. Likewise, sites of short duration or not reoccupied, where items may have been disposed of on site or where technological elements or aspects of the layout may have survived, should be considered good candidates for archaeological investigation. For instance, the Manitou Bottling Plant (5EP530.181), formerly the Ute Chief Mineral Water Company, in Manitou Springs has a history that dates to 1897 when Jacob Schueler, former partner in the Coors Brewery, established his mineral water bottling business there. The original bottling plant was destroyed by fire in the early 1940s, and a new plant that was used for mineral water bottling until the 1980s was built within the outline of the original building. Jacob Schueler and his family reportedly resided on the property. The site area is not highly built up, and it is likely that materials from the operation of the original bottling works were disposed of on site, that the fire in the 1940s resulted in additional artifact deposition, and that archaeological evidence from the residence of the Schueler family is extant. However, because the present bottling works structure on the site is not remarkable in any way, the site is recommended as not eligible for inclusion on the National Register and is recommended as not a contributing element of the Manitou Spring Historic District. Mineral water bottling plants are very rare in Colorado, and this may be the only site with archaeological potential for providing information about mineral water industrial processes, not to mention data pertaining to an individual important to the early brewing and bottling industries of the state.

Large operations at key transportation points dominated later food processing and small operators became gradually less competitive unless serving isolated, specific markets. These large operations were more standardized in the technology they utilized and archaeology will likely be able to add very little in terms of understanding technological innovations. In some instances, it is possible that archaeology may be useful in answering specific questions about equipment identification or placement, plant layout, or sequence of modification, but these are expected to be few and driven by historical research. However, opportunities for industrial archaeology to contribute to the understanding of a plant should not be overlooked in the recordation and evaluation of food-processing sites.

### **Potential for Sites within the Theme to Exist and Be Recognizable**

The number and diversity of sites recorded in the state, albeit generally as architectural elements, demonstrates the potential for sites of the theme to be present throughout the state. Food-processing facilities and associated features are expected to be relatively common in certain regions across the Colorado landscape, given the important role of agriculture and livestock to the state's economy. For instance, approximately 22 sugar-processing plants were built in all parts of Colorado prior to 1945, but were mainly on the eastern Plains, the Front Range, and on the Western Slope. King (King 1984:174) notes that "resources associated with this theme (sugar beets) have been and can be recorded in drainage areas of the Arkansas and South Platte river valleys, in Mesa and Delta counties, and to a lesser extent in the San Luis region." Early small flour or grist mills can be expected throughout areas of early agricultural settlement, usually near watercourses. Later centralized grain processing mills will be found in larger towns and cities with good railroad connections. The Colorado Milling and Elevator Company had 18 flour mills across the state by the time of World War I and built numerous grain elevators on the eastern Plains (King 1984:167).

Breweries and bottling plants can be expected in nearly every major town or city of the state. Commercial distilleries and wineries will be more restricted. Home production of wine will be identifiable as a component of residential activities; bootlegging will be small-scale and hidden, usually in an isolated locale, but will represent a discrete activity unadulterated by other activities.

For some food-processing operations, some temporal bias is expected. For example, the chance of discovering regional meat packaging operators or dairies in Colorado that date after 1930 is expected to be limited. Most dairies were replaced by large, centralized, industrial complexes in urban areas such as Denver or Colorado Springs. Dairies that date before 1930 would typically be associated with existing ranches and

integrated into the ranch layout of barns, stock pens, and milk rooms. The existence of a cooler or cool storage room may indicate an early dairy operation that served more than one family. Glass milk jars at a site would likely date the deposit to after 1904, with a high chance of it dating to later than the 1920s when automated bottling and washing machines were more common.

Identification of archaeological components relating to the food-processing theme still requires both an ability to identify key artifacts, site features, or artifact combinations and completion of adequate historical background research. In some instances, artifacts or site features alone may provide clues as to the presence of a particular food-processing activity, particularly on ranching sites where dairying or animal butchering were carried out for more than home consumption.

### **Interrelatedness of Theme with Other Topics or Themes**

Agriculture forms the basis of the food-processing theme and is deeply interrelated. The agricultural viability of a region and its ability to produce certain products enabled the growth of industries that capitalized on those products. As food-processing industries developed, they expanded the market for produce, enabling farmers to prosper through increased agricultural production. Numerous thematic links exist within the food-processing industry itself. For example, consolidation within the meat industry led to the growth of grain companies that fed the animals.

Food processing is intricately linked with the theme of transportation, which enabled the commercial success and expansion of many agricultural regions. The earliest transport networks connected the region to markets in Cheyenne, Denver, and nearby mining districts (Wyckoff 1999:133). Transportation networks influenced the placement of food-processing centers (King 1984:169). Large processing plants developed integrated transportation elements of their own, such as railroad spurs and facilities for loading and unloading raw materials and finished goods.

The theme is also linked to communities. Many food-processing factories and associated agricultural regions contributed to the economic growth and ethnic mix of a town. With mechanization (such as all-purpose tractors and mechanical thinners) and the establishment of large food-processing factories, many displaced farm workers found jobs within food-processing plants in urban centers. In addition, large food-processing factories may have played a role in community planning and development as they may have been purposely placed in certain areas of a community or had workers' neighborhoods nearby.

## **EVALUATIONS OF SIGNIFICANCE**

### **Relationship to the National Register of Historic Places Criteria**

Most food-processing sites are most likely to be considered National Register-eligible under Criteria A or C, though Criterion D will be applicable in some instances. Under Criterion A, they will be found to be significant properties because they are part of a pattern of events – agricultural and industrial development of Colorado – important to history. Under Criterion C, food-processing sites may be found to be significant if they are a representative complex of a particular sector from a specific time period. Complexes may be investigated through archaeology (Criterion D) to determine the function of site components that make the structure and layout of the complexes clear, while also identifying the time period and level of technology in use.

### **Areas of Significance**

The archaeological remains of food-processing sites can provide important information about industry. Archaeological remains can be expected to exist that can inform us about important technologies and methods in use for the processing of specific raw materials, usually agricultural products, over time. The archaeological record may be helpful in demonstrating and explaining how materials were managed at the processing plants and in identifying the equipment in use and the relationship of pieces of equipment to each

other. Archaeology may also be helpful in identifying the raw materials being processed, the steps and means of processing, and the packaging of the products. It may also provide important information concerning the level of technology in use and enable evaluation of the adequacy or innovativeness of the technology of a site. It is possible that archaeology may reveal engineering data important to the design of food-processing sites.

Food processing's role in Colorado history is important in understanding agriculture, community planning and development, engineering, ethnic heritage, and industry. However, in most cases, identifying how these related themes are expressed in the archaeological record is expected to be difficult and challenging.

A clear link exists between the cultivation of crops, the raising of livestock, and food processing. Without commercial agricultural production and a demand for those products from distant markets, large-scale food processing would be unprofitable. The growth of a particular sector in food processing, from local production to a large-scale consolidated enterprise, is tied to a concurrent growth in the agricultural sector that supplied the raw materials used in that facility. Archaeology can add important information to the agriculture theme. Historical information is usually available about the crops or animals being grown and their uses. However, early food-processing facilities may be informative of early commercial enterprises and their scope, in terms of products, size, and level of technology; these are all areas that can be addressed through archaeology.

Larger food-processing plants were generally situated in industrial portions of a town, city, or community. This purposeful placement of these facilities was responsive to transportation needs but also may have been dictated by practical town-planning requirements. In some instances, communities or towns grew up around an industrial facility. A new plant would attract workers who then settled in the immediate vicinity. The plants and the concentrated population spawned ancillary businesses as the industry thrived and the community grew. Workers employed by a particular food-processing facility may have resided relatively close to their place of employment, further defining the development of a community. Such settlement may have recognizable socially stratified communities, where workers in an industry resided near the industrial facility and other members of the community resided at a distance. Such stratification often leads to stigmatization as social and economic barriers are established and certain residential areas are perceived as being more desirable (living on "the Hill" versus "other side of the tracks"). Archaeological investigation of the associated communities can certainly contribute to our understanding of the industry and the development of communities related to their operation. Interrelated with this topic is the possibility of encountering important archaeological data relating to the ethnic composition of the workforce employed at these facilities and their place in the associated communities.

Engineering is also an important aspect of the food-processing industry. Facilities were designed to meet specific needs and produce specific end products. Archaeological evidence of machinery and structures speaks directly to a site's engineering characteristics, and can be used to trace the evolution of a food-processing technology. In some instances, evidence of equipment that was developed explicitly for one phase of a processing sequence may be discovered. Even if structures are in ruins and no machinery remains, the machinery footings, surface and subsurface debris, and overall site layout can provide data for an accurate interpretation of a site that includes its design and engineering features.

Food-processing sites contribute primarily to the understanding of industrial development in Colorado. A general theme in industrial growth is the transition from local-level processing to large, consolidated, industrial operations. A transition in food production from local markets to centralized processing and distribution has contributed to a dependence on processed, packaged foods, particularly with urban population growth and a desire for convenience. Archaeological investigations can determine the size and extent of food-processing sites and help to define this transition. Remains can be expected to exist that can inform us about important technologies and processes in use at various places for the processing of specific products over time. Archaeology may also be helpful in identifying the raw materials being processed, the steps and means of processing, and the packaging of the products. The archaeological record may be helpful in demonstrating and explaining how materials were managed at the processing plants and in

identifying the equipment in use and the relationship of pieces of equipment to each other. Physical evidence may provide important information concerning the level of technology in use and enable evaluation of the adequacy or innovativeness of the technology of a site.

### **Periods of Significance**

The earliest food-processing centers are important because they represent the emergence of an independent Colorado economy. Sites or features that can be placed before, during, or after transition periods in broader economic trends or technological change are all important. Sites from before the adoption of a certain technology may show innovations and adaptations leading to standardization, sites from the period of standardization can be evaluated for the degree to which they reflect the standard, and those that continued to utilize old technology can be evaluated for their ability to compete in a changing marketplace.

Early flour mills depended on water or steam power to turn millstones for grinding wheat and corn and were a relatively common feature of Hispanic agricultural settlements in the San Luis Valley and some later agricultural areas of the state (King 1984:167). However, major technological changes, such as the introduction of steam rollers (rolling mills) revolutionized the business of flour milling. Technological changes not only paved the way for mass production and large-scale milling companies, such as the Colorado Milling and Elevator Company established in the 1890s, but were also accompanied by social changes in traditional communities, such as the flour millers of the San Luis Valley. Continued use of water-powered mills in rural areas may have had social meaning to the inhabitants that enabled mills to continue operating despite being technologically outmoded.

### **Integrity**

As with most industrial archaeological sites, integrity entails the presence of enough features and structure locations to provide information about the nature of the operation and to link the property to a specific period and historic context. Archaeological integrity of food-processing sites entails integrity of location, design, materials, and association. Such things as setting, workmanship, and feeling are less important.

## **RESEARCH NEEDS**

### **Quality of Recovered Archaeological Data Relevant to the Theme in Colorado**

No archaeological data recovery has been conducted at food-processing sites in Colorado.

### **Potential for Good Quality Archaeological Data to Exist for the Theme at Sites in Colorado**

Good quality archaeological data can be particularly expected at early or small-scale food-processing sites. In some circumstances, archaeology may be able to provide important information at larger industrial complexes. Early or small-scale food-processing sites, especially those that served local markets, are more likely to contain archaeological data of importance than larger, more fully developed, and persistent sites because of the higher likelihood that they contain more concise data sets (i.e., data from restricted time periods and attributable to specific activities). Unfortunately, these discrete components are also the types of sites that are most likely to be considered insignificant by researchers without an archaeological perspective because their small, short-term, and remote characteristics suggest minimal historical impact. In fact, these sites, as a group, had an incredible historical impact in the growth of communities and the industries with which they are associated. To the untrained eye they may not appear to be particularly individually distinctive, but as archaeological entities they are distinctive, and as a group they contribute mightily to patterns of industrial development that are very important. The small-scale, short-term, remote, and activity-specific characteristics make such sites ideal candidates for research because they can provide moment-in-time data suitable for comparative purposes and because they often contain technological data that have not been obscured or replaced by subsequent upgrading or other uses. For instance, early water-powered or steam-powered flour mills from before the 1890s, particularly in southeastern Colorado, can provide excellent

data about technology that can be compared with early mill technology from other parts of the country. Along the same lines, early beverage-bottling and food-canning facilities from before the advent of the automatic bottling machine and the sanitary can in 1904 can be used to provide excellent technological information relating to changes in mechanization. Data from such sites can be expected to address issues relating to adoption of innovations and changes in the workplace, particularly in terms of laborers being replaced by machines. At later, larger industrial facilities, archaeology will probably have less of a role to play. As food-processing industries became more highly capitalized, equipment and processes were standardized, and plants were increasingly mechanized for higher output. As mechanization increased, the human element decreased. In such instances, archaeology may be useful in documenting particular technical aspects of an operation, but this will be a very particularistic exercise along the lines of industrial archaeology and not anthropologically oriented.

For all periods and technological levels, the archaeological study of communities and households associated with food processing can be very fruitful. In rural settings, dairies and meat processing may be components of farms and ranches that include individual households where socioeconomic, ethnic, and other pertinent data relating to the associated industry may be sought. At more fully developed industrial sites, groups of households or entire neighborhoods in cities or towns may be associated with a commercial enterprise. For both rural and urban settings, Sanborn insurance maps may provide excellent information about where particular industries, such as canneries, agricultural processing plants (i.e., beet dumps and sugar mills), animal processing plants, and dairies, were situated that provided employment opportunities for nearby residents. Like mining and other industries, a variety of households, including boardinghouses, individual families of all socioeconomic ranks and ethnic backgrounds, single laborers, groups of laborers, and management-level employees, can be expected to be associated with the food-processing industry. At any particular time or place, these household divisions can be compared and contrasted within or between groups to flesh out interpretations of everyday life important to our understanding. Like the work done at Ludlow that centers on oppressed coal miners, research can focus on reactions of everyday people to political or workplace oppression. It can also examine racial prejudice and retention of ethnic or religious identity that is different from the overlying dominant culture. In other parts of the country, households for which a common employment focus exists, such as textile workers, form an important class of sites for study. Although households with a food-processing background have not been the subject of such studies, there is no reason that they cannot be. For such an approach to be productive, an archaeological perspective needs to be taken for sites occupied by workers. This means that properties where industrial workers resided need to be evaluated for what may lie below the ground in both rural and urban settings. That is, the historical and architectural survey approach needs to become more encompassing and include archaeological evaluation because social, economic, and ethnic values recoverable through archaeological inquiry also need to be considered. Household-level archaeological research can be very precise, making data very amenable to intrahousehold and intracommunity comparisons. These comparisons are possible because archaeological deposits can often be attributed to specific occupants whose histories can be discerned through research of land ownership and other historic documents. Important topics of study include socioeconomic status, ethnicity, health and diet, habits and vice, household composition, recreational pursuits, education, compatibility with the dominant culture, and participation in national markets.

### **Known or Potential Sites within the Theme in Colorado That Should Be Sought, Reexamined, or Reevaluated**

Almost none of the known sites under the food-processing theme have been evaluated for their archaeological values. Although it is likely that only a few of the recorded sites will have productive archaeological deposits, it is currently not possible to determine which sites they are. One site, described previously, that may have potential is the Manitou Bottling Plant (5EP530.181), formerly the Ute Chief Mineral Water Company, in Manitou Springs. Where cultural resource compliance is an issue, care should be taken that archaeological values are considered.

# Oil, Gas, and Oil Shale

## DESCRIPTION AND BACKGROUND

Oil was first discovered in a natural seep at Oil Spring in Fremont County in 1860. The oil was gathered and sold for heating and lighting. Oil Spring then became the site of the first oil well in Colorado, drilled to 24 ft in 1862 and 1863. Additional oil exploration was done in the vicinity, resulting in the discovery of the Florence Field in 1881 (Kupfer 1995). Production remained very low until new strikes were made in 1891 (Foster 1926). The Florence Field produced most of the state's oil until 1923, with small amounts also coming from the Boulder, Rangely, and DeBeque fields (Foster 1926). With the new automobile age, the demand for petroleum increased. Although Colorado shared in the growth to a limited extent, only small oil discoveries were made prior to the late 1930s. Oil fields were discovered in the early 1900s in the Boulder and Rangely areas, and considerable exploration was done in the vicinity of Cortez, DeBeque, Fort Collins, and north of Walden in the 1910s and 1920s (Horn 2004a; King 1984). Early exploration was widespread on the mesas and plateaus of western Colorado and on the western edge of the Plains on the Front Range because little was known of the geology associated with gas and oil and exploration was part of the learning process. Mini-booms in drilling occurred regionally that fed themselves on speculative excitement, most of which busted within months as dry holes or discoveries of uneconomic deposits were encountered. As a result, many early oil and gas drilling sites may be found away from areas that developed as productive fields or where fields were developed productively at a considerably later date. Gas was frequently encountered in the course of drilling for oil but was initially considered a nuisance, mostly because markets for gas were quite distant from the points of discovery and long-distance delivery was not feasible. At the same time, fears of an oil shortage created a boom in oil shale speculation in the Book Cliffs of Western Colorado and northeastern Utah. Oil shale speculation began in the 1890s, but it was not until the U.S. Geological Survey assessed the potential of oil shale in 1913 and 1916 that rampant speculation took place. To ensure an adequate supply of oil for military purposes, the government created the Naval Oil Shale Reserve No. 1 in the Piceance Basin in December 1916, with an additional withdrawal of the Naval Oil Shale Reserve No. 3 taking place in 1924. Between 1925 and 1929, experiments in recovering oil from shale were conducted by the Bureau of Mines at Rulison and financed by the federal government. Oil discoveries in Texas and California terminated the project (Beilke 1984:47,257; Gulliford 1983:41; Reed and Horn 1995a:16-17; Russell 1980:27-29; Winchester 1916; Woodruff and Day 1915).

Staking of oil and gas and oil shale claims prior to 1920 was as 160-acre blocks of land under the Oil Placer Act of 1872. With the passage of the Mineral and Oil Land Leasing Act of February 25, 1920, private acquisition of public land containing valuable mineral resources, besides precious metals, was no longer possible but was controlled by leases administered by the federal government (Beilke 1984:47). By the Depression of the 1930s, the largely incipient oil industry was set back sharply. As was to happen repeatedly in the future, the hopes for the shale oil industry in Northwest Colorado were also set back, mainly because of a lack of competitiveness under the prevailing price structure (Gulliford 1989). Nevertheless, Colorado has the nation's thickest, richest, and best-defined oil shale resources, most of which are in the Piceance Creek Basin of northwestern Colorado (Morse 1980:125). In the later 1930s, assisted by technological innovations in drilling and increased access to Pacific Coast markets through natural gas pipelines, oil and gas discoveries were developed in portions of western Colorado. It was not until the later 1940s that major gas and oil fields in western Colorado began to be exploited to their full potential. Development of these resources has continued largely unabated. Still, the natural gas industry has not realized its full potential, largely because of competition from cheaper sources in Texas. At present, approximately 23,000 wells are active in Colorado, and another approximately 40,000 wells are plugged and abandoned (Colorado Oil and Gas Commission 2004).

## MANIFESTATION OF THE THEME IN COLORADO'S ARCHAEOLOGICAL RECORD

### Archaeological Characteristics That Make Sites in the Theme Identifiable

Table 35 is a list of the more common sites and structures expected at oil and gas sites and oil shale mining and extraction sites.

**Table 35.** Sites, structures, and materials associated with oil, gas, and oil shale sites.

	Sites	Structures/materials
<b>Oil and gas</b>	Oil fields, drill sites, claims, wells, sumps, pipelines.	Derricks, drilling rigs, casing pipe, drill bits, steam engines and boilers, "Christmas tree" wellhead valves and fittings, separators and gas traps, well pumps, storage tanks, pipelines, pumping and compressor stations
<b>Oil shale</b>	Open pit mines, retorts, claims	Quarrying equipment, loading facilities, waste rock piles, conveyors, rock crushers, retorts, oil tanks.

Given the paucity of knowledge about oil and gas archaeological sites, the descriptions and background provided by the only investigation at such a site (5ME6822) in Colorado is insightful about the equipment used in early oil and gas drilling and the manner in which drilling was done (Horn 2001a). Interpretations of the operation were assisted by consultation with Mike Coyer of the Wood County Historical Society, Bowling Green, Ohio; D. Ryan Smith, executive director of the Texas Energy Museum; and Samuel Pees of Meadville, Pennsylvania: all experts on historical oil drilling.

Site 5ME6822, the Roan Creek Oil and Gas site, is a historic oil and gas drilling site on private land adjacent to Roan Creek, northwest of DeBeque, Colorado. The site consists of a dense concentration of historic artifacts on the eastern portion of the site in association with coal cinder and slag concentrations. Artifacts are indicative of food preparation and consumption and use and repair of heavy machinery. A 30-foot-diameter area of dense coal cinders and slag just west of the artifact concentration is indicative of use of a coal-fired steam boiler. Immediately north of the erosional drainage in the northern portion of the site area is an unnatural depression that appears to have served as a small reservoir. The reservoir is just northwest of the cinder and slag disposal area and likely served for storage of water for use by a steam boiler. Heavy iron pipe has been driven into the ground in two locations. These appear to have been anchoring points for cable or wire rope that may have served to support a steam boiler smokestack or a drilling derrick. On the west side of the site is another larger reservoir area. The reservoir basin, now dry, has an artesian spring in the bottom that emanates from a vertical pipe of a cased drill hole. A breached earthen dam is evident on the east edge of the reservoir area. On the south end of the reservoir is another heavy cinder and slag area with a light scatter of artifacts that represents another area where steam-powered equipment was used. In all, the site covers about 2.2 acres.

Ola (Anfenson) Garrison took a photograph of the site on March 16, 1916, while drilling by the Rifle-DeBeque Oil and Gas Company was under way (Boyd 1997). The photograph shows what appears to be a rather typical drilling complex for the middle 1910s on the east end of the site. Most prominent is a pyramidal-shaped wooden standard derrick estimated to be about 80 ft. tall and 20 ft. long on each side at the base. The National Supplies Company manufactured 72- and 80-foot-tall standard derricks for oil field work. Such derricks were commonly used throughout the Midwest and Rocky Mountain states. Standard rigs were somewhat more heavy duty than similar "California" rigs, which were also in common use.

The derrick has four heavy square timber legs angled inward to a small platform on top, where a crown block was placed. The legs were stabilized with a series of eight wooden horizontal cross braces, two of which are obscured by the board walls on the lower portion of the derrick, and diagonal, crossing sway braces on each side. A wooden ladder was on the north side of the derrick leading to the crown block platform on top. Wire rope ran through the center of the derrick, presumably passing through the crown block at the top of the derrick. The crown block would have been comprised of two or three sheaves through which



individual lengths of wire rope would have passed, operated independently for different purposes. If three sheaves were in use, one would have held the drilling line, another, the casing line, and the third would have held the sand line. If two sheaves were in use, one would have run the sand line and the other would have served for both drilling and casing. A pole extended southward from the side of the derrick; this pole was a counterbalance weight pole that assisted the lifting of heavy equipment.

The lower third of the derrick was enclosed with vertical board siding, an adaptation for colder climates or drilling during colder times of the year. In warmer climates, such as Texas and portions of the Southwest, the lower portions of the derricks were not enclosed. A large doorway on the west side of the enclosed derrick base provided access for equipment beneath the derrick. To facilitate sharpening of drill steels, a blacksmithing forge would have been on the derrick floor, adjacent to the drill hole. This would have been done for convenience, because it would have been easier to sharpen or repair heavy items close to where they were actually used instead of taking the effort of moving them to a separate metalworking location. A small shed extension on the south side of the derrick provided additional space for work around the forge.

West of the derrick, a small, wood-frame structure housed the steam engine and hoisting equipment. A set of double doors on the west side provided direct access to the steam engine and a single door to the left was used by workers to enter the structure. A portion of the structure may have been partitioned into an office with a small heating stove.

The engine house and the derrick were connected by a large inclined wooden walking beam that operated the percussion drill. The walking beam was mounted on a center pivot, known as a Samson post, and was mechanically moved up and down by an offset crank pin and connecting rod on a large band wheel that was belt-driven by the steam engine. The band wheel was situated directly below the end of the walking beam nearest the steam engine. The band wheel was typically 10 to 12 ft. in diameter. In addition to moving the walking beam up and down, the band wheel also had a groove in it that held a rope belt that operated the bull wheel on the opposite side of the derrick. The rope belt was typically 2¼ in. in diameter and was constructed of three ropes woven together. The bull wheel served as a hoist for the drill line that moved the drill bit in and out of the hole and lowered casing into the hole. For drilling, a percussion spud drill bit was attached to the end of the drill line and lowered to the bottom of the drill hole. The drill line was then connected to the end of the walking beam directly over the drill hole by a temper screw that allowed 4 ft. of adjustment.

As drilling proceeded, the temper screw was gradually adjusted its full length, at which time the drill hole was 4 ft. deeper than before and the drill bit was hoisted from the hole so that the cuttings could be removed. Another spool of wire rope for the sand line was between the steam engine and the derrick. Attached to the end of the sand line was a length of pipe with a one-way valve that was lowered into the drill hole to remove drilling debris. Because drilling was done in association with water, the drill cuttings were in the form of a slurry that easily entered the pipe to be lifted to the surface, where it was emptied onto the floor of the derrick. In this way, drilling proceeded in a repetitious cycle of 4-ft.-depth increments.

Casing of the drill hole took place at specific points in the drilling operation. In Ohio, initial drilling of a hole large enough to easily contain an 8-in.-diameter casing pipe proceeded to the point where bedrock was encountered. When bedrock was hit, drilling ceased and casing pipe was inserted into the drill hole. This ensured that the upper portion of the drill hole did not collapse and fill the hole. A slightly smaller drill bit was then used to drill into bedrock. At the point where rock was reached that was below the point where water was present, the drill was removed and a slightly smaller drill bit was again utilized for a short distance, perhaps 10 ft., whereupon 6¼-in.-diameter casing was inserted into the hole and driven into the smaller diameter hole at the bottom to ensure a watertight fit. Drilling then proceeded into the oil- or gas-bearing stratum without further casing, as exclusion of water from the drill hole was no longer necessary and collapse of the hole was unlikely because drilling was in solid rock. It is likely that a similar casing sequence was used during drilling at 5ME6826. However, it is possible that drilling never reached a level below which water infiltration ceased, so perhaps there was a casing only of the upper geologic strata in the Mancos shale took

place. This possibility is suggested by historic references that indicate that water and gas were encountered together.

West of the engine/hoist house was a large, locomotive-type horizontal steam boiler. The boiler had a large smokestack, estimated to be 18 in. in diameter and 30 ft. tall, that was supported by guy lines. The standard height for a smokestack was 25 ft.; this was the height necessary for a sufficient draft to be created in windless conditions. Typically a 20- or 25-horsepower engine and a boiler sufficient for its operation would have been adequate for a cable tool drilling.

When gas or oil was encountered, a gas trap with a blow-off valve on top was needed. A gas trap served as a container that separated oil, gas, and water from the well hole. Water settled to the bottom of the tank and could be drawn off into a sump, usually a small reservoir dug into the ground nearby. Oil, which floated on the water, was retained in the tank, and the gas that rose to the top of the tank could be released through a pop-off valve.

The size and arrangement of the derrick, engine/hoist house, and steam boiler were very typical of the time period. A 1913 photograph of the Howard No. 1 well in Ohio County, Kentucky, shows an oil-drilling operation nearly identical to the Roan Creek Oil and Gas site. It included a derrick enclosed in the same way on the lower third of the structure, a nearly identical wood-frame engine/hoist house adjacent, and a comparable-sized locomotive-type horizontal steam boiler with a tall smokestack. Either there was considerable standardization in the manner in which oil and gas drilling was done throughout the country at the time, or a knowledgeable individual who had learned oil drilling techniques in the eastern oil fields was involved with the drilling in the DeBeque area.

A drilling operation of the sort operated at the Roan Creek Oil and Gas site would have required two or, perhaps, three individuals. The most important individual was the driller, who would have been in control of the drilling equipment at all times, making adjustments as needed. The second individual was the tool dresser, who would have sharpened the drills and done the routine maintenance and repair of the equipment. It is possible that a third individual may have been required, who would have served simply as a helper for the other two men. In Ohio, a drill rig comparable to the one used at the Roan Creek Oil and Gas site was operated 24 hours each day for three months to reach a depth of 1,260 ft. At that rate, drilling progressed about 14 feet in depth per day. The wells in the DeBeque area were drilled to depths of about 2,000 feet. If the drilling rate was the same as in Ohio, it would have taken 4½ to 5 months of drilling to reach a depth of 2,000 ft.

The excavations at the site recovered an assemblage of artifacts believed to be typical for a gas and oil drilling operation of the early twentieth century, consisting of nails, lumber debris, casing pipe fragments, broken machinery parts, wire rope, and a small assemblage of household items. The excavations demonstrate that the site was used primarily as a place of work with some differential use of space; maintenance of the boiler and steam engine for drilling work took place in a different area from where construction and dismantling of wood frame structural items was done. Overall, the site appears to have been a typical gas and oil drilling operation for the 1910s. It could have been transplanted anywhere in the United States and not perceived as out of the ordinary (Horn 2001a:28).

Gas and oil drilling continued as described above into the 1930s. Following World War I, gasoline engines became a more common means of motive power but did not become commonplace until the 1930s. Wooden derricks were gradually replaced by tubular or angle iron structures from the 1910s to 1930s. Rotary core drilling was initiated in the 1890s but did not take hold in the industry until the 1930s or later (King 1984). Most oil and gas exploration prior to the 1930s was by shoestring operations searching for oil in relatively shallow holes by using equipment comparable to that used for water well drilling. With the realization that deep holes might be profitable, better financed companies using more up-to-date equipment came to dominate exploration activities. Following World War II, heavier equipment was increasingly used at drill sites, accompanied by extensive leveling of well pads and placement of larger power plants capable of deep drilling. The installation of equipment using large trucks for hauling has required extensive road

building. The discovery and exploitation of gas and oil fields is manifested by concentrated drilling and pipeline networks in some areas.

Improvement in production and quality of steel pipe enabled producing gas and oil wells to transport their product to convenient collecting points or refineries and to distant markets. Through time, these gathering systems have grown, and major interstate pipelines have been constructed to deliver larger quantities of oil and gas to major refinery centers and to customers far from the source. Between 1900 and 1919, the ability to manufacture larger diameter pipe and, after 1914, the introduction of diesel engines to operate main line pumping stations made pipelines viable means for transporting oil and gas (Williamson et al. 1959:69). Before the 1920s, transporting gas by pipeline was difficult, and isolated areas, in particular, were unable to reach their full potential until such technological innovations were made. Cast-iron pipe was used by the oil and gas industry for pipelines beginning in the 1880s. Although riveted pipe was available beginning in the late 1850s, it was not suitable for oil or gas transport. Lap-seamed steel pipe was developed in 1887, and spiral-welded steel pipe was produced beginning in 1889. Spiral-welded steel pipe had the advantage over cast-iron or lap-seamed steel pipe of being stronger and lighter and was commonly used to transport water, but it was not suitable for long-distance transmission of petroleum products. Still, cast-iron pipe was used for oil and short-distance gas pipelines into the 1890s (Clark 1929:346-347). Electric welding of pipe was developed in the early 1900s, and lock-seamed steel pipe was developed in 1905. A key innovation in pipe technology came in 1927 with the invention of the lightweight lock-seamed, spiral-welded pipe that could be used as a pressure vessel (Naylor Pipe Company 2004). Oil and gas companies used the pipe extensively in the 1930s and 1940s.

At the site level, oil shale mining techniques are similar to open-pit coal mining, entailing surface preparation, fracturing (drilling and blasting), excavation and ore removal (Morse 1980:135). However, oil shale is much harder than coal; consequently, an oil shale surface mine more closely resembles a limestone quarry or an open-pit copper mine than a coal strip mine. In contrast, oil shale retorts or reduction plants will be unlike any other industrial facility. Because oil extraction involves the processing of tons of rock, it is necessary to have large bins for storage or an efficient transportation to move rock from the mine to the retort plant. Also necessary is a large crushing works, either at the mine or the plant, an abundant water source, a heating plant for the retort process, vats for collection of the resulting oil, and a disposal site for processed rock. Technological innovation and variety will characterize retort facilities because all oil shale extraction was experimental and used technologies from elsewhere, primarily Scotland and France. As a result, no two retort plants will be the same, and each can provide insight into technological innovation and experimentation.

## **Representation of Site Types in State Database**

### **Sites within the Theme Recorded in the State**

Twenty-six sites associated with the oil and gas industry were identified from the state's database. It appears that little has changed since 1984 when King (1984) noted that evidence of early oil field drilling in Colorado is limited, the history of the oil industry in Colorado is not well known, and documentation for the gas industry is virtually nonexistent. For natural gas, King stated that "so little has been done on this subject from a historical as well as a cultural resource perspective that all sites are potentially significant to state and local history" (1984:64). The best documented oil and gas site so far investigated in the state is the Roan Creek Oil and Gas site (5ME6822) near DeBeque (Horn 2001a). Additional case studies from different time periods and from different parts of the state would be necessary to fully consider the topic. Few oil shale sites have been documented, but the remains of the Rulison Plant (5GF2208) have been recorded (Reed and Horn 1995a). Further examination of this important site is warranted. Also needed is documentation and investigation of other experimental retort facilities and typical mining locales from the 1910s-1920s initial oil shale boom. Examples from later booms would also be important to study from a technological perspective.

## **Adequacy of Recordation and Evaluation**

Because most oil and gas exploration prior to World War II was done using relatively light and portable drilling technology that was completely dismantled and reused from place to place, recognition of drill sites may be rather difficult. It is likely that early oil and gas sites are not being recognized for what they are in the field. For instance, derrick footings and sludge pits may reveal themselves in trench profiles, but they do not have readily visible surface manifestations. Sites dating after World War II will appear as more heavily industrial locales, but they may not be recognized as cultural resources of sufficient age for recording and evaluation. Investigation of similar oil and gas exploration sites to the Roan Creek Oil and Gas site, particularly those representing different periods of time, would enhance our understanding of the industry's history, given that such sites represent a major data gap in the state's engineering record (King 1984). Specific research objectives include discerning the range of activities represented at the drilling site, determining the level of technology, and determining group composition. Few projects have taken place in terrain suitable for oil shale extraction, so it is uncertain whether these sites are being recognized for what they are.

## **Potential for Sites within the Theme to Exist and Be Recognizable**

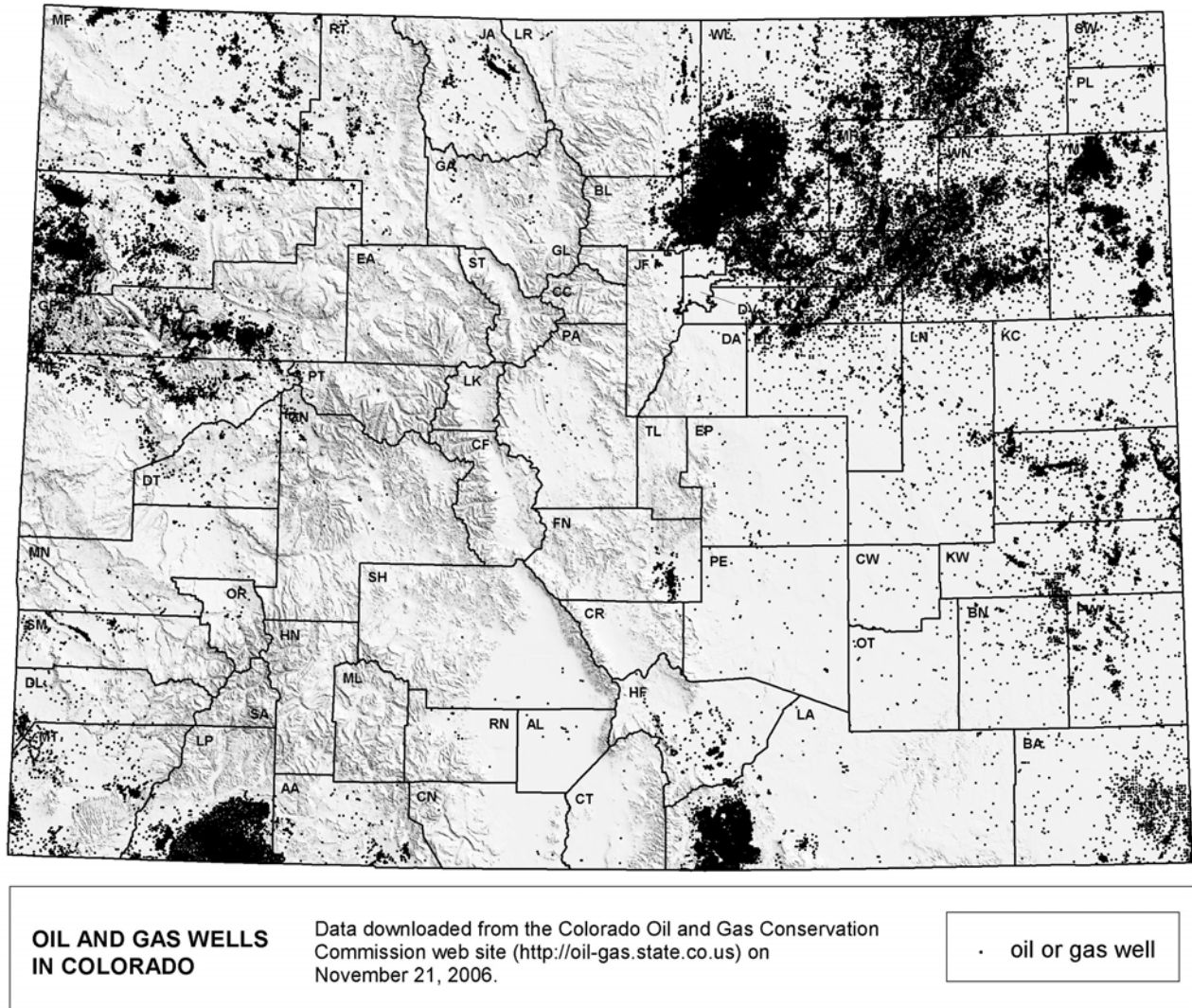
Early oil and gas exploration took place statewide. As knowledge was gained from these initial attempts at discovery, subsequent exploration and development has been concentrated in more specific areas, as shown in Figure 24. In general, anywhere outside mountainous terrain may have evidence of early oil and gas exploration. Specific locations of exploration on the public domain can be identified through filings of oil placer claims prior to 1920 and federal leases after that date. Records on federal mineral leases are available at the BLM state office in Lakewood, and the USGS library in Lakewood also has considerable information and photographs about oil, gas, and oil shale operations. Leases for exploration on private lands were also frequently recorded in agreements filed in county courthouses. Early oil and gas drilling locations will likely mirror that described for the Roan Creek Oil and Gas site (5ME6822) in Mesa County. In general, those powered by steam will have evidence of a steam engine (coal cinders and slag piles or scatters), pieces of broken machinery and pipe, pipe or rod anchors driven into the ground for smokestack or derrick support, lumber debris, a possible cased drill hole projecting above the ground, small reservoirs, and light scatters of household-type artifacts. Later sites may lack evidence of steam power, but may contain discarded drill cores (sections of cylindrical stone) from rotary drills. Post-World War II drill sites will likely exhibit considerable leveling, discarded equipment and machinery parts, and a projecting cased-pipe drill head welded shut or closed with a valve. Beginning about 1950, federal regulations were implemented that required drilling sites to be cleaned up, so more recent oil and gas sites may have fewer artifacts and discarded pieces of equipment than at earlier sites.

Oil shale sites will be restricted to the Book Cliffs of northwestern Colorado. Early oil shale mining areas can be defined by oil placer claims prior to 1920 and the boundaries of the Naval Oil Shale Reserve No. 1, withdrawn in 1916, and the Naval Oil Shale Reserve No. 3, withdrawn in 1924. Mining will have taken place in geological settings where oil shale is the only obvious mineral. It could be confused with coal mining, but the sites will have no evidence of coal. Most sites will likely not be very enticing, as they will appear as very basic mining operations. However, the geological setting and activity of mining should enable most recorders to properly categorize oil shale mines. Unusual industrial components in or at the base of the same geological setting should be recognizable as retort or refining operations.

## **Interrelatedness of the Theme with Other Topics or Themes**

Transportation is the primary interrelated theme for oil and gas and oil shale. Colorado railroads depended on local coal fields for their power until locomotives were converted to diesel in the 1940s, and new modes of transportation – airplanes and automobiles – consumed the products of oil fields. The connection between oil and automobiles is obvious: by 1900, petroleum was replacing coal as the most used fuel in America. The automobile accelerated this trend and encouraged the search for oil in Colorado, both as crude oil and as oil shale. The availability of oil for home heating virtually eliminated local consumption coal

mines, as people quickly changed to oil or natural gas that was found in association with oil. Use of oil fuels for railroads also reduced the demand for coal. However, coal continued to be important for industrial uses in steel production and generation of electricity.



**Figure 24.** Oil and gas wells in Colorado.

Federal government is another interrelated theme because a large amount of oil and gas is administered under leases on federal land and the majority of oil shale lands are within federal withdrawals or subject to leases on federal land (Morse 1980:124).

### EVALUATIONS OF SIGNIFICANCE

The oil and gas theme is significant at local and national levels because oil was recognized in Colorado so soon after the initial discovery of oil in Pennsylvania. Colorado's role in oil exploration and discoveries from the 1910s to 1930s and following World War II are also important to local and regional history. Oil shale exploration in Colorado is also of national importance because of its recurring role in attempts to alleviate perceived oil shortages and energy crises.

## **Relationship to the National Register of Historic Places Criteria**

Oil and gas industry sites will generally be ascribed significance under Criteria A and D. It is not expected that architectural remains will be associated with oil and gas sites, though the arrangement or layout of sites or particular innovative technologies may show sufficient patterning to be considered typical and significant under Criterion C. Associations with historically important individuals are unlikely for significance under Criterion B. Early gas and oil exploration sites are not commonly encountered. Early sites that retain evidence of the technology in use should be considered particularly important, even though their brief periods of use are expected to have left relatively few features and sparse artifact deposits.

### **Areas of Significance**

The principal area of significance for oil and gas and oil shale sites will be industry. Other areas of significance that may come into consideration might include conservation, engineering, invention, politics/government, and science.

### **Periods of Significance**

Little is known about oil and gas exploration from the time oil was discovered at Florence in 1860 until widespread oil exploration began about 1900. Sites from this time period would be important both for the information they can provide about where oil was first sought and for the technology used in its discovery. Sites from about 1900 through the 1930s will be important for the information they may provide on the technology being used, innovations, and the relationship between the level of technology and company capitalization. Sites post-dating World War II have somewhat diminished importance in this regard but still may provide some information about technological advancement. The expansion of the industry after World War II and domination of the industry by large companies reduces the importance of the theme archaeologically, though oil and gas infrastructure development on a landscape level may be important.

Initial uses of oil shale from the 1890s to about 1910 are little understood. Although few sites from this time period can likely be identified as having a specific oil shale exploitation component, any that exhibit evidence of mining or oil extraction would be important. Rampant speculation, establishment of the Naval Oil Shale Reserves, and formal experimentation in oil extraction of the 1910s to 1929 period is of critical importance to the oil shale theme. Subsequent oil shale activities through the early 1980s were overseen by the federal government and carried out by large, established oil companies at only a few highly developed places. These activities are currently of little interest archaeologically, but they may have industrial archaeological importance worthy of consideration.

### **Integrity**

Gas and oil exploration sites should have layouts that are readily recognizable as drilling complexes. For early sites, these would be sites at which placement of equipment can be discerned, even if these are simply a drill hole, machinery area, coal cinder or slag disposal locale, guy wire anchors, and artifact scatters. Archaeological remains would be expected to be entirely surficial and rather sparse. Sites with evidence of production from the 1910s to 1930s would be considered very important because productive wells from the time period have either been exhausted and their facilities dismantled or have been upgraded. Pipelines from the period would also be unusual, but aside from their historical context and location, the actual pipe in the ground is not considered worthy of preservation once the materials have been documented. However, early facilities along a pipeline, such as valve and compressor stations, may be of engineering or technological importance and may have archaeological values worthy of documentation. Facilities from the post-World War II era are expected to be more intact and complex. Many of these facilities are expected to be still in service. Extremely well-preserved and intact examples of oil and gas wells from the 1940s and 1950s may be worthy of consideration for preservation, but as archaeological sites, they are not currently considered to have values worthy of further investigation.

Oil shale mining has remained in an experimental stage since its discovery and first attempts at commercial use. Mining has always been limited, so oil shale mines are not expected to show extensive development. However, documentation of the range of variability in the extraction of oil shale is important, so good recordation is necessary, especially in terms of mining techniques and equipment in use. Particularly good examples or well-preserved examples of typical extraction techniques may be worthy of further preservation as would be examples of unusual extraction techniques or innovative technology. At the present time we do not have examples of any of these. Extraction of oil from oil shale has also remained experimental, and any examples of extraction plants from any time period would be considered important and worthy of further investigation. At the present time, only the Rulison Plant has been recorded.

## **RESEARCH NEEDS**

### **Quality of Recovered Archaeological Data Relevant to the Theme in Colorado**

The quality of the recordations for both oil and gas exploration and oil shale sites in the state can be considered to be poor because so few sites within the theme have been recorded and the level of documentation has been low. The only site within the theme for which archaeological and historical investigation has been carried out has been the Roan Creek Oil and Gas site (5ME6822). This site should be considered a starting point for future research into oil and gas in the state. The archaeological database for oil shale resources is almost nil, and no site-specific research has been carried out for oil shale.

### **Potential for Good Quality Archaeological Data to Exist for the Theme at Sites in Colorado**

The large number of oil and gas sites expected throughout the state and the results of the work conducted at the Roan Creek Oil and Gas site suggest that excellent archaeological data can be expected to exist statewide for temporal, technological, and comparative studies. Because of the limited geographical distribution of oil shale sites in Colorado and the limited periods of oil shale mining, it is expected that archaeological data on the subject will be relatively limited. Mining sites will be of small scale and not well developed. The best potential is for examination of oil shale extraction locales (retorts) because of the technological innovations being attempted and their experimental natures.

### **Known or Potential Sites within the Theme in Colorado That Should Be Sought, Reexamined, or Reevaluated**

The earliest oil discovery site in Colorado at Oil Spring (5FN118) was listed on the NRHP in 1996 (Kupfer 1995). Although the site is described as having seen considerable alteration, it was the scene of nearly all of the oil exploration in the state prior to 1881. Examination of the site for historical archaeological values should be undertaken. All oil shale retort and extraction facilities should be sought and recorded. All may be National Register-eligible because the experimental nature of the extraction process may render each facility unique and an important element in the technological growth of the yet unsolved extraction problem.

## **PRODUCTIVE INDUSTRIES**

### **Description and Background**

Productive industries are manufacturing businesses that produced finished goods for retail sale. The role of manufacturing in Colorado parallels many of the economic and social changes throughout the state's history. For instance, beginning in the late nineteenth century, local manufacturing serviced the vibrant mining industry and overcame exorbitant freight charges on products hauled in from Chicago, St. Louis, Kansas City, and elsewhere. Indeed, the early reliance on eastern manufacturing centers was not just an economic obstacle to be overcome but also an ideological issue, borne from a desire to create a self-sufficient and independent Colorado. A more holistic Colorado economy emerged that produced export goods. The

economy was fueled by growth of mining and other industries, the development of the state's infrastructure (especially transportation networks), and the construction of a multitude of water projects for agricultural, industrial, and urban expansion.

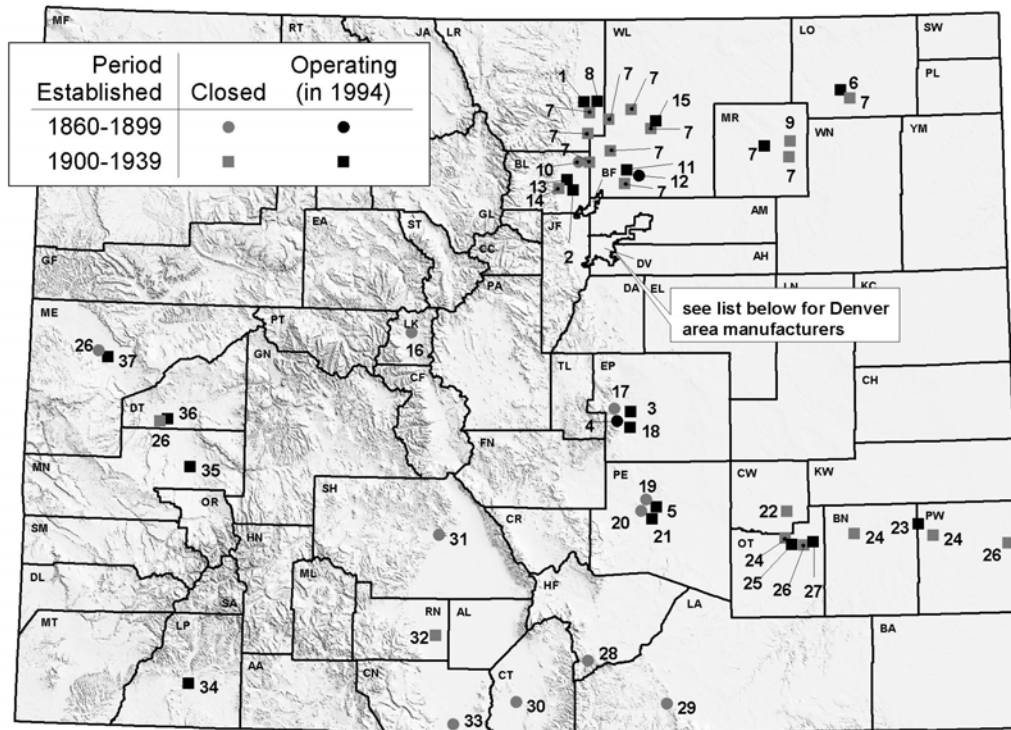
One of the consequences of the silver crash and economic downturn of the Panic of 1893 was a noticeable diversification of Colorado industry, involving less reliance on mining as the driving force of the economy. In the late 1890s, manufacturing industries were concentrated in Colorado's several major cities: Denver, Pueblo, Leadville, Colorado Springs, and Grand Junction. These cities served as commercial centers for the surrounding hinterland, with economies geared to retail, wholesale, manufacturing, and service establishments. Denver, for example, began as a supply town to the mining industry. However, soon after the Panic of 1893, economic diversification took place in Denver with the establishment of numerous agricultural, manufacturing, and service businesses, including stockyards, brickyards, canneries, and flour mills. Prominent manufacturers in Denver included Gates Rubber, Samsonite Luggage, Hathaway Instruments, Ainsworth Instruments, C. A. Norgren (mechanical equipment), Frederic Printing, and Wright and McGill Fishing Tackle. The Gates Rubber Company, founded in 1911, and Samsonite Luggage, founded in 1910, are Denver-based international operations (Noel et al. 1994:42) though both have since closed their manufacturing operations in Denver.

The flagship of manufacturing in the state was the steel industry in Pueblo, led by the Colorado Fuel and Iron Company (CF&I) in Pueblo. Its forerunner, the Colorado Coal and Iron Company, arose from the tremendous demand for iron and steel machinery for railroads, mining, milling, and smelting. CF&I was the state's leading employer and also the largest producer of coal and steel in the West for almost 70 years (Noel et al. 1994:42). With the growth of CF&I, Pueblo became established as an important industrial center focusing on steel, iron, and smelting by the 1890s. This was largely because of the town's proximity to deposits of iron ore and coal, and, to a lesser extent, proximity to mining regions in the mountains to the west. By 1912, numerous other major manufacturing companies were established in Pueblo, including the Newton Lumber Co., Stearns Rogers Manufacturing Co., Mountain Ice Co., Pueblo Gas and Fuel Co., Walter Brewing Co., Rood Candy Co., Lithia Water Bottling Co., Mead Hay Press Co., McClelland M. I. & R. Co., the Pueblo Brass and Iron Foundry, American Smelting and Refining Co., Arkansas Valley Railway Co., Summit Pressed Brick Co., Continental Oil Co., Florman Mercantile Co., Nuckolls Packing Co., and W.F. Doertenbaugh, among others.

The diversity of the manufacturing industry in Colorado ensures that the archaeology of manufacturing as a whole is highly variable in both the types of sites present and the quality of the remains. In this section, the major manufacturing industries of Colorado are discussed separately, with a focus on identifying links between the history of manufacturing in Colorado and specific spatial and temporal contexts. Only the major manufacturing industries in Colorado's history are discussed from an archaeological perspective. These include the steel and iron industries, mechanical equipment fabrication and repair, chemical industries, nonmetallic mineral products (such as bricks, ceramic, and plaster), stone finishing, vessel manufacturing (cans, bottles, and stoneware), transportation and freighting, arms and ammunition, textile working, and rubber products. A host of other specialized and perhaps more unique productive industries were established throughout Colorado including industries relating to photography, printing, jewelry, and textile working. However, very limited information exists, and no detailed assessment is provided in this chapter. Nevertheless, it is expected that in the analysis of the archaeological characteristics of the major and more pervasive industries in Colorado, certain recurrent themes and methods of investigation will become evident that would equally apply to the investigation of an operation not discussed here.

Figure 25 presents a generalized overview of some of the better-known manufacturers in Colorado, with broad chronological distinctions.





Mapped locations are approximate.

**Key to numbered manufacturers:**

- |                                    |                                       |                                   |
|------------------------------------|---------------------------------------|-----------------------------------|
| 1 Forney Industries                | 14 Watts-Hardy Dairy                  | 27 Western Food Products          |
| 2 Western Cutlery                  | 15 Monfort Meats                      | 28 Cucharas Mill                  |
| 3 Alexander Aircraft               | 16 Nuckholls Packing Industry         | 29 Schneider Brewery              |
| 4 Van Briggie Pottery              | 17 Manitou Mineral Water              | 30 Easterday Mill                 |
| 5 ABEX Railroad Products           | 18 Sinton Dairy                       | 31 Saguache Flour Mill            |
| 6 Sterling Beef                    | 19 Walters Brewery                    | 32 San Luis Valley Beet Sugar Co. |
| 7 Great Western Sugar (multiple)   | 20 Quaker Flour Mill                  | 33 Jacques Mill                   |
| 8 Budweiser Brewery                | 21 Hillside Dairy                     | 34 Rocky Mountain Chocolate       |
| 9 Sigman Meats                     | 22 National Beet Sugar Co.            | 35 Russell Stover Candies         |
| 10 Kuner-Empson Cannery            | 23 Alfalfa Dehydrating Plant          | 36 Skyland Food Corporation       |
| 11 Silver State/Ft. Lupton Cannery | 24 American Beet Sugar Co. (multiple) | 37 Enstrom Candy                  |
| 12 Kuner Pickle and Cannery        | 25 Rocky Ford Melon Seed Co.          |                                   |
| 13 Boulder Poultry Farms           | 26 Holly Sugar Co. (multiple)         |                                   |

**List of Denver area manufacturers:**

- |                              |                     |                     |                                    |
|------------------------------|---------------------|---------------------|------------------------------------|
| ● Denver Union Stockyards    | ■ Arvada Flour Mill | ● Sinton Dairy      | ■ Conagra Flour                    |
| ● Baur Confectionary         | ■ Stokes Chili      | ● Robinson's Dairy  | ■ Keebler Cookies                  |
| ● Morey Mercantile           | ■ Mile High Poultry | ● Adolph Coors      | ■ Denver Wholesale                 |
| ● Hungarian Flour            |                     | ● Beatrice Co.      | ■ Red Seal Potato Chips            |
| ● Zang                       |                     | ● Frederic Printing | ■ Ralston-Purina                   |
| ● Tivoli Brewing Co.         |                     |                     | ■ Denver Tamale Co.                |
| ● Smiths Mill                |                     |                     | ■ Meadow Gold Dairy                |
| ● Rough and Ready Flour Mill |                     |                     | ■ Packaging Corporation of America |
| ● Colorado Iron and Steel    |                     |                     | ■ Midwest Steel                    |
| ● Kindel Bedding             |                     |                     | ■ Samsonite                        |
| ● Vulcan Iron                |                     |                     | ■ Wright and McGill                |
| ● Burkhardt Steel            |                     |                     | ■ Ideal Basic                      |
| ● Rocky Mountain Paper       |                     |                     | ■ Silver Engineering               |
| ● Overland Cotton            |                     |                     | ■ Rocky Mountain Bank Note         |
|                              |                     |                     | ■ Gates Rubber                     |
|                              |                     |                     | ■ Electron                         |
|                              |                     |                     | ■ C. A. Norgen                     |
|                              |                     |                     | ■ Jeppesen                         |

Adapted from Maps 22, 41, and 42 from Noel et al. (1994)

**Figure 25.** Map showing major manufacturers in Colorado.

## Manifestation of the Theme in Colorado's Archaeological Record

A generalized archaeological matrix for the range of productive industries is shown in Table 36, making a basic distinction between sites in urban and rural settings. This table serves to provide a systematic and preliminary framework in the investigation of productive industry sites of different scale and identifies some common elements in an archaeological theme characterized by high variability.

**Table 36.** Generalized archaeological matrix for productive industries.

Scale	Composition	Socioeconomic Interpretation		Common Date Range(s)
		Urban	Rural	
Individual/family production	House with additional shed or workshop space, one or two pieces of specialist equipment, no structural addition in site layout, variable packaging and design, sparse yet diverse artifact assemblage.	Traditional/unique production within family business that may not be geared for profit, little or no capital expenditure, serving a local interurban community.	Serving local needs or supplementing primary income/work, little or no capital expenditure.	Common during the late 1800s during a period of self-sufficiency; remnant novelty operations are likely to be found associated with more recent periods and during period of economic downturn.
Small-scale production	Workshop, large shed, or small warehouse, several pieces of specialist machinery, moderate structure in site layout and composition, structured but simple packaging and design, moderately dense and diverse artifact assemblage.	Operation focusing on specialist production of rare or high-valued items and using traditional equipment not necessarily relevant to the time (e.g., hand-working), limited to low capital expenditure, serving a wide urban community and perhaps surrounding hinterland. May have been a major player but became smaller with development of conglomerates.	Operation growing into important primary industry base in the local region, with limited to moderate capital expenditure, serving local rural town and hinterland.	Concurrent with the growth in population after the mining rush in 1859 to about 1900, when improved transportation allowed for easier access to cheaper goods. Could have persisted in more isolated regions.
Medium-scale production	Factory or warehouse with recognizable and distinct components, large number of specialist equipment and machinery, moderately dense but relatively homogeneous artifact assemblage.	Such sites represent sound investor confidence, an earnest attempt at maximizing production, modest profitability, and serving regional or statewide markets.	Local conglomerate supplementing or taking advantage of local agricultural produce or raw materials, moderate capital expenditure, serving regional market, or perhaps a subsidiary of a major conglomerate.	1900 onward, likely filled a local and regional niche into the large-scale era.
Large-scale, developed and mechanized production	Large factory and warehouse with ancillary buildings structured and organized site layout and composition, specialized equipment, moderately dense and homogeneous artifact assemblage.	Represent a greater capital expenditure, with investor confidence, and most likely a conglomerate with several other factories or production areas, and controlling some of the associated primary industries in the local region, with great profitability, serving statewide and perhaps national markets.	Urban, but also rural, and structuring the layout of the wider town or community by being the primary industry. May also be a deliberate move away from the urban setting for lower land and operational costs as well as getting closer to primary suppliers.	1900 to late 1940s, decline after WWII.

## ARCHAEOLOGICAL CHARACTERISTICS THAT MAKE SITES IN THE THEME IDENTIFIABLE

### Steel and Iron

The Colorado Coal and Iron Company was established in Pueblo in 1880. The company installed the first blast furnace for steel production in the West in 1880, followed by a Bessemer plant in 1882 that enabled manufacture of the first railroad rail in the West. The company had a very close relationship with the Denver & Rio Grande Railroad Company (D&RG), which enabled it to acquire coal and iron ore and to ship its products throughout the region. It was also a major supplier of railroad rails to the company. The company merged with the Colorado Fuel Company in 1892, becoming the Colorado Fuel & Iron Company (CF&I). The company retained its close relationship with the D&RG and began to be managed under the direction of the Rockefellers (Clark 1929:244-245). The steel industry employed over 5,000 workers by 1900, and an output almost equivalent to all other Denver manufactures combined.

Several other iron and steel companies were established, particularly in Denver, including Thompson Pipe and Steel (1878), Stearns-Rogers (1883), Burkhardt Steel (1889), Vulcan Steel (1894), Midwest Steel (ca. 1900), and Eaton Metal Products (1919). The types of structures, equipment, and other materials likely to be found at steel and iron manufacturing sites are listed in Table 37. For archaeology, it is important to be aware of major temporal changes in technologies in the interpretation of an associated site. For instance, a number of labor-saving machines, such as mechanical stamps and rolling machines, were introduced to the steel mills in the 1880s. The Bessemer steel process, introduced at the Colorado Coal & Iron Company plant in Pueblo in 1882, enabled the production of wire products, particular wire fencing and wire nails. By the 1890s, open-hearth methods became relatively widespread and in 1918, electric furnaces were adopted. From 1915 to 1929, production of vanadium, molybdenum, chromium, and manganese increased for use in steel alloys. By the 1920s, continuous rolling mills were developed to supply the durable goods industries.

**Table 37.** Structures, equipment, and materials typical of the steel and iron industry.

Structures	Equipment and Materials
Mills, offices, trestles, shops, storehouses, sheds, coke ovens, forges, foundries	Blast furnace, open hearths, hot air stoves, tuyeres (hot blast nozzles), Bessemer converters, electric furnaces, slag and hot metal ladles, molds (pigs and ingots), skip hoists, cupola roasters, soaking pits, pickling pits, charging lorries, saws and shears.

### Mechanical Equipment Fabrication and Repair

The business of mechanical equipment fabrication and repair is associated with industrial equipment; automobiles, wagons, and farm equipment; and other more specialized pieces of equipment, such as precision instruments like clocks, gauges, and survey instruments. Although it is impractical to go into any specific detail about the archaeological context for each of these specialized categories, some common traits are identifiable.

In terms of industrial equipment fabrication and repair, one trend is particularly important. Despite a general decline in mining and smelting operations in Colorado, particularly after the Panic of 1893, many associated engineering and manufacturing firms survived. Central City's Eureka Foundry (1861) and McFarlane Mining Machinery Company (1871) were two pioneers of the mining supply industry. Eureka Foundry evolved into Hendrie and Bolthoff, which moved to Denver and claimed to be "the world's largest Manufacturer of Mining Machinery." Other substantial Denver-area firms provided drills, ore buckets and cars, dynamite, ore concentrators, and engineering expertise. Several of these have survived, including Anaconda Minerals, Cyprus Minerals, Morse Brothers, Newmont Mining, and Stearns-Rogers. The George Leyner Engineering Works at Littleton, which invented and manufactured compressed-air safety drills, merged with the international conglomerate Ingersoll-Rand in 1920.

For farm equipment, it is important to note that despite the formation of many cooperatives within the agricultural industry, most farmers repaired and maintained their own equipment. As McComb (1981:9) states, "People learned by observation, reading local newspapers and farm journals, and by sharing information with each other." Even with the appearance of mechanical equipment to assist in farming, such as the appearance of mechanical reapers in the mid-nineteenth century, the largely independent nature of farming meant that the fabrication and repair of such machines was undertaken on the farm itself or by local blacksmiths.

In terms of automotive equipment and repair, it is somewhat surprising that a number of individual and small-scale automotive builders were present in Colorado. On the other hand, automobile manufacture should be expected, given that Colorado ranked eighth in the nation for per capita vehicle ownership in 1928, with over 250,000 passenger cars and 20,000 trucks registered in the state (Wyckoff 1999). The desire to create a self-sufficient and independent Colorado, as mentioned above, was perhaps another reason for the attempts at a local automotive industry, with an emphasis on local ingenuity.

Many of these early automobile entrepreneurs expanded or merged into other industrial operations. For example, English-born machinist Robert Temple, Sr., built the first gasoline-powered automobile in Denver in 1899 (Wells 1996). In 1927, Robert Temple, Inc., was established, devoted to engineering research in industrial operations. In 1899, W. O. Anthony of Colorado Springs announced that he intended to manufacture several styles of motor vehicles: a phaeton, a delivery wagon, and a runabout buggy. The Anthony Motor & Mfg. Company (later Anthony Motor and Cycle Company) was incorporated in Denver in July 1903. Anthony died in an automobile accident in 1904 and the firm was sold to Western Automobile and Supply Company in 1906. Some companies were established to cater to "Colorado conditions." For example, in 1900, Patent No. 658,347, was issued to William F. Crowley for the Crowley Automobile Agricultural Machine, which functioned as a tractor for use in sugar beet fields. A planting, cultivation, and harvesting implement came as an extra. Between 1921 and 1934, Jarrett Truck and Finance of Colorado Springs built 300 trucks with an ability to climb the hills and mountains of the area. Most of the parts came from outside of the area, but the cabs, bodies, and final assembly were done at the Jarrett plant. The short-lived American Tri-Car of Denver, founded in July 1911 by Henry F. Evans, Rudolph Kysela, and Clarence O. Fritchle, constructed a three-wheeled car with rear-wheel drive with one-wheel braking that sold for \$385 (Wells 1996). In 1923, Plains Motors of Denver claimed they had built the "world's master truck"; the company folded within 16 months (Wells 1996). Although many of these early companies were short lived, evidence of their operation may not have completely disappeared. One example is the Baker Steam Motor Car and Manufacturing Company, incorporated November 7, 1917, with a manufacturing facility in Pueblo. The company received at least 20 U.S. patents between 1919 and 1925 but produced only a few touring and roadster cars. Two of the factory buildings remain in the north section of Pueblo.

## **Chemical Manufacturing**

Nationally, the chemical industry employed approximately 55,000 people in 1899 and 70,000 in 1904; more than electrical machinery producers but fewer than the iron and steel industry (Haber 1971:10). In the late 1800s, most chemical plants manufactured caustic soda, chlorine, and sodium hypochlorite, the latter two used for treating wood pulp (Haber 1971:27). The early twentieth century chemical industry consisted of three distinct manufacturers: makers of heavy inorganic chemicals, dyestuff producers, and compounders. The latter were manufacturers that bought, mixed, and resold, chemicals for the fertilizer, pharmaceutical, and toilet preparation industries (Haber 1971:31). The national chemical industry rose to prominence in 1909 with the introduction of synthetic fertilizers by the American Cyanamid Company. The "green revolution" in agriculture dramatically improved crop yields. In addition, chemical sprays began to be produced to control insects and gave rise to new products (Haber 1971:31). In Colorado, the chemical industry was late in developing and was limited in scope, though the manufacture of fertilizers was an early focus. Two major chemical producers were the Rocky Mountain Arsenal (5AM628), a federal chemical weapon manufacturing plant, and Arapahoe Chemicals, Inc., in operation between 1946 and 1972. The army produced chemical agents at the Rocky Mountain Arsenal until 1957 and used the site for weapons operations until 1969. The arsenal was also used by the Julius Hyman Co. for pesticide production from 1946 to 1952.

The Shell Chemical Co. (later Shell Oil Co.) acquired the Julius Hyman Co. in 1952 and continued the production of pesticides and herbicides until 1982.

## **Nonmetallic Mineral Products**

Manufacture of nonmetallic mineral products includes such items as brick, cement, concrete, stone, and a host of more specialized products, such as ceramic pipe, ceramic and glass household wares, ceramic and glass scientific wares, plaster, glass containers, and window glass. Only broad patterns and descriptive contexts are presented here, given the variability within the category.

### **Brick**

The disparity of wealth in Colorado's towns and cities was manifested in a wide range of housing styles and building materials. Building techniques respond to the available local resources but also to available skill and knowledge and scale of trade. By the 1880s, one sign of a prosperous town in Colorado was the appearance of brick and stone buildings in business districts. Not only were brick and stone chosen for their fireproof qualities, but they were symbols of permanence and prosperity. Brick also became a popular home-building material in middle-class and upper-class neighborhoods. Depending on the neighborhood, houses ranged from shacks to small frame houses to brick and stone mansions. By the turn of the twentieth century, builders in Denver and other large cities were also constructing apartment buildings. Numerous brickworks were scattered around the state wherever firebrick and pottery-clay deposits were found. Two of the oldest are Denver Brick and Robinson Brick & Tile (founded in 1880). Some of the larger industrial brick companies were the Denver Sewer Pipe & Clay Co., Denver Fire Clay Co., Diamond Fire Brick Co. (Cañon City), Standard Fire Brick Co. (Pueblo), Golden Fire Brick Co., Jewett Fire Brick Co., and the Longmont Brick & Tile Co. (Gurcke 1987). Most of the large industrial brick and tile manufacturers were along the Front Range, where large clay deposits existed, demand from industry was substantial, and excellent railroad transportation existed.

Nearly every town or city once boasted a local brickyard that was likely to have been an important component of the town's economy. For example, the town of Arvada was officially incorporated on August 24, 1904. The business included a livery stable, a feed store, a blacksmith, a threshing operation, a tannery, a shoemaker, a dry goods store, a cigar store, a grocery store, and a lumber yard. However, Arvada's economy expanded greatly in 1906 with the opening of a brickyard that employed over 40 people. A second example is the Golden Pressed Brick Works, destroyed by fire in 1895. This complex, the second-largest brick manufacturing facility in Golden, was established by Fischer and Rudolph Koenig in 1873, and its product was used to build many buildings in the region.

Brick and tile factories were rather involved industrial complexes. Most factories were established at a convenient clay source that could be mined adjacent to a processing plant. As these deposits became exhausted, the larger companies obtained clay from more distant sources that was transported to the plant. Clay was prepared by weathering, then temper was added and mixed, usually using a pug mill. Often two or more clays were mixed together to make a brick with specific characteristics. The prepared clay was then molded into bricks. Early brickmakers formed bricks in molds by hand with excess clay struck off with water or sand. At most brick plants, bricks were made by machines that either extruded and cut them or pressed them individually in molds. Bricks were then stacked for drying in preparation for firing in a kiln. Kilns were either permanent structures or temporary structures actually constructed of brick intended to be torn down following a firing. After firing, bricks were stacked and prepared for sale or shipment (Gurcke 1987). All of the industrial features of brick manufacture can be expected to be found in both aboveground and archaeological contexts throughout the state.

### **Concrete and Cement**

Concrete and cement began growing in popularity as building materials in the late nineteenth century. Economic growth created new uses for concrete, including office buildings, sidewalks, streets, highways,

bridges, and dams (King 1984:187). Previously, stone had been the most commonly used masonry building material (see below). With the discovery of “cement rock” (rock that could be ground and burned in a kiln to make natural cement) at Cañon City and elsewhere, cement mills were opened in Denver as early as the 1880s (King 1984:186). The use of natural cement has both distinct advantages and disadvantages, as noted by King:

Natural cement, crushed under millstones and burned or calcined in vertical kilns, had its limitations. Its processing was slow and expensive; the concrete made from it required months even years to acquire full strength. Despite these drawbacks, the demand for strong, watertight construction material encouraged the establishment of natural cement manufacturing plants in many parts of the country. (1984:186)

Mehls suggests that concrete had other distinct economic and ideological advantages over stone:

Additionally, because of its portability, flexibility in use, and relatively low cost, cement [concrete] became the most widely used paving material as the Good Roads Movement spread. Because of this, concrete companies could undersell their stone competition. Also, cement [concrete] was seen in the popular mind as the modern material, granite the archaic. Desires to be in step with the times led builders to shun stone. (1984:119)

A certain degree of homogeneity is expected if a range of cement and concrete industry-related sites are investigated, given that the industry used a standardized technology and made a uniform product. Furthermore, competition led to business consolidations, eventually leaving only several large manufacturers operating many plants (King 1984:187). King (1984:187) provides a summary of a major cement company with numerous links to Colorado industry and general history.

The Ideal Cement Company of Denver, organized in 1927, expanded from a strong regional base in the Rocky Mountains. Entrepreneur Charles Boettcher began producing cement from a plant he purchased at Portland, near Florence, in 1901 and operated under the name Colorado Portland Cement Company. Although the cost of long-distance freight kept outside competition to a minimum, the company swiftly gained control over a large territory, supplying cement (under the brand name Ideal) for beet sugar factories, reclamation and irrigation projects, roads, and commercial buildings. Boettcher demonstrated the strength of concrete by constructing the first multistory reinforced concrete buildings in Denver in 1908. The Ideal Building, at Seventeenth and Champa streets, served as company headquarters until 1975, although Ideal sold the building in 1928 to the Denver National Bank. Between 1908 and 1917 the United States Portland Cement Company, affiliated with the Coors family, operated a plant at Concrete near Portland, but the mill became a Boettcher property in the late 1920s when an antitrust prosecution forced its closing. In 1928, Ideal built a plant at Boettcher, near Fort Collins, that took both limestone and shale from a neighboring quarry. By the 1930s, Ideal ranked as a major national producer of Portland cement, with factories in Colorado, Utah, Montana, Nebraska, Oklahoma, and Arkansas.

The archaeology of the concrete and cement industry includes concrete and cement plant complexes, quarries, cement mills, lime kilns, raw material storage bins, cement silos, elevators, office buildings, tanks, stacks, and a wide range of machinery and equipment, such as rock crushers, hammer mills, tube mills, ball mills, conveyor belts, rotary kilns, clinker coolers, boilers, and vibrating screens.

## **Stone Finishing**

King provides a succinct summary of patterns in the stone-finishing industry in Colorado:

From the 1890s to 1941, quarries around the town of Marble near the Crystal River produced Colorado Yule, a handsome stone streaked with yellow bands that compared well to Italian Carrera marble, that was used in the Tomb of the Unknown Soldier, the Lincoln Memorial, and many significant public structures. Travertine, a distinctive tan and brown marble, went from quarries near Salida into the construction of government buildings in Washington, D.C. and Denver. The rapid urbanization of

Colorado from 1870 to 1915 kept many quarries busy supplying building stone. The notable Denver masonry construction firm of Geddes and Serrie used Colorado stone on several important projects, including granite from Aberdeen, near Gunnison, for the State Capitol, native red sandstone for the Brown Palace Hotel, and local granite for the Cheesman Dam, a storage reservoir for the Denver Union Water Company. (1984:193)

In terms of the archaeology, King discusses some overall patterns in stone finishing operations that are important to consider:

Some quarries shipped their stone to mills in cities where fabrication for specific building projects took place; stone masons at the construction site added final touches. Finishing mills or dressing plants housed several different kinds of machines that prepared the stone for market. Gang saws, consisting of many saws attached to a single frame, sliced the stone into several slabs in one operation. Planers shaped the stone, and rubbing beds polished the product. Some mills also contained circular diamond saws and guillotines for cutting and shearing the stone. (1984:193)

The types of archaeological sites or features that can be expected at stone-finishing industry sites include quarries, pits, dumps, roadbeds, finishing mills, powder and tool sheds, employee housing, blacksmith shops, tram shed, derricks, and crushing plants. Associated machinery and equipment includes power and hand tools, augers, channelers, tramways, rock crushers, cranes, circular saws, wire saws, guillotines, planers, rubbing beds, gang saws, chisels, picks and shovels, feathers, and air compressors. The most complete archaeological assessment of a stone finishing plant in Colorado is that for the Colorado-Yule Marble Company finishing mill (5GN270) at Marble (Archimede 2000).

### **Cans, Bottles, and Stoneware Vessel Manufacture**

The manufacture of cans and other vessels made of iron or steel tinsplate was initially done completely by hand labor. In 1849, a press was introduced that cut can ends and filler holes for food cans in one step. The cans were then assembled and soldered by hand. In 1876, automatic can-end soldering was introduced, and automatic soldering of can sides was implemented in the early 1880s. Still, the filler holes and vent hole were sealed with lead solder by hand. Locking side-seam equipment had been in general use after 1869 for buckets and containers intended for dry goods. It was not until the 1890s that a rubber gasket compound was added to the process that led to locking side seams being used on food cans. Fully mechanized can production began in 1904 with the introduction of the sanitary can, a type still in use today (Rock 1989:39-63).

The R. Hardesty Manufacturing Co. of Denver was a pioneer in the production of cans for canning. Rudd Hardesty was initially in the flavoring extract business and expanded into other food and household products shipped throughout the Intermountain West, founding the Hardesty Manufacturing Company in about 1897 (*Rocky Mountain News* [Denver] 1934; *The Denver Times* 1902). The company began manufacturing tin cans for their products in about 1899. In 1911, the food products portion of the company was sold to the C. S. Morey Mercantile Company, and the company focused on the manufacture of tin cans, corrugated culverts, and other sheet metal items. The company evidently became associated with the Continental Can Company, founded in 1904, and was reported to have been instrumental in their becoming the second largest can manufacturer in the country. By 1930, the company was no longer manufacturing cans, but was a major manufacturer of sheet metal pipe, culverts, flumes, metal signs, smokestacks, and other metal products (Colorado State Business Directory 1899-1930; Denver City Directory 1899-1930; Myatt 1961). They were purchased by ARMCO Drainage & Metal Products, Inc. in 1943. Another pioneer can manufacturer in Colorado was John Empson, a vegetable canner in Longmont. Empson operated his own can manufacturing plant between 1915 and 1920 (May 1937:70-78); cans marked "Empson" in script probably date to this period.

Archaeological sites associated with the manufacture of cans for canning will largely have the appearance of a metal shop where large sheets of metal were cut, stamped, and assembled as cans. Actually filling and sealing of the cans would have taken place at canneries where large quantities of fruit and

vegetables, meat products, or other food products were processed. Early can manufacturers in Colorado would be expected to have had equipment reflecting the method of production and technology in use at the time they were in operation. For instance, can manufacturers before 1876 would have had machinery for the stamping of can ends, but the entire assembly and soldering process would have been by hand. Prior to the advent of the sanitary can in 1904, food can manufacturers would have needed to handle large quantities of molten lead to seal can seams. Manufacturers after 1904 would likely have been entirely automated, though some hole-in-cap can manufacturers may have persisted into the 1910s and perhaps longer.

Bottling of food products and beverages in glass was dependent upon importing bottles and jars from outside Colorado until 1883. Imported bottles were topped by beer and ale bottles, with considerably fewer quantities of other food bottles and jars and druggist's bottles. By far, the greatest quantity of imported glass was for windows. The Denver Glass and Manufacturing Company was incorporated in 1882, and the company constructed a glass factory in 1883. The Denver location was selected because raw materials for the manufacture of glass were close at hand and because of the commercial activity of Denver. The company manufactured soda and mineral water bottles until at least 1888. The defunct factory was reopened in 1896 as the Valverde Glass Works, which manufactured soda and beer bottles, pickle jars, canning jars, battery jars, and electrical insulators. It was destroyed by fire in 1899, and subsequent reorganization resulted in the opening of the Western Flint Glass Company at the same place later that year. The new company evidently offered the same line of products as its predecessor. Another reorganization in 1900 resulted in the founding of the Western Glass Manufacturing Company, which was also destroyed by fire in 1909, never to be reopened. A competing glass works was established in Golden in 1887. It began as the Golden Glass Works but was reorganized later that year as the Colorado Glass Works Company by Adolph Coors and others. It only operated until late 1888. The Colorado City Glass Company was founded in 1889 by Adolphus Busch and other outside investors. It was destroyed by fire in late 1892, then rebuilt, but succumbed to the economic downturn associated with the Panic of 1893 (Clint 1976:31-42).

Glass works required stockpiling and mixing of raw materials for glass, including coloring agents, and large furnaces capable of melting large quantities of glass in preparation for making jars and bottles. By the 1890s, many glass factories incorporated some semiautomatic bottle molding machinery, but all bottles were finished by hand until 1904, when a completely automatic bottle-making machine was introduced. Still, hand finishing of bottles continued in some plants until about 1920 (Miller and Sullivan 1984:83-96). Hand finishing required specialized tools and space for workmen. The finished products from an automatic bottle machine required no further handling and could be packaged and shipped immediately.

A small number of manufacturers of commercial stoneware pottery were in business in Colorado, mostly in the Denver area. Included were the Colorado Portland Stone Company (1888-1889), the Colorado Pottery Company in Argo (1893), Denver Steam Pottery Company (1891-1892), Denver Stoneware Company (1895-1901), Denver Pottery Company (1887-1891), Gilmore Brothers Pottery Company in Valverde (1892); Queen City Pottery Company (1896-1905), and the Western Pottery Manufacturing Company (1906 to 1936) (Carlton and Carlton 1994:14; Clint 1976:197-198; Landreth 1984:53). Much of the output of these factories was jugs for alcoholic beverages and crocks for food storage and pickling.

The manufacture of stoneware vessels required a satisfactory clay source that could be mined and a place to stockpile and process clay. Once the clay had been prepared for use, which usually required pulverizing and the addition of temper, it was taken to another space where the vessels were hand created by workers using throwing wheels. Unfired green wares required sufficient space and racks for drying and space was also needed for manufacturing and applying glazes. Last, a ceramic factory required a sizable kiln for firing the vessels (Landreth 1984; 1986).

## **Transportation and Freightage**

Before the advent of the railroad, transportation and freightage was done by wagon and pack animal. An archaeological focus on this period is largely restricted to stations erected by stage and freight lines along the trails, whether to accommodate passengers, change draft animals, or repair wagons. Sites or features



associated with the actual manufacturing of wagons and associated facilities, if found, are expected to be associated with a rural manufactory or specialist builders. The Timpte Company in Denver is an example of the latter:

Two brothers, William and August Timpte arrived in the Mile High City sometime around 1880, just a few years after Colorado became the 38<sup>th</sup> state of the union. Trained in their father's blacksmithing shop, the Timpte boys first went to work for the railroad in the booming, young frontier town. As Denver grew, so did its transportation needs, and William and August Timpte set up separate companies in 1884. The August Timpte Wagon and Carriage Works and the Wm. Timpte Carriage Works were soon busy supplying and repairing delivery wagons, buggies and carriages. (Timpte Industries n.d.)

After a few years running separate operations, the brothers decided to merge their two shops into one company, The Timpte Brothers Wagon Company. The new operation was established in 1891 and moved to a 12,500 square foot plant at 2300 Market Street in Denver where they remained for the next 50 years. Timpte Brothers became the largest vehicle supplier in the Mountain states, and the company was busy designing and manufacturing buggies, carriages, light spring wagons for mining, commerce and local delivery, and heavy brewery wagons. After over 30 years of building their young company the founders, William and August Timpte, retired. Their sons, T. C. "Tony" Timpte and C. A. "Clem" Timpte, took over in 1916 at the beginning of the age of motorized transport.

Beginning about 1870, railroad building in Colorado progressed at a frenetic pace, with many companies competing against one another to survey routes and lay tracks (King 1984:97). Many companies resigned themselves to the fact that they would be rebuilding hastily constructed bridges and tracks and adding permanent structures at a later time (King 1984:97). The mountain railroads in Colorado are notable for using narrow-gauge trackage, first adopted by William J. Palmer for his Denver & Rio Grande Railroad in 1871 (King 1984:97). In other ways, Colorado railroads followed national trends, converting, for instance, from iron rail to more durable steel rail in the 1880s and 1890s. Manufacturers of railroad-related machinery and equipment were present early on in Colorado, such as Griffen Wheel Company of Denver, makers of chilled iron wheels. As mentioned above, Colorado Fuel & Iron Company had a very close relationship with the Denver & Rio Grande Railroad Company and was a major supplier of railroad rails to the company.

By the 1930s, freight trucking and bus companies competed directly with railroads in the transportation and freighting business. This competition was made possible by improvements in automobiles and the development of good roads and highways. Continued development of highways in the 1930s and 1940s reduced dependence on railroads, eventually causing most rail lines in the state to cease operation in the 1950s. The Defense Highway Act of 1941 furthered the concept of a highway system as a necessity for national security and was acted upon by Congress in 1944. Studies continued through the 1940s and early 1950s, and in 1956, the National System of Interstate and Defense Highways was approved. As the name implies, the highway system enabled fast and convenient movement of people and goods along federal interstate highways, but it was also intended to increase national military preparedness (Armstrong 1976:53-106).

Several manufacturers of automobiles in Colorado were geared to the transportation and freight market. For example, between 1911 and 1915, the Byron Motor Company of Denver built 1,500 delivery wagons with two-cylinder engines (Wells 1996). Between 1904 and 1917, 286 electric autos and trucks and one racing car were produced at three Denver locations by Fritchle Electric (Wells 1996). However, in 1918, the firm switched to the production of wind-electric plants and installed 80 plants in 20 states and foreign countries between 1918 and 1924.

In terms of air transportation, American factories produced a total of 49 planes per year by the start of World War I, and in 1918, production exceeded 14,000 (King 1984:91). The war effort was a major boost in production for certain manufacturers. Nevertheless, in Colorado, air-related manufacturing within the industry was limited; most construction related to ancillary services, such as air fields, landing strips, beacons, radio towers, and terminals, whereas early "airports" were actually fields or pastures with only one or two

temporary buildings, leaving little on-the-ground evidence (King 1984:94). Delivery of the U.S. mail was a major factor in the establishment of air service and landing fields. For instance, the first airport in Montrose doubled as a golf course and was initiated for mail delivery in 1928. Increased use through the 1930s and 1940s led to its being replaced in 1948 (Horn 1989).

Prior to the advent of the railroad, goods brought into Colorado were transported by long-distance multistate freighters to a few central depots in major towns or cities from which the goods were dispersed to local markets by long-distance forwarding freighters. With the entry and expansion of the railroad, freighting depots were established at many points along the rail routes, making dispersal of goods considerably more convenient. Long-distance forwarding freighters often changed their places of operation to new end-of-the-line points as railroad lines were extended, reducing, but not replacing, the need for freight forwarding services. Prior to the advent of the automobile, freight depots were large warehouses where goods were stored temporarily and loaded onto wagons. Barns, stables, and corrals were necessary components of a freighting business to care for and keep the considerable number of animals required to pull the freight wagons. Also needed were facilities for wagon repair, horseshoeing, and harness maintenance and repair. Stops were also maintained along the freight routes and these contained many of the same facilities for wagon and animal care as the main depot. Often, the routes utilized by a freighting company were toll roads operated by the freighting company, and these facilities doubled as toll stations or provided meals and overnight accommodations for travelers. These facilities are frequently referred to as stage stops or toll stations in the popular literature. As railroads infiltrated the state, shorter freight hauls were necessary, and fewer of these support facilities for freighters and travelers were required. Toll roads also became a thing of the past as county governments began taking responsibility for construction and maintenance of roads. With the advent of automobiles and the use of motorized trucks for freight delivery, the need for wagons and animals for motive power disappeared along with the facilities previously needed for their care and maintenance. A major trend in this regard was a transition by blacksmiths toward automotive repair and maintenance. The changes in freighting with the advent of railroads and automobiles will certainly be evident in the composition of complexes that served the freighting industry.

A particularly good example of an excavated wagon freighting facility that also functioned as a toll station is the White River Stage Station (42UN2558), occupied between 1905 and 1909 in northeastern Utah (Pfertsh 2003c). It included a barn, stable, animal exercising facility, blacksmithing area, and residential structures.

### **Arms and Ammunition**

Two major arms and ammunition facilities built for American participation in World War II were the Denver Ordnance Plant and Rocky Mountain Arsenal. In 1940, Denver promoters made the army an offer of local assistance if a munitions factory was built near the town; the War Department built the Ordnance Plant that year. The factory originally produced .30- and .50-caliber ammunition through contracts with Remington Arms Company. After the war, the Henry Kaiser Company used the facility to build artillery shells. In some instances, local businesses were engaged by the war movement to manufacture ammunitions. For example, the Heckethorn Manufacturing and Supply Company in Littleton, established in 1938, manufactured pulleys and hardware. In 1941, the company converted its operation to the manufacture of photographic products and hardware specialties such as 20-mm projectiles and 4.2-in. chemical mortar fuses for the navy. In 1945, the company manufactured approximately 50 million projectiles and employed 1,100 people. The boost to the economy provided by such factories and military bases not only helped end the Great Depression, but, after 1945, these facilities continued to contribute to the local economy as either bases or federal installations (Mehls 1984c:139).

Key elements of arms and ammunition facilities were conveniently situated near railroads for transportation of materials in and out and were kept at a distance from population centers for public safety reasons. Munitions plants store large quantities of explosive materials and are constructed to prevent accidental ignition of those materials and to minimize damage to surrounding facilities should an explosion

occur. Production of ammunition requires a large machine shop for loading and fabrication of cartridges. A lead foundry for the production of bullets may also be present.

### **Textile Working**

Although textiles were a major Colorado industry in the early 1900s, it soon declined, following the failure of the Overland Cotton Mill Company and the move of the C. J. Kindel Bedding Company. The Overland Cotton Mill Company was the only cotton mill in Colorado; it operated in Denver between 1891 and 1903 and sold its cotton cloth throughout the United States and to China. The mill was the main employer for the community of Manchester, which was essentially a company town. The demise of the company was largely a result of its labor practices. Employees were imported from the South and kept in servitude through low wages, requirements to rent company housing, and debt to the company store. Most egregious was their practice of employing child labor under terrible working conditions and often as a requirement for other family members to remain employed. A campaign against the Overland Cotton Mill regarding their use of child labor led to the passage of the Child Labor Act of 1903. Pressures against the company's labor practices, coupled with a coal strike in 1903 (coal was the fuel used for their large steam engine) resulted in the closure of the mill in 1903 (Newland 2000). The C. J. Kindel Bedding Company was founded by its namesake, Charles J. Kindel, as the Denver Bedding Company in 1901. When the Evans-Smith Bedding Company was acquired, the company name was changed to the C. J. Kindel Bedding Company. Railroads charged the company three times more to ship his mattresses to the West Coast than to his East Coast competitors. Kindel fought against "discriminatory" freight rates through the U.S. House of Representatives, claiming that the exorbitant rates retarded the development of Colorado manufacturing in favor of eastern states' firms (Noel et al. 1994:42). With the merger of the companies and perhaps because of the high freight rates, Kindel went into the furniture-manufacturing business and moved his operations to Michigan.

### **Leather Products (Harness and Saddle, Clothes, Shoes, and Furnishings)**

One example of leather manufacturing in Colorado is the Colorado Saddlery. Founded in 1945, it was previously known as HH Heiser Saddlery and it manufactured holsters, knife sheaths, chaps, and saddles. A number of other saddlery shops were in industrial Denver, including the Wilson Saddlery and the Gallitan Saddlery. Saddle-making shops could actually be found in towns all over Colorado, such as the F. Burkhard Saddlery in Trinidad and the Burton Saddlery in Cañon City.

A prominent saddle making business was S.C. Gallup and Frazier Saddlery, of Pueblo, which operated between 1892-1898. Frazier and Gallup were the makers of the Pueblo Saddle, which became the standard saddle of the working cowboy. Frazier continued to make saddles in Pueblo after he split from Gallup, and, by 1917, he was the leader in stock saddle production. The Colorado Saddle Makers Association summarizes that

For over one hundred years, Colorado has been a major center for western saddle making. In the late 19<sup>th</sup> Century and early 20<sup>th</sup> Century, Pueblo was home to such well-known makers as Gallup, Frazier and Flynn. Pueblo was renowned for its saddle makers, a specific style, known as the Pueblo Saddle, developed and was highly sought after. Likewise, Denver was host to such makers as Gallatin, Heiser, Mueller, and Colorado Saddlery (Colorado Saddle Makers Association 2004).

Saddle shops were often accompanied by harness, boot, and shoe shops, exemplified by the Paonia Harness Boot & Shoe Shop, in operation around 1908. These sites were typically in the commercial districts of towns and were often a component of larger mercantile stores. Leatherworking, like blacksmithing, was a necessity in even the smallest communities and rural residents on ranches and in more isolated towns likely had leather making and repair equipment.

Specialized equipment for saddle making included creasers or ticklers, draw gauges, edge tools, embossing wheels, hammers, nail cups (holders), punch pliers, knives, stitching awls and horses, strap

holders, thickness splitters, saddler's compasses, leather belt drives, and saddler's spoke shavers. Cobblers used some of these tools along with boot stretching pliers, lasting pincers, seam turners, welting wheels, and welt setters. A saddle/harness/shoe shop would also have steel hardware, such as buckles, clips, rivets, and bits.

### **Rubber and Plastic Products (Tires, Footwear, Clothing, and Containers)**

The leading example of the manufacture of rubber products in Colorado is Gates Rubber Company in Denver. Charles Gates, Sr., bought the Colorado Leather and Tire Company in 1911, which had been producing durable tires. In 1917, Charles's brother, John Gates, invented the rubber "V" belt used on engines, and Gates quickly expanded into one of the leading rubber-belt manufacturers in the world. Another historic rubber-production company was the Colorado Molded Products Company in Englewood, founded in 1948. From an archeological perspective, rubber and plastic production sites are rare in Colorado and would likely be restricted to the Denver area.

### **Specialized Manufacturing**

This category includes the manufacture of glass containers; photography; printing; jewelry; basket, broom, or brush making; and wig making, among others. In the investigation of an archaeological site or feature relating to specialized manufacturers, three important considerations are identified:

- Specialized manufacturing may be expressed in households as well as industrial or commercial areas.
- Changing designs often reflect social or economic changes, whereas unique or variable designs often reflect individual expression or expansion of a particular industry away from consolidations.
- Certain machines and equipment were built specifically for Colorado conditions.

## **REPRESENTATION OF SITE TYPES IN STATE DATABASE**

### **Sites within the Theme Recorded in the State**

A search of the OAHP's on-line Compass database revealed 129 sites related to the productive industries theme. These include 22 steel and iron manufacturing, 11 charcoal kilns, eight coke ovens, nine machine shops, two chemical companies, eight brick companies, five clay mines, two cement companies, 12 lime kilns, 30 stone quarries or stone yards, one industrial porcelain company, three pottery manufacturers, eight railroad freight depots, two other freighting sites, three carriage works, one printing shop, and one rubber company. Charcoal kilns and coke ovens could also be considered beneficiation facilities for other industries. Charcoal kilns could be considered elements of the timber industry and coke ovens a conversion process of the coal industry. In both instances, the products (charcoal and coke) were necessary for the production of steel or the smelting of metal ores. All of the arms and ammunition manufacturers in the database were military operations and are not included in the above sites summary. Most of the productive industries sites have been recorded as the result of building survey projects in various towns and cities and have not had their archaeological values considered. However, certain classes of sites have been recorded frequently during cultural resource inventory projects and have been considered for archaeological values. These include charcoal and lime kilns, coke ovens, stone quarries, and clay mines.

### **Adequacy of Recordation and Evaluation**

Because most of the sites recorded for the productive industries theme have been done for projects focused on the built environment of cities and towns, little thought has been given to archaeological values that may be associated with those properties. More consideration of archaeological values has been given to sites recorded in more rural areas because they have generally been more frequently recorded by archaeologists. Still, archaeological data recovery potential is frequently not considered to the degree that it should.

## **Potential for Sites within the Theme to Exist and Be Recognizable**

Most sites within the productive industries theme will be identifiable through historical research. In addition, sites will likely retain characteristics that will make them recognizable through archaeological materials or physical modifications of the landscape. For instance, a brick plant may have a clay source on site, a clay-processing plant, evidence of brick machines, a kiln, clinker pile, and a finished brick yard. Similar facilities may exist for a manufacturer of stoneware pottery, but the equipment used to make the product (ceramic vessels) will be different, the kiln will be different, and the materials in the discard pile will be different. Sites have already been recognized for the major productive industries of the state, though their archaeological potential is virtually unknown and uninvestigated. For many manufactured products, the number of companies involved in their manufacture in Colorado was small, making the likelihood of randomly encountering a particular site type very unlikely. A more productive way of assessing sites of a particular product type would be to research the manufacturers and target their production sites for recordation and evaluation. To date, no automobile or farm equipment manufacturing sites have been recorded, nor have precision instrument, glass container, window glass, private arms and ammunition, textile, leather, plastic, or other specialized products manufacturing sites been recorded. Historic examples of all of these industries are likely to exist in Colorado. Whether they have survived with integrity sufficient to warrant significance as subjects for archaeological investigation is not known.

## **Interrelatedness of Theme with Other Topics or Themes**

Productive industries are interrelated with the themes of commerce, community planning and development, engineering, ethnic heritage, and transportation. All of the industries were involved in the trading of goods, services, and commodities, which defines commerce. Commerce encompasses the acquisition of raw materials from which products were made to marketing finished goods. The steel and iron industry relied upon a workforce of skilled labor that, at times, necessitated the companies to engage in community planning and development. Development of the city of Pueblo was intimately tied to the Colorado Fuel & Iron Company, which was heavily involved in providing company housing and laying out worker's neighborhoods in close proximity to its steel and iron plants. Similar community development and planning took place in Marble, where company housing was constructed for the large labor force employed by the Colorado-Yule Marble Company. Innovative engineering played a large role in the success of many businesses. The Hendrie & Bolthoff Manufacturing and Supply Company of Denver designed mining machinery with specific applications to particular mining situations, making them the premier supplier of mining equipment in Colorado. The Colorado Fuel & Iron Company installed state-of-the-art equipment in their plants and updated their equipment to remain competitive. Colorado-Yule Marble also continually upgraded its equipment so that the company could compete for large national building projects. Ethnic heritage is intimately linked to industrial development in Colorado. Using the examples of the Colorado Fuel & Iron Company and the Colorado-Yule Marble Company again, both hired large numbers of immigrant laborers for both skilled and unskilled positions. Colorado-Yule Marble relied heavily on Italian workers and the Colorado Fuel & Iron Company probably had the most ethnically diverse workforce of any company in Colorado. The expansion of Colorado railroads demonstrates how transportation infrastructure can influence the growth of export-based industries. New and established industries benefited from railroad access, new towns sprang up along railroad lines, and existing towns with railroad connections greatly expanded.

## **Evaluations of Significance**

### **RELATIONSHIP TO THE NATIONAL REGISTER OF HISTORIC PLACES CRITERIA**

Productive industries sites are most likely to be considered National Register-eligible under Criteria A or C, though Criterion D will be applicable in some instances. Under Criterion A, they will be found to be significant properties because they are representative of the development of the varied manufacturing industry in Colorado. Currently, most sites under the theme have been recorded during built-environment surveys in urban areas with a focus on values other than archaeology. Complexes that do not retain standing architectural elements may be investigated through archaeology (Criterion D) to determine the function of site

components that make the structure and layout of the complexes clear, while also ascertaining the time period and level of technology in use. Archaeology can also provide important information from associated worker households.

### **Areas of Significance**

The principal area of significance for productive industry sites is industry. Other areas of significance that may come into consideration might include commerce, community planning and development, engineering, ethnic heritage, and transportation. Specifically, archaeological investigations of manufacturing sites have potential to recover technical details of particular operations, contribute to an understanding of the early industrial workplace, explain commonalities and differences of workers from residential locales, explore ethnicity in worker households, examine the evolution of the industrial work process, and identify or interpret the level of technology in use.

### **Periods of Significance**

Periods of significance will vary somewhat from industry to industry, but some general trends can be anticipated. Incipient industries will be evident prior to the advent of the railroad in Colorado, generally dating prior to the 1880s, but persisting in isolated areas until the automobile was commonplace in the 1920s. Railroad transportation transformed productive industries in Colorado. Raw materials could be easily obtained, and finished goods could be shipped out. With transportation issues resolved, financing with outside capital investment enabled businesses to grow and serve both local and outside markets. Industrialization took place mainly in large urban areas, but the key was good railroad connections. The decline of mining in the 1920s reduced the number of small manufacturing businesses in the mountains of Colorado that served mining or mining communities. The decline was compounded by the Depression of the 1930s, which reduced the number of manufacturing businesses throughout the state. Following World War II, manufacturing increased with good transportation connections still being the key to business location and size. Railroads continued to be important to industrial growth, but as good road and highway infrastructures were developed through the 1950s and 1960s, businesses were able to flourish in new places and were not restricted to established commercial districts of large cities. Many businesses established new manufacturing locations along interstate highways, and their exodus was mirrored in the decay of former commercial centers now bypassed by the interstates. In recent years, many manufacturers in and around larger cities have developed into very large and diversified businesses with consolidated operations. In addition, large national or multinational companies have become established. At the same time, smaller towns and cities have been able to entice smaller manufacturing concerns, usually by focusing on fewer restrictions to manufacturing activities and appealing to quality of life issues for employees.

### **Integrity**

Although considerable variety is characteristic of productive industry sites, one common element is a focus on site layout and structure, so integrity will commonly be based on the presence or absence of interpretable features within a complex. An archaeological investigation of a manufacturing site requires a comprehensive site map documenting variations in topography, extant architecture, remnants of buildings, and machinery footings visible on the surface. It also involves examination of ancillary features, such as transportation, power, and water systems that connect the key industrial elements. In most situations, industrial equipment will have been removed from a facility. In such instances, archaeological integrity will focus upon the sufficiency of the remains to be interpretable. As with other industrial properties, archaeological investigations will likely focus on important technological data not available from historical sources. Archaeological integrity of productive industry sites requires integrity of location, design, materials, and association. Such things as setting, workmanship, and feeling are of little consequence for the archaeological materials of a site to contribute important information.

## **Research Needs**

### **QUALITY OF RECOVERED ARCHAEOLOGICAL DATA RELEVANT TO THE THEME IN COLORADO**

No archaeological investigations have been conducted at productive industry sites in Colorado.

### **POTENTIAL FOR GOOD QUALITY ARCHAEOLOGICAL DATA TO EXIST FOR THE THEME AT SITES IN COLORADO**

With the large number and variety of manufacturing sites expected to be present throughout the state, it is expected that excellent archaeological data are likely to exist statewide for temporal, technological, and comparative studies. Most investigations of manufacturing sites have been building surveys, requiring only a visual record of exteriors, with only minimum information gathered to identify manufacturing focus and approximate date. Beyond basic architectural descriptions, full and detailed descriptions, drawings, and photographs of features and machinery are lacking.

Like other industrial sites, early or small-scale manufacturing sites, especially those that served local demand, are more likely to contain archaeological data of importance than larger, more fully developed, and persistent sites. This is because of the higher likelihood that they contain more concise data sets (i.e., data from restricted time periods and attributable to specific activities). Unfortunately, these are also the types of sites that are most likely to be considered insignificant by researchers without an archaeological perspective. As a group, small, short-term, or remote manufacturers had a strong impact on emerging communities and can provide excellent insight into the industries with which they are associated. Small-scale, short-term, remote, and activity-specific sites are ideal candidates for research because they can provide moment-in-time data suitable for comparative purposes and because they often contain technological data that have not been obscured or replaced by subsequent upgrading or other uses at more comprehensively utilized sites. Data from such sites can be expected to address issues relating to adoption of technological innovations and changing workplace conditions, particularly in terms of laborers being replaced by machines. At later, larger industrial facilities, archaeology will probably have less of an investigative role to play because as productive industries became more highly capitalized, the equipment and processes became more standardized, and plants became increasingly mechanized for higher output. As mechanization increased, the human element decreased, making more recent industrial sites less productive for archaeological inquiry. In such instances, much of the work expected to be undertaken will be along the lines of industrial archaeology, where the physical evidence is coupled with technological and social context. In many cases, archaeological investigations will be keyed to particular aspects of a process or toward identifying layouts and specific types of equipment in use.

In some instances, communities and households associated with a productive industry can be a very fruitful avenue of study through archaeology. In rural settings, individual or small groups of households may exist in association with a manufacturing facility where socioeconomic, ethnic, and other pertinent data relating to the associated industry may be sought. At more fully developed industrial sites, groups of households or entire neighborhoods in cities or towns may be associated with a commercial enterprise. Such communities exist in association with the Colorado Fuel & Iron Company in Pueblo and at the Colorado-Yule Marble Mill in Marble. Like mining and other industries, a wide variety of household types can be expected to be associated with productive industries, including boardinghouses, individual families of all socioeconomic ranks and ethnic backgrounds, single laborers, groups of laborers, and management-level employees. At any particular time or place, these household divisions can be compared and contrasted within or between groups to flesh out interpretations of everyday life important to our understanding in the present day. Like the work done at Ludlow, which centers on oppressed coal miners, research can focus on reactions of everyday people to political or workplace oppression. It can also examine racial prejudice and retention of ethnic or religious identity that is different from the overlying dominant culture. In other parts of the country, households for which a common employment focus exists, such as textile workers, form an important class of sites for study. For such an approach to be possible, an archaeological perspective needs to be taken for sites

occupied by workers. That perspective means that standard historical and architectural approaches to evaluating residential properties need to be more encompassing and include an evaluation of what might lie below the ground in both rural and urban settings where industrial workers resided. Social, economic, and ethnic data, recoverable through archaeological inquiry, also need to be considered. Household-level archaeological research can be very precise, making data very amenable to intrahousehold and intracommunity comparisons. This precision is possible because archaeological deposits can often be attributed to specific occupants, whose histories can be ascertained through research of land ownership and other historic documents. Important topics of study include socioeconomic status, race and ethnicity, health and diet, habits and vice, household composition, recreational pursuits, education, compatibility with the dominant culture, participation in national markets, and self-sufficiency.

#### **KNOWN OR POTENTIAL SITES WITHIN THE THEME IN COLORADO THAT SHOULD BE SOUGHT, REEXAMINED, OR REEVALUATED**

Few sites associated with productive industries have been recorded with a historical archaeological perspective. Because archaeological values have not been considered with most recordings and because archaeological deposits of importance to our understanding of manufacturing are expected to be encountered infrequently, it is currently not possible to ascertain which sites will be productive for archaeological research. Residential communities associated with industries can be expected to be particularly important subjects for future archaeological studies. Worker housing associated with the Colorado Fuel & Iron Company in Pueblo, at the Colorado-Yule Marble Company in Marble, and Manchester, the company town (now part of Denver) for the Overland Cotton Mill Company, would be very important in this regard. It is possible that other, similar communities exist elsewhere in the state.



## **CHAPTER 8. LINEAR RESOURCES**

**Carl Späth**

### **INTRODUCTION**

This chapter addresses extensive linear features such as trails, roads, railroads, canals, pipelines, and utility lines. These linear features are pathways or conduits on the landscape along which people, resources, goods, or services moved from one location to another. These features connect cultural sites, such as industrial complexes, farms, ranches, and communities, to one another, to resources, and to more distant industries, communities, and to world markets. Many of these kinds of linear features may also be part of the infrastructure within sites, but this chapter addresses extensive linear resources, not site infrastructure. This chapter also does not address improved recreational pathways that may be referred to as trails. Major classes of linear features will be discussed separately. Water pipelines will be included with canals as water transport features, and energy-related oil and gas pipelines will be discussed briefly in their own section.

Linear features have often been overlooked or avoided. Linear features range from faint traces that are difficult to discern to ubiquitous minor roads that seem to be integral parts of the modern landscape. Segments of linear networks, particularly when viewed apart from their cultural setting, can seem empty and enigmatic. When viewed in terms of area history and historic site locations, a clearer picture emerges. With background research completed before fieldwork, more of these features can be seen in terms of their historic setting.

Principal linear features that can form large and complex networks of circulation are trails, roads, railroads, canals, pipelines and utility lines. The networks may extend for a few miles or for many hundreds of miles. These resources may be eligible for listing on the National Register under any of the National Register Criteria for evaluation. Many are eligible under Criterion A because they are associated with particular historic events or because they represent or are associated with broad patterns of events that made an important contribution to local, state, or national history. These patterns may include routes of emigration into Colorado, important routes within Colorado that contributed to the growth of industries and communities, water transport systems that enabled agrarian expansion, industrial development, or community development, railroads that enabled the growth of agriculture, mining, and industry, or pipeline systems that delivered oil and gas reserves to world markets. Some are eligible under Criterion B because they are associated with the important contributions of individuals of transcendent importance in history. Some linear networks, or elements of those networks, are eligible under Criterion C because they are examples of innovations in design, engineering, or construction. And many are eligible under Criterion D because they may yield information important in history. Archaeological information that is important in history is not restricted to artifacts and objects, but can include the relationships among sites and resources and the patterning of cultural features and adaptations.

The introduction to this volume discusses the importance of cultural systems and cultural landscapes in historical archaeology. This theme recurs to varying extents in each of the other chapters. Just as with the archaeology of other historical features, structures, and sites, the archaeology of linear features must employ a perspective of a cultural analysis of cultural networks, systems, and landscapes. This chapter discusses a perspective on looking for and visualizing linear features. Linear segments cannot be viewed as isolated

structures or objects any more than a segment of wire can be evaluated without reference to the circuit of which it forms a part. A linear feature is an element of a local network that forms integral connections within world systems. The information and meaning in a linear segment is embodied in how it represents cultural modification of the landscape and in its role and function as a connecting element in cultural systems. Some of this information will be reflected in the physical attributes and level of cultural investment in the linear features.

Most cultural resource projects and investigations, whether defined by a historic theme, geographic area, a community, a legal land unit, or a proposed undertaking, deal with arbitrary portions of linear systems. In most cases these are portions of extensive structures. Some have lost or never had essential attributes that could be considered structural. To the extent feasible, it is important to establish a perspective on what portion of the larger linear system is present in the project area because the linear features must be described and evaluated as parts of the larger network.

A linear feature can be described in terms of its location, setting, design, materials, and workmanship, but its most important aspects will be its association with related features, with its important historic themes, and with its periods of significance. The linear segment achieves its historical identity through its association with the cultural systems of which it is a part. A critical step in preparing for fieldwork is gathering information on the linear networks that were or may have been present in the project area, what functions they performed, and how they may appear now. That basic information provides essential perspectives on how to look for linear features and how to record the features when they are found. Features that appear the same may have much different cultural meanings. For example an abandoned private ranch road may now appear very similar to a former express stagecoach road that once connected important economic centers. Nevertheless, their identity will affect their interpretation and the interpretation of associated sites and features.

The attributes of linear features reflect the characteristics and needs of the people, resources, goods, or services that moved along them, as well as the technologies that were available during their development and use. Extensive linear features and linear networks that connect sites, districts, and resources should generally be recorded as structures. It is important to recognize and describe how these linear structures connect other structures and sites. Linear features also exist as infrastructure or constituent features within sites and site districts. These features should be recorded as site features or treated as infrastructure elements of districts and not evaluated as discrete sites.

These levels or perspectives are not exclusive categories, and many linear networks may appropriately be considered at both levels or may grade from landscape networks to local infrastructure. For example, roads that are major transportation features that connect communities, industries, and resources grade into streets that are the infrastructure of the communities, and other local roads and driveways that are features of sites within the communities. Similarly, railroads branch into spurs, sidings, and rail yards that are features or infrastructure of associated sites or districts.

When segments of linear features are encountered in the field, it may not be evident how extensive the larger resource may be or what other sites or features may be associated with that larger resource. It is important to review basic historical records before a survey to identify linear features that may be present in the project area and to identify the specific historic contexts that are appropriate for those features. It is equally important after identifying segments of extensive linear features in the field to confirm their identity and association and to evaluate them in terms of the appropriate eligibility criteria and periods of significance. Segments of linear resources should never be evaluated as single or isolated structures or sites. Linear features that are local infrastructure or elements of sites should be treated as parts of those sites.

Linear features should be viewed as essential connecting elements of networks or systems within cultural landscapes. This is not to suggest that the linear networks themselves are landscapes or should be treated as landscapes. An important aspect of archaeology is the analysis of cultural systems in time, essentially the cultural geography of the past. It involves the documentation and analysis of the pieces (the

sites, structures, objects, artifacts, and trace remains) that contribute to the larger picture. Linear features are key elements of the cultural pattern that enable the circulation of communication, resources, goods, or people among locations or levels within the system. A cultural landscape is "a geographic area (including both cultural and natural resources and the wildlife or domestic animals therein) associated with a historic event, activity, or person or exhibiting other cultural or aesthetic values" (Birnbaum and Peters 1996:4). The National Park Service (NPS) has been encouraging the cultural landscape perspective for over 20 years. More recently, this perspective has become increasingly important in preservation, anthropology, and historical archaeology.

In the cultural landscape approach, linear features are viewed either at the local infrastructure level or at the larger landscape level. They are described as circulation networks within the landscape or as archaeological traces of circulation systems. It is essential to describe the principal forms of transportation or conveyance and the circulation routes that facilitate movement within the landscape and connect the landscape with the larger region. Each circulation route, including paths, roads, canals, highways, and railroads should be described by name, type, and location, and classified in terms of its role in the landscape (McClelland et al. 1999). Under the NPS guidelines for evaluating rural historic landscapes, evidence of human activities in a landscape is examined through 11 landscape characteristics: land uses and activities; patterns of spatial organization; response to the natural environment; cultural traditions; circulation networks; boundary demarcations; vegetation related to land use; buildings, structures, and objects; clusters; archaeological sites; and small-scale elements (McClelland et al. 1999:4-5). Linear features can be parts of industrial and community systems or rural historic landscapes. Types of rural historic landscapes that have linear features as key elements include industrial systems, transportation systems, migration trails, and water management systems. The archaeological patterning of linear features can be used to address research questions concerning land uses and activities, patterns of spatial organization, response to the natural environment, circulation networks, and cultural clustering. Landscape archaeology may involve the examination of characteristics or features such as walls, road remnants, trail ruts, foundations and refuse sites, and may draw information from observable patterns of erosion and vegetation. Archaeology deals with both patterns visible on the land and information that can be recovered from subsurface remains.

As noted above, historical linear resources may be historically important under any of the National Register Criteria (36 CFR 60.4). However, a complete linear resource network is more likely to yield important information than will its individual elements. Archaeological information that is important in history is not restricted to artifacts, objects, and features, but includes the patterning of cultural features and adaptations on the landscape. By virtue of its role in connecting other cultural resources, the patterning of a linear resource is a significant element of the larger cultural landscape. On the other hand, individual elements or small segments of a linear network, if not viewed in the context of their associations, may appear to lack historical importance or information potential.

Linear features directly or indirectly connect ethnic groups or communities. If a linear feature is still functional or tangibly present, it may reveal cultural identity or traditional practices of these ethnic groups or communities. If a linear resource is a discrete and tangible feature with traditional and ongoing importance, and if it is associated with traditional histories or beliefs or with events important to cultural identity, it may be considered a traditional cultural property (Todd McMahon, personal communication June 2004). If that is the case, the current character and perception of the resource and the historic character of the resource may both be important to its significance.

As discussed in the introduction, historical archaeology is more than a tool to verify documented history. Historical archaeology may be concerned with whether a trail existed before an improved highway was built through a location, the ethnic or social makeup of the work crews, the technologies used for construction, where supplies and materials were obtained, or other aspects of the linear resource that may not be documented at all or may be misrepresented in historical documents. Historical archaeology, by working with both history and archaeology, may be able to enhance our knowledge of how a linear corridor affected settlement patterns and contributed to the growth of some communities and decline of others. Historical documents may tell us only major features, industries, or communities along a linear resource. Historical

archaeology can fill in connections to other sites or other routes that were important in local or state history. In general, more recent linear features will have more historical documentation available. Nevertheless, there may still be cases in which important associated features are not identified or explained. The investigator should be alert for situations in which potentially important information may be present in even seemingly well-known features.

This chapter will not provide a detailed history of specific linear resources or provide lists of artifacts that are diagnostic time markers. This chapter will discuss general histories of classes of historical linear resources commonly encountered in the field, note some of the watershed events or innovations that were associated with major changes, and present a broad historical perspective on these resource types. This historical perspective will be used as a point of reference to discuss approaches to observation, documentation, and evaluation of linear resources. Extensive linear resources must be evaluated within a historic context or historical perspective, that is, as part of a larger cultural landscape, before their potential historical archaeological contributions can be assessed. This approach is presented as only one approach to linear resources and is not intended to substitute for the specific historic contexts appropriate for each resource.

Linear resources have been unevenly documented and evaluation has been inconsistent, partially because many of them are extensive. Each investigator who is responsible for identifying or evaluating historical resources must seek out the specific historic context and periods of significance of linear resources that might reasonably be anticipated or that are encountered in a project area. It is important to remember that cultural features are parts of larger patterns and systems, and that their importance to history may be embodied in their function in the pattern, rather than in descriptive attributes, artifacts, or quantifiable data that they may yield. The field archaeologist has a responsibility to document broad patterns of the cultural landscape as well as artifacts, features, and sites. This context should be compared to Horn (2004b), where a context is developed for recording and evaluating historic linear resources in Salt Lake County, Utah. The latter context deals with a smaller area and a more fully developed historic background than the present document.

Sebastian, discussing the evaluation of interstate highway systems, states: "Even as historic sites, linear resources are problematic. But as archaeological landscapes they are largely connecting threads dotted with occasional baubles" (2003:17). This statement expresses a key problem in dealing with small segments of historical linear resources. More often than not, the key historical information is in the baubles or the relationships among baubles and not in the connecting threads; that is, the importance of linear resources is often in the resources that they connect and how they are connected, rather than in the quantifiable attributes of the features themselves. In addition, linear features are dynamic features, "and in order for them to continue to perform the function they were designed for long enough to become historic, they have to have been maintained and upgraded" (Sebastian 2003:15). Virtually all historic structures are maintained and upgraded to some extent, but it is a particularly constant process for most linear resources. The contribution of a small segment of a linear network to the historical significance of the whole system cannot be addressed without an understanding of the historic context of the entire resource.

To assess the linear resources that have been documented in the state, the OAHHP site database was queried with about 50 keywords to identify linear resources. Key words were chosen to identify the majority of recorded sites within each of the themes in this chapter. It was expected that resources that are relevant to this discussion would be missed and that many resources contained in the query results would be inappropriate. A basic criterion in processing the query results was that the linear resources would be linear sites or would be segments of linear resources that represented networks of travel, transport, or communication among other resources. Linear features within sites, such as ore car tracks within mines, community streets, drainage tunnels, or local ditches, were not considered.

The initial query returned 4,834 sites. However, 586 of these were sites or site complexes that contained features identified by these keywords. In most cases the features elicited by these keywords were either discrete linear features within the sites that could not be associated with a larger circulation system or

were not linear features at all. The most common site types in this group were mining complexes that included tunnels or rural agrarian sites that contained small road segments or ditches. The keyword *tunnel* was used to capture features of roads, railroads and water conveyance structures. The query also returned several ranger stations because of the keyword *station*. Station was used as a keyword to capture sites along linear resources such as stage stations, swing stations, way stations, railroad stations, and gas stations. All of these sites were removed from the sample, leaving a total of 4,248 linear resource segments.

Without correcting for multiple segments of the same resource, there were 232 trails, 897 roads, 1,354 railroad resources, 1,714 water conveyance features, and 51 utility lines. It was not surprising that canals, ditches, flumes, and railroads were the most numerous linear resources recorded. Within each of these themes, sites were categorized as linear features; artifacts and features associated with linear features; objects (e.g., markers, vehicles, rolling stock) associated with linear features or buildings and structures associated with linear features. Structures integral to the linear feature, such as culverts, bridges, and tunnels, were grouped with the linear resources. Townsites, sidings, support facilities, or industrial complexes that did not identify specific structures or buildings or that consisted of debris and foundations were classified as artifacts and features. In several cases, the decision whether to group a site as artifacts and features associated with a linear resource or as a linear resource with associated artifacts and features was based on the site name or the order of keywords in the original use field. Meaningful groupings of sites are complicated by incomplete descriptions and inconsistent terminology.

## TRAILS

Trails are expedient or minimally maintained routes between locations or resources. Trails may include footpaths, horse trails, pack trails, wagon trails, or livestock trails. Trails are defined by origins and destinations and may not be discrete or maintained routes. The actual trail followed may vary from one occasion to another, although natural constraints may limit the potential range of variation of some segments. Trails may converge at destinations, supply points, and key resources or may radiate from settlements to local resource areas. Settlements may develop to serve travelers at natural points of convergence, such as springs or river crossings. If a trail is used heavily or for a long period, or if a certain segment is more heavily used because it is shorter or easier, it may be marked by more visible or more enduring evidence. A trail segment that is chronically plagued by unfavorable conditions may also develop persistent traces, even though it may not be a preferred or more heavily traveled route. Some trails or segments of trails were important enough that they were improved and became roads, and only traces of their former appearance are left. For example, some early trappers' trails and emigrant trails later became the routes of wagon roads or paved highways. Some trails, such as pack trails or hiking trails, continue to be used to this day.

### Description of Theme

Trails were paths between locations. The term *trail* is sometimes also used to refer to recreational paths that may not have a connecting or transportation function. Some of these are improved and maintained. Recreational trails will not be discussed in this chapter. Historic transportation trails may have served simply as paths of travel, or they may have served as routes to transport resources or finished goods. The contribution of these trails to history was the connection of locations and the movement of people, resources, finished goods, or services. Trails were situated on the landscape in relation to the locations that they connected and in relation to constraining natural features such as topography, river crossings, and water sources. The paths between locations, nodes, or waypoints varied in response to natural conditions or at the whim of the traveler. The mode of travel (e.g., foot, horse, or wagon) could also affect the feasible options for a trail. For example, some traditional trails that had served well for small groups on foot or on horseback were impassable with a loaded wagon.

When looking for evidence of trails it is important to remember that trails may not have been discrete fixed lines but were often zones or broad corridors. If a historic trail is known to have passed through an area,

it is important to look for patterns in the terrain and vegetation that may have been left by that trail. The lines labeled as trails on topographic maps or compiled historic maps may be extrapolations from intermittent segments of well-preserved ruts, a route chosen from several variants by the mapmaker as central or more direct, or averaged routes inferred from landmarks and named points in available firsthand descriptions. Even the trails on primary sources, such as period maps or General Land Office (GLO) plats, are likely to be averages of corridors or more heavily traveled variants. This does not mean that trails should be recorded as vague zones, but that researchers should be observant and prepared to encounter variants of the principal or better known path. The more traffic that there was on a trail, the more likely it was that segments would become deeply rutted or that resources along the trail would be exhausted. Patterns of Native American trails were also changing in the early to middle contact periods in response to new markets for resources, changes in group size and structure, needs and limitations of horses, and regional demography. Initially, travelers might seek alternative routes, but eventually sections of a trail would need to be improved and supplies would need to be brought to the trail. Some of the named early trails into or through Colorado were the South Platte Trail, the Cherokee or Arkansas River Trail, the Mountain Branch of the Santa Fe Trail, the Republican River Trail, the Smoky Hill Trail, and the Spanish Trail. The Mountain Branch of the Santa Fe Trail has been identified as part of a National Historic Trail. Many early explorers followed sections of aboriginal and trappers' trails. Portions of some of these exploratory routes became important trails, and others were rejected by the explorers themselves or over time as too difficult or not passing through preferred areas. Trails on the eastern plains, entirely or in long segments, followed watercourses, both because the watercourses were sources of water and other resources and because watercourses generally follow relatively gentle terrain. In contrast, in much of western Colorado, watercourses are often deeply entrenched or hazardous, and trails may follow ridgelines or other continuous, or at least undissected, topographic features.

General information about historic trails can be found in local and regional histories, and these sources will often provide leads to firsthand accounts by travelers or settlers. The approximate locations of trails are often depicted on GLO plats and other historic survey maps. The purpose of GLO maps, as opposed to topographic maps, was to delineate public land in the Public Land Survey System (the familiar Township-Range-Section grid), not to produce an accurate map of the terrain. GLO plats were the framework for homesteading and other private claims on public land and became the basis for cadastral (tax) survey plats. GLO maps depict landmarks, drainages, major topographic features, and cultural features, such as buildings roads and trails, as reference points in relationship to the marked section corners. In general, these features were sketched in by the surveyor and were not measured in with transit and chain. The closer that the features were to a surveyor's monuments or other measured points, the more likely it is that they are reasonably accurately depicted. It is useful to consult the surveyor's notes and to compare natural features on the plats to equivalent topographic maps. Locations of key segments of many historic trails have also been compiled on maps of historic routes such as USGS regional maps (Scott 1975, 1976, 1986, 1989; G. R. Scott 1994; Scott 1995, 1999, 2001, 2004a; Scott and Shwayder 1993) or emigrant trail maps.

Traditional Native American trails had connected resource areas and seasonally favored settlement locations. As Euroamericans began to move into the region, they established their own new point locations, such as trading forts and settlements. This contrasted to pre-contact subsistence- and resource-focused movement of nomadic groups and was reflected in selective use of existing trails and identification of new trails. Some of the Euroamerican point locations may have been favored stopping points or drainage crossings along established aboriginal trails, but others were new, specific destinations that funneled the trails. Euroamericans also had a perspective that was dominated by long-distance connection of market centers, in addition to local or regional movement among sites and resources. Trails were viewed in the larger context of trapping, trading, exploration, prospecting, and reaching lands farther west. Local trails were also perceived as elements of paths between principal destinations rather than a network among local resources and places in a dynamic pattern of mobility. Consequently, in adopting an existing network of aboriginal trails, the emphasis was on the paths between fixed points and on the trails that were best for long-distance travel and suitable for wagons. These trail variants were the ones that were most often put on maps, neglecting many other branches and variants.

Trails are essentially transient and dynamic. They are fixed to the landscape by waypoints such as geographic landmarks, passes, river crossings, springs, and way stations. The paths between waypoints could vary with the traveler (including their knowledge of the route), conditions at the time of travel, the mode of travel, and the types of cargo or baggage. Trails often braided between nodes, diverging from a common path in response to previous ruts, mud, dust, rocks, availability of forage or water, confusion, misinformation, or other conditions influencing day-to-day decisions. In contrast to the Hollywood image, wagon trains generally traveled several abreast or staggered to avoid the dust and ruts of the other wagons and livestock. Established emigrant and merchant trails such as the Old Cherokee Trail, the Santa Fe Trail, the Spanish Trail, the Ute Trail, the South Platte Trail, the Smoky Hill Trail, and the Republican River Trail were associated with an accumulated body of shared knowledge. Segments of trails that were used extensively, for a long time, or by military or heavily laden wagons may be readily visible as linear features. Unless many objects were lost or abandoned along the trail, the historical artifacts that the trail is likely to yield may be sparse or localized in favored campsites and other associated sites. Consequently, the most pervasive archaeological information contained in these linear resources is their pattern of connections among other cultural resources. Field documentation should be focused on recognizable, if sometimes elusive, segments of named trails between known sites or natural features. Approximations of these routes can be found on GLO plat maps, exploration and government survey maps, compilations of historic maps, such as those produced by the USGS, and in some regional histories. Identification of these scars is also greatly aided by reference to aerial photographs during survey.

Cattle trails and other stock trails are similar to emigrant and merchant trails in that they are expedient paths between points located in response to terrain and available water. Typically, the largest of these trails were followed by cattle drives from the Central or Southern Plains to stockyards along railroads or major market points to the north. The end-points of cattle drives shifted as mining towns grew and withered, as new railroads were built, and as state governments imposed or modified quarantines on southern cattle. The routes of stock trails also had to shift as lands were settled and fenced. Even the more famous named trails, such as the Dawson and Goodnight trails, shifted from season to season. Some market centers, such as Abilene, Kansas, were developed specifically to attract the cattle drives and to circumvent restrictions imposed in response to "Texas fever." In contrast to the general pattern, these market centers remained fixed end-points for many years.

The heyday of the western cattle drives was from 1866 to 1890. In the 1880s quarantines and fencing made cattle drives more difficult and less profitable. Fortunately for ranchers, the 1880s were a prolific period of railroad construction. Increasing numbers of railroads were built close to ranch lands, and the need for long cattle drives was reduced. Among the better-known cattle trails of eastern Colorado were the several variants of the Goodnight-Loving trails and the Dawson Trail. These trails led from the Texas panhandle through New Mexico to Pueblo and Denver or to the railroad at Cheyenne. A later cattle trail known variously as the Ogallala Trail, the Texas Trail, or the National Cattle Trail, ran from Texas through the Oklahoma panhandle and the eastern edge of Colorado to Ogallala, Nebraska, and later, on through northeast Wyoming to Montana. Like the Pony Express, these cattle trails have a symbolic importance to the popularized image of the American West, but they left little in the way of identifiable traces and no unique or distinctive artifacts. Many segments of cattle drives are poorly documented, and if undisturbed segments were encountered, they might be physically indistinguishable from bison migration routes or clusters of more recent cattle paths. Until the advent of refrigerated rail cars, cattle were shipped live to stockyards and slaughterhouses near major markets. The most identifiable historic sites or features that can be associated with the western cattle drives are the stockyards at trail's end. These stockyards are features that should be documented as components of communities or as sites associated with railroads.

Perhaps more important to the history of Colorado were many smaller stock trails in western Colorado, such as the trails from ranches in Middle Park and Routt County to the railroad at Wolcott along the Eagle River or the trails from the Grand Mesa to the railroad at DeBeque along the Colorado River. Cattle drives produced a swath of braided paths and are most readily visible where natural features funneled the large herds into narrow paths or across incised drainages. Cattle drives, like wagon trains, also resulted in

devegetation and erosion in many areas. Some portions of stock trails, such as the Pine-Piedra Stock Trail in San Juan County, were defined corridors through public land.

## **Archaeological Manifestations**

For trails, the notion of a discrete path between fixed points is generally misleading or inappropriate. Instead, there would have been a broad corridor or swath of trails between prime settlement locations and resource or use areas. In a few locations, availability of a critical resource, such as water, or topographic or other constraints would have funneled these trails into a narrow area.

Sites that may yield significant archaeological remains or may have important traditional associations can occur along trails. Generally recognized significant sites along historic trails include geographic landmarks (used for navigation or commonly noted in accounts); passes; water crossings; favored or well-described campsites; graves; trail junctions; established supply points, way stations, or small communities; and other structures or physical improvements associated with the trail. Ruts, swales, and other linear features associated with a particular trail may contribute little more through archaeology than to confirm historic accounts by their location and by the scattered presence of artifacts or associated features that confirm their periods of use. More information is likely to be present at campsites, supply points, way stations, and water crossings. These locations may contain remains of goods and supplies, or lost or abandoned artifacts that can yield information on the types of goods and materials needed or transported, the period of use, and, in some cases, the geographic origin of the goods or passengers. Emigrant trails often passed through trading forts or military forts such as Bent's Fort, Fort Union, or Fort Laramie. The trading forts had been established as points of exchange in the market system but also adopted the role of supply points for the emigrant and merchant wagons.

Travel alters the land along the route of travel. The extent, degree, and permanence of this alteration depend on the mode of travel and interactions with the land. A single person walking through tall grass or across loose sand may leave a trail that will disappear within hours or days. In contrast, large numbers of heavily laden wagons crossing damp clay soils will compact the sediments into ruts and swales, alter local drainage, and crush and redistribute vegetation. An infrequently traveled footpath will be transient and elusive. It may be possible to retrace portions of the trail from written descriptions left by travelers, or from objects or markings left along the way. Retracing a footpath may be interesting, and finding landmarks noted in descriptions may be exciting, but if the trail is not visible as a linear feature, the linear resource itself is not likely to yield meaningful information. In contrast, a wagon trail will have left permanent, but not necessarily easily seen, alterations in surface sediments, local drainage, and vegetation. If it is known that a major named trail once crossed a project area, the field investigator needs to look for linear anomalies in topography or linear patterns in vegetation and to always keep in mind that a trail that was traveled more than once was probably not a discrete line like a modern paved highway. If no identifiable traces of a trail are evident along a defined or projected corridor, there may be no trail segment to document. However, if the trail in question is a widely recognized trail of some importance that is depicted on maps of the area, it may be wise to enlist the assistance of a trails expert before dismissing the segment as completely lacking historic integrity.

Trails as a resource consist of a pattern of source locations at settlements or resource areas, and destinations at industrial sites or settlements. The pathways between these points will be oriented to available water and stopover locations at intervals roughly equivalent to the distance a person could walk in a day. Before the development of maintained roads, laden wagons or pack trains did not travel faster than a person could walk. Depending on terrain and other factors, the distance that could be traveled in a day might vary from a few miles to as much as 12 or 15 miles. If possible, wagons also stopped midday to allow the animals to forage and rest and to change teams. Unlike stagecoaches that had fresh teams waiting at relay stations, emigrant and merchant wagons had to travel with several teams of animals. Unless confined by terrain, wagons did not travel in single file but traveled from several to a dozen or more abreast, each flanked by extra livestock and by people on foot.



A historic cattle trail might appear as concentrations of overgrown cow paths, areas of collapsed banks along drainages, or wide swaths of contrasting vegetation, punctuated by stock camps. Smaller twentieth-century stock camps are familiar to archaeologists as historical debris scatters that may include cans, broken bottles, crockery, and, less often, wagon parts and tack. Typically, these are small scatters dominated by food cans, milk cans, and tobacco tins. Stock camps along stock driveways may be much larger than typical stock camps and may contain large cans and other materials reflecting food preparation for a larger group. The larger cans at these larger stock camps may include large lard cans or baking powder cans that would not be found at a typical stock camp. The chuck wagon (allegedly developed by Charles Goodnight) is associated with the popular image of the western stock drive, and to the extent that this stereotype is true, a mix of solder-seam cans and metal utensils may characterize such early stock camps.

In the initial assessment of the database results the keywords *trail* and *road* were taken to mean unimproved and improved, especially when little detail was available for a site. All of the resources discussed in this section contained the word *trail* in one or more of the fields: site name, type of site, features, historic type, or original use. Typically, when both *trail* and *road* were used for the same resource, it was a trail that was later improved or upgraded to a road. On the other hand, there are also several sites that are now foot trails but may have historically been stagecoach or freight wagon roads. If there is a clear reference to extensive improvements, such as grades, retaining walls, culverts, or bridges, the site is discussed as a road.

The database query yielded 232 trail segments, or resources associated with trails. Only seven of these trail segments are individually recorded segments of trails recorded in the same county under the same site number, that is, discrete segments given point numbers. However, there are also eight trails in Boulder County that are recorded under the same site number but have eight different names. Based on the trail names, these are recreational paths that are parts of a larger recreational system. Some of these trails are named for Native American or early historic trails. Many of the trails listed are segments of emigrant trails, merchant trails, stock trails, or “Indian” (Native American) trails that have been recorded in several counties or under several site numbers. Four site numbers are assigned to stone trail markers, and 16 site numbers are assigned to prehistoric or historic sites associated with trails.

Key words associated with trail sites indicate that the majority can be classified as Native American trails, explorers' trails, emigrant or merchant trails, livestock trails, or recreational trails. A small number are identified as logging or mining trails. Ninety-eight (42 percent) of the site entries for trails are identified only as historic trail with no additional information.

There are eight trail segments identified under separate site numbers as Native American trails. Two explorers' trails, the Escalante-Dominguez and the Whitman, Pattie, and Gunnison trails, are each identified in two counties. In the cases of both of the explorers' trails, the parties largely followed existing trails, and their accounts of the general route have become associated with the trails. It is likely that the locations of the Native American trails and the explorers' trails were approximated from historic accounts, and that physical evidence of these trails was not verified in the field. Portions of the Whitman, Pattie, and Gunnison trail followed the Northern Branch of the Spanish Trail, and it is misleading to have their names applied to it (Jonathon Horn, personal communication 2004).

Thirty-eight trail segments are identified as segments or variants of emigrant or merchant trails. These include the Santa Fe Trail (including the Granada, Penrose, Vogel Canyon, and Aubrey variants), three branches of the Smoky Hill Trail, the Trappers Trail, the Cherokee Trail, the Platte River Trail, the Overland Trail, the Butterfield Trail, the Taos Trail, and the Spanish Trail. The identification of the “Butterfield Trail” is problematic. Butterfield is not associated with any trails. He is most strongly associated with express stage lines. In eastern Colorado the Butterfield Overland Express followed improved toll roads and stage roads. The term *trail* may be misapplied. The identification of these trails generally depends on historic maps and accounts. There are additional trails that have local or less well-known trail names or are identified with keywords such as wagon ruts, overland travel, or homesteading, suggesting a presumed association with emigrants or traders. Many of the latter trails may have little or no supporting information to verify that they

are historic trails. If these trails can be relocated based on available information, they should be more completely documented and researched.

Thirty-three trails or trail segments are identified as cattle trails or stock driveways. These include early, named cattle trails such as the Goodnight-Loving Trail, the National Cattle Trail, and the Texas-Montana Cattle Trail, as well as later stock driveways such as the Pine-Piedra Stock Trail, the Fireline Driveway, and the Elkhorn Stock Driveway. The early Texas cattle trails suffer from documentation issues similar to the early explorers' trails, complicated by the fact that they followed slightly different routes each time they were used. The approximate routes of these trails have been mapped from inconsistent and incomplete descriptions with little or no field verification. Slightly more information is available for portions of the National Cattle Trail during the periods of quarantine for Texas fever, at the time stock growers were lobbying in Washington, D.C., for a nationally recognized cattle trail corridor. Later stock driveways, particularly designated segments across public land, are more clearly defined.

Another group of trails is recreational trails. These are identified in the database under name, site type, or original use as pack trails, footpath, recreational trails, nature trails, or scenic trails. Many may follow portions of older trails and may include segments of improved grades from stagecoach roads, freight wagon roads, or railroads. The identification of these trails as recreational trails suggests that they have remained in use or that they have been developed recently, often within the period of park or forest management.

Archaeologists in Colorado have not always systematically looked for or identified trails unless they were well known historic trails depicted on historic maps, such as the Santa Fe Trail. Some surveys have missed visible segments of historic trails even when they were aware they should be looking for them. Trails are easily obscured by erosion and changes in vegetation patterns, or by more recent game paths, cattle paths, pack trails, or roads. The Ute Trail across the Flat Tops in Eagle, Garfield, and Rio Blanco counties was partially depicted on historic maps, and portions are described in historic accounts, but the Ute Trail project also endeavored to document portions of the traditional trail that were not historically documented (McKibbin et al. 1994). The Ute Trail project also used oral traditions of the Ute tribes and long-time residents of the area.

## **Site Significance**

Although the historical importance of major trails has been recognized, and trail systems have been evaluated as significant and eligible for the National Register, individual trail segments have typically been evaluated as nonsignificant or nonsupporting. Exceptions to this generality include well-preserved segments of major trails, especially segments near historic landmarks or important sites. A trail segment as a structural feature is potentially important to the larger trail system if a more or less continuous portion is recognizable as a trail and its setting conveys the feeling of its period of significance. The National Park Service, in its Santa Fe National Historic Trail Comprehensive Management and Use Plan (National Park Service 1990:16), suggests that for a segment qualify as a high potential route segment in that system, it should have a high degree of integrity and well-defined ruts that extend for at least 0.5 miles. Major historic trails are often evaluated as eligible for the National Register of Historic Places under Criterion A, for their association with broad patterns of events significant in our history. Some portions of trails, or specific locations along a trail may have additional significance under Criterion A for their association with specific events important in history. Associated sites and features along a trail may also have the potential to yield information important in history and therefore be eligible under Criterion D. It is unlikely that a trail as a resource will be eligible under Criterion B, for its association with the important contributions of someone of transcendent importance in history, or under Criterion C for their structural or artistic attributes. Carefully review the National Register Bulletins on the application of the Criteria for Evaluation, particularly Bulletins 15 and 36 (National Park Service 1991a, 1993).

Before a trail segment can be evaluated for its eligibility as a segment of an eligible trail system, its integrity must be assessed in terms of the period of significance and eligibility criteria of the larger resource.

The segment cannot be evaluated without identifying the periods of significance that it may represent. The importance of each aspect of integrity depends on the nature of the trail as an entire system, and, under Criterion A, the nature of the events or patterns of events that the trail represents. In most cases the most important aspects of integrity for a trail segment are its setting, feeling, and association. The following considerations apply to the aspects of integrity of a segment of a historic trail.

**LOCATION.** A trail is a scar on the landscape. It cannot be moved. If a trail segment can be seen and identified and can be verified as having been part of a historic trail, it has integrity of location.

**DESIGN.** Trails were not systematically designed structures or features. Localized improvements along a trail might have design attributes or the route can be thought of as a "design" to connect locations. In general, there is not a combination of elements that create form, plan, space, structure, or style for a trail, and consideration of integrity of design is of minor importance to linear trail segments.

**SETTING.** Setting is the physical environment of a historic property that conveys the essential character of the period of significance. If a branch or portion of a trail was an important route across open prairie, then integrity of setting entails the extent to which the viewshed of that trail is open land lacking built environments. The presence of native prairie would be beneficial but not essential. Setting is generally an important aspect of integrity for historic trails.

**MATERIALS.** Integrity of materials entails the continued presence of physical elements that were combined or deposited at a particular time and in a particular pattern or configuration to form the resource or feature. If a trail segment is physically recognizable, understanding that the density of materials may never have been great and that surface artifacts and traces may have deteriorated or been removed, it is likely that the trail retains an appreciable integrity of materials that may represent its period of significance. This aspect needs to be taken into consideration under Criterion A but may be less important than setting and feeling. If a trail segment may be important under Criterion D, this aspect may be much more important.

**WORKMANSHIP.** Integrity of workmanship entails physical evidence of the crafts or technology of a culture or people during the period of significance of the resource. Because linear features of trails are not planned or built features, workmanship is generally not an important aspect of the integrity of the trail.

**FEELING.** Feeling entails a resource's ability to express or convey the esthetic or historic sense of a particular period. In the case of trails, feeling is an important aspect of integrity that is tied closely to setting.

**ASSOCIATION.** Integrity of association involves the strength of the link between the resource and an important event or pattern of events. For a trail segment it is the confidence with which the use of the segment can be linked with both the larger trail system of which it is a part and the essential period or periods of significance. A segment can also have an association with other sites or features representing those events and periods of significance.

Individual trails or segments of larger trail systems may be significant for the role they played in the history of an area. The eligibility of these trails is therefore tied to specific events important in history or to patterns of events important in history. It is unlikely that segments of trails will be significant for structural or artistic attributes (Criterion C) or for their potential to yield information (in the form of artifacts and cultural features) important in history (Criterion D). However, the physical trail itself, and its pattern on the landscape can yield important information. Much of the information potential of trails is in their associations, that is, in the pattern of sites and resources that they connect. They may have served as paths of commerce, or communication, or may have been the path followed by an individual or group to reach the location of an important historical event. Trails associated with a single, ephemeral event are much less likely to retain important archaeological objects or features. If a trail was associated with a sustained pattern of activities or events, it is more likely to retain archaeological objects or features associated with that pattern. A network of trails that is part of a cultural landscape interconnects a complex of sites that has the potential to yield information on patterns of adaptation and interaction. The pattern of trails connecting sites and more diffuse

resource areas is itself archaeological information. Trails are infrequently recorded as sites in Colorado. When they are, they need to be evaluated in terms of their associations and interconnections and not as isolated features or sites. Trails are best evaluated as elements of larger cultural networks.

## **Research Issues**

Trails that existed long enough to be remembered as historic trails, but not long enough to become roads or other improved transportation corridors, are likely to be elusive. There may be enough historical information to identify major nodes along the trail and the general path of certain branches of the trail. In many cases historical accounts provide us with names and approximate locations of some major stops along a trail, general direction of travel, and major landmarks, but little information on the routes of travel between these reference points. Other accounts may provide day-to-day descriptions of the land crossed for certain segments. Historical maps may show one or a few principal branches of the trail. However, these discrete lines on maps may tempt field investigators to overlook important variants of trails that are not shown on the maps. Historical archaeology can contribute by locating and documenting the physical traces of these trails and seeking associated artifacts and features that will confirm the periods of use and, perhaps, provide some information about the travelers or goods that moved along these trails.

Any areas of ruts and swales that can be securely associated with a named trail should be documented, mapped, and photographed. Within the constraints of the project, documentation should include the extent (width and length) of the trail traces, depth of ruts or swales, extent of erosion or infilling, vegetation contrasts between the trail and adjacent terrain, and observations on any potential for additional archaeological information that cannot be investigated at the time of documentation. Recording should include any physically associated artifacts, artifact scatters, or features. At a minimum, GLO plats and historic trail maps should be reviewed to attempt to identify one or more known trails that may have followed the approximate path of the linear features. It is better if this basic background work has been done before the fieldwork. If a historic match to the location of a trail segment is found, it should not necessarily be assumed that this historic identity is the source of the visible physical evidence or that this was the only historic trail that followed the general route. Historic maps were often representational and may have depicted only the major route of a trail and its general location. In terms of our current perception of mapping, a trail depicted on a historic map may seem to be some distance away or follow a different path than its physical remains. This variance does not mean that the map is wrong or that the researcher has not found the same trail. In addition, the trail segment may have been part of several different trails over its use life, concurrently or sequentially. The physical traces that are currently visible may also have been produced or enhanced by a later undocumented use of the route.

Ideally, documentation of a trail segment should identify as many episodes of use of that route as feasible within the constraints of the project. In addition, there is a need to identify elements of the trail, associated sites, or associated natural features that can be correlated with one or more of those specific episodes of use. Cultivation, settlement, mining, or later roads may obliterate segments of trails. Nonetheless, small traces or segments that verify the route of the earlier trail may help us to interpret its pattern and function. Small segments, less than one-half mile in extent, should be plotted on project maps and described in reports. If it can be reasonably demonstrated that these small remnants were once continuous with a larger trail system, that fact should be discussed in the survey report, whether or not these segments can support the significance of the larger resource.

General research issues that trail segments, in conjunction with associated sites and resources, may be able to address include

- The role of transportation in the growth and development of associated sites and nearby settlement.
- The degree of connection and integration of local or regional settlement and economy with the national and world systems.

More specific questions of ethnicity of groups using the trail, types of traffic using the trail, changes in traffic or operations over time, and the sources of goods and materials moving along the trail need to be addressed with data from sites along the trail that contain greater quantities of artifacts and a greater diversity of features.

## **ROADS**

Roads are routes that were important to regular travel or to the movement of resources, goods, or services. Because there was a positive value placed on the rapid and reliable movement of people, resources, or goods, there was a willingness to contribute labor or financial support to improving the route. Some roads, rather than making improvements to an existing route, were built along a new route in response to a perceived need. For example, people might have built straighter roads for stagecoaches with large teams or wider roads so that faster traffic could pass slow-moving freight. Roads range from toll roads and locally improved segments of roads for freight wagons, to maintained roads for stagecoaches and military wagons, to early automobile roads, and finally to road systems built or maintained by local, state, or federal agencies. Federal involvement in major highways was stimulated by public pressure for better roads, by the needs of the emerging trucking industry, and by a perceived need for rapid mobilization of troops and military supplies.

### **Description of Theme**

In the early 1850s, after the California Gold Rush increased westward travel, the military began to improve portions of roads to supply and support their forts, and speculators began to improve segments of the emigrant and traders trails for express mail and passenger service. The earliest formally improved road into Colorado, and the first federal highway project in Colorado, was the improvement of a military road from Fort Riley to Bent's Fort in 1855. Both forts were in Kansas Territory at that time. With the onset of the Colorado Gold Rush in 1859, principal branches of trails in Colorado were improved for stage lines, and minor stage stations, or swing stations, were established every 10 to 20 miles along these routes. Several stagecoach and express freight lines were promptly established. These included the Leavenworth and Pikes Peak Express; the Central Overland, California, and Pikes Peak Express; M. Cottrill and Company; and the Kansas City Gold Hunter's Express. With the settlement of the Colorado region and the establishment of towns, informal travel over traditional trails continued, but regular stagecoach lines and freight routes became increasingly important. Settlers also began to fence portions of their land constraining the routes that could be used. In the more mountainous areas, improved and maintained freight roads and stage roads were extremely important, and toll roads were an important strategy for financing those improvements.

As fixed or more regular routes between locations were established, segments or whole routes had to be improved. Initially, this might include clearing and smoothing areas, laying timbers on sections of road prone to rutting, leveling or draining sections of roads, and building bridges at water crossings. There were no uniform standards and no formal mechanism for improving or maintaining roads. A given road might be quite variable from one segment to another. Merchants, industries, and other interested groups would form coalitions and associations to improve the roads themselves or to encourage stage or freight lines to improve the roads. Where more major or extensive work was required, funds might be raised or an agreement developed for a toll road.

Toll roads were an extremely important arrangement in mountain areas, where improvement and maintenance of roads often required more capital and labor than was available to local communities, or emerging mines. Economic incentives such as discovery of a profitable mining resource might also attract major outside investors. Remote mining towns, particularly in the mountainous southwestern part of the state, were often accessible only on foot or horseback, and goods and mining equipment had to be brought in by jack train. It was essential for these camps that heavy equipment and large quantities of supplies be brought in and that large quantities of ore be carried out. Even to make access by wagon feasible required massive investment of engineering and labor. The toll road system allowed the investor to charge a toll on the

completed road to recover his investment and, hopefully, realize a profit. Otto Mears was extremely important in southwestern Colorado for heading companies that built toll roads to connect mining districts and smelters before the railroads had reached that region. When the state became involved in building and maintaining a road system in Colorado, it also used the toll road system as a way to encourage private industry to build and maintain roads.

Through the mid- to late nineteenth century, most road improvements were accomplished by hand labor and the use of horse-drawn wagons to move materials. Typically, materials were obtained or moved locally. Sometimes in sandy, unstable, or frequently waterlogged settings, logs, planks, or gravel fill were brought in from greater distances. Generally, if local materials were suitable, other materials were not sought. The steam-powered rock crusher had been developed in the 1850s, but the equipment was cumbersome and expensive, and as late as the early 1900s, rocks and gravel were used as they were found or broken with hand tools. Distinctive fill brought in from distant sources and uniformly crushed and sorted aggregate indicates that investment capital was available and that the qualities of the material were considered important. Uniform paving was also not characteristic of early community or privately maintained roads. Fairly simple technologies of log surfaces (corduroy), oiled or asphalt-sealed gravel, and concrete were available in the mid-1800s but were only used for problem sections. The preferred approach was to bypass problem sections. Beginning in about 1910, as government-sponsored roads grew in importance, Portland cement and asphalt were used for surfacing continuous segments of roads.

In the 1890s and early 1900s several types of horse-drawn earthmoving equipment were developed, including the Fresno scraper. The Fresno scraper had been developed to cut ditches and canals at a uniform grade but was quickly adopted for road building as well. This shift in technology was manifested in a drag-and-drop pattern in the direction of construction. To do this, materials from cuts were dragged along to fill low areas, rather than being shoveled locally or moved in wagon loads. This pattern carried over into the development of steam- and diesel-powered equipment. Other innovations in powered drills, blasting powder, dynamite, and powered shovels, many of which were developed or improved for mining and railroad construction, were also adopted for road construction.

Although roads became fixed paths, an element of the earlier customs of trails remained. Wagons could no longer go where they pleased to avoid rutted sections of road because much of the land was fenced or occupied. But many roads maintained two routes, a high road for wet and inclement conditions, and a low, often shorter road, for drier conditions. These routes, still considered to be the same road, could be several miles apart in some locations, depending on terrain.

In the mid-1800s, wagons and horses were the principal forms of transportation. In more rugged areas, donkeys and mules were also important for moving goods and equipment. Local histories of remote communities or mining camps will often refer to jack trains, that is, groups of jackasses (donkeys) used to carry goods and equipment on steep and winding trails. Just as steam-powered locomotives were evolving for the railroads, steam trucks were also marketed for transportation. But these early trucks were heavy and crude and could not manage the mud and potholes of outlying roads. Many early trucks also pulled full trailers, much like wagons, which were difficult to maneuver. Steam and gasoline trucks competed against wagons only for city deliveries and hauling. Ironically, in retrospect, one of the major perceived advantages of gasoline trucks for in-town delivery and hauling was that they did not contribute to the pollution problem of horses.

The automobile was developed in the mid-1880s, but the early horseless carriages, which were as likely to be steam or electric as gasoline-powered, were more of a rich man's novelty than a serious form of transportation. Another invention of the 1890s, the bicycle, was initially a strong contributing factor to a popular movement for publicly maintained good roads. Two interrelated changes were the introduction of Henry Ford's Model T in 1908 and the accelerating development of assembly line production. These changes made the automobile affordable to a broader public. By 1908 trucks were also becoming fairly common wherever streets and roads were passable. The State of Colorado promptly recognized the importance of maintained roads for automobiles and trucks. The Colorado Highway Commission was established in 1909,

and in 1913 Colorado began licensing automobiles. The following year the state established a state tax levy for highway construction, and in 1919 a gasoline tax was added. The Federal Public Road Act of 1916 initiated regular federal involvement in highway construction and maintenance. By 1920 the semi-trailer and tractor truck were gaining in popularity and importance. Also in the 1920s, motor coaches, or buses, took over the role of stagecoaches. By the early 1930s the diesel tractor and systematic state and federal involvement in highway maintenance made the truck a serious contender in long distance freight traffic. The diesel tractor and semitrailer gained a competitive advantage over the railroad for smaller freight loads. The emerging truck and semitrailer was a major improvement over the freight wagon for small- to moderate-sized loads, and was much more flexible as a form of transport than railroads. Improved vehicle roads could be built at a lower cost to more destinations than the railroads, and trucks had the potential to deliver to individual consumers, rather than depots and stations. The federally maintained or assisted highways provided shorter and faster routes to many more destinations than the railroads. The major advantage maintained by the railroads was in moving heavy, bulk freight such as coal, metal ores, and steel.

## **Archaeological Manifestations**

Roads differ from trails in the delineation of fixed routes and in systematic investment in improvement and maintenance. Recreational trails and bike paths, often referred to as trails, are also fixed and maintained routes, but they do not connect sites, communities, and resources. Improvements might include bridges, tunnels, cuts into hillsides, retaining walls, drainage features, raised beds, surfacing materials, or regular smoothing. Roads are both structural and archaeological features, although they may yield relatively few of the objects and artifacts that many associate with archaeology. Roads are important for connecting sites and resources and providing a path for the exchange of information, people, raw materials, goods, and services. The road itself consists of a prepared grade and a bed of surfacing material (graded dirt, gravel, wood, concrete, or asphalt). At any given point the grade may be scratch grade, cut, cut-and-fill, raised, or crowned and ditched. The choice of techniques will depend on the terrain and other conditions. Segments of the road will be improved or designed to maintain a uniform bed width to accommodate the perceived traffic needs. Traffic needs include the size of vehicles (typical or maximum length and width), vehicle limitations in terms of grades and curves, typical traffic volume, direction of flow (one-way or two-way), typical speed, and relative speed (need for passing lanes). Designs of intersections or junctions will also reflect the types of vehicles and relative speed. Roadbed widths will change in response to grade, changes in traffic load, and the engineering and maintenance challenges of the setting. Features directly associated with roads include control features, such as gates, toll stations, and traffic signals; loading facilities, stations, and depots; maintenance yards and facilities; support facilities, such as service stations, diners, and lodging; and drainage and separation structures such as tunnels, bridges, trestles, and culverts.

How a road was improved and maintained reflected the needs and limitations of the vehicles and their cargos and the cost of available technologies. It might also reflect the viability of the community or private company that maintained it. The road was important, but investors and private developers would build for short-term viability, particularly during initial construction. Early stagecoach roads emphasized relative speed and regularity of movement for mail, passengers, and express shipments. By the standards of the time the coaches themselves were fast and were considered comparatively comfortable. Early freight roads, often toll roads, focused on the unimpeded movement of heavily laden wagons. Freighters often complained loudly to toll road operators and politicians about high tolls or poorly maintained roads. Both coaches and freight wagons had difficulty negotiating abrupt turns and also had difficulty backing. Wagon roads in rugged mountains followed gentle terrain as much as possible and negotiated steep slopes by long diagonal grades across the slope. Expensive tunnels and cuts through bedrock were avoided. A common approach on rocky slopes was to cut a shelf into the rock, and use the rubble from the cut for fill and dry-laid retaining walls to extend the shelf. Switchbacks and S-curves emerged as an approach when smaller automobiles and trucks that could negotiate these turns became more common. Gas stations and motels gradually replaced stage stations, way stations, and mile houses. The filling stations of the early 1900s consisted of tanks or barrels brought by wagons and placed on platforms to be dispensed by gravity. Archaeologically, these gas platforms

may not be readily distinguishable from loading platforms. Continental Oil Company introduced its first service stations to Colorado in 1915 (Scamehorn 2002:62).

As automobiles and trucks became more common and more important, roads were modified or developed for their particular needs and limitations. Many early automobile roads in the mountains, particularly scenic roads oriented to tourism, took advantage of abandoned railroad grades. Early automobiles and trucks did not have the power and gearing to climb many of the long steady grades of earlier wagon roads, but they were more maneuverable. Many new vehicle roads in mountainous terrain were more winding than wagon roads and might include switchbacks to climb steep slopes. Two-lane or larger roads also developed on which traffic could travel both directions at the same time, and automobiles sharing the road with trucks could pass the slower trucks.

Roads are fixed and maintained routes ranging from single lane, scratch-grade roads to multilane paved highways. By the distinctions used in this chapter, an unimproved two-track is a trail rather than a road. However, the term is often used for unmaintained trails that follow previously improved roads. ACRE (2002) discusses resources and approaches for researching Colorado roads. Fraser (2000), in his multiple property listing for highway bridges, also presents useful context information about Colorado roads. These include early Colorado road maps. For wagon roads and stage roads, GLO plat maps and compiled historic trails maps should be consulted in the same way that they would be for trails. Before researchers begin fieldwork, they should review map sources to establish whether historic roads passed through the project area and whether portions may still be in use and maintained. They should focus attention on major named roads and smaller roads that established historically important connections. There is probably little that can be gained from detailed mapping and historic research on an unnamed wagon road on a GLO map or a minor road that connects larger roads but does not connect to a community or resource area. However, a named cutoff that established a quicker or more reliable route between existing roads or segments may have historic importance and may also exhibit engineering innovations. The likely nature of historical roads in a project area should be established prior to fieldwork, and if minor roads are encountered, they should be briefly acknowledged and described in the report for the benefit of subsequent investigators. If a modern, crowned-and-ditched paved road exists in place of a historical wagon road, that road should be described.

The query of the OAHP database yielded 897 road segments or resources associated with roads. The term *road* was taken to mean improved road. However, two-track roads and many of the resources listed simply as “historic roads” might not have literally been improved. Almost all of these resources had one of the following keywords in the site type, historic type, or original use fields: *road*, *highway*, *bridge*, *culvert*, *tunnel*, *stage station*, or *way station*. Three hundred sixteen of the sites were simply listed as “road” or “historic road” and had no more detailed information in the database. Road types included “roadbed,” “road grade,” “unpaved road,” “wagon road,” “freight road,” “stage road,” “corduroy road,” “toll road,” and “logging road.” Where there were ambiguous keywords, such as *bridge*, *culvert*, or *tunnel*, which might pertain to roads, railroads, or canals, a defining term was found in one of the other fields of the record. A small number of sites had “trail” or “two-track road” in the historic type but indicated “road” in the site name or original use. Fifty of the sites in the query results had two or more point-number entries for separate segments of related resources. However, because of inconsistencies in whether a single linear resource or several related linear resources are recorded as one site number or several site numbers, and the fact that the same resource in more than one county will be assigned a separate site number for each county, each of these records will be treated as a separate linear resource.

After generic roads, the most numerous recorded road types are 207 segments that can be grouped as “wagon roads.” These are listed as “wagon roads,” “freight roads,” “stage roads,” and “toll roads.” Other roads listed by function include 52 highways, 15 mine or quarry roads, nine logging roads, and two municipal streets. One hundred fifty-four roads are listed by surface treatment. These are nine two-track roads, 130 unpaved roads, 11 paved roads, and four corduroy roads. These two-tracks are associated with road names suggesting that they follow once-improved, but unmaintained roads.



One hundred sixteen of the road-related resources are drainage and separation structures. These include 84 vehicle bridges, one pedestrian bridge, 19 bridge abutments or pilings, nine tunnels, and three culverts. Sites associated with roads include 17 stage stations or way stations, two townsites or commercial buildings, two gas stations, one tollhouse, one bus depot, and one transportation museum. Two examples of historic road maintenance equipment were also recorded. In comparison to physical resources in Colorado, paved roads and highways are strongly underrepresented as recorded sites. This underrepresentation is partially due to the fact that active paved roads and highways are often excluded from survey areas, and when they do occur within survey areas, they tend to be viewed as contemporary features without considering that they may also be historic.

## Site Significance

Like trails, roads are most likely to be eligible for the National Register under Criterion A as routes of travel or commerce for their contribution to specific events or patterns of events important in history. Impediments to travel that were minimized by improvements included steep or uneven terrain, water crossings, impassible vegetation, rutting, and dust. Some portions of roads may be eligible under Criterion C for their design or construction, including the innovative use of new techniques or materials. But, unless a road was associated with the application of innovative construction or design principles or with some important political or economic event, its significance is most likely to derive from its role in the cultural landscape and the resources that it connects.

Roads should be evaluated principally as connecting networks or systems and for the role that they played in historic events and the development of resources, industries, and communities. If they have been improved and upgraded over the years but perform the same function in the same historic setting, they should not be too readily dismissed as lacking historic integrity. If they continue to function in the same manner and continue to convey the setting and feeling of their period of historic significance, their current fabric may be a minor consideration. Some roads were important in local history for the development of a mine, industry, or community. Most roads important at a state or national level connected mining districts, industrial centers, and major communities or connected Colorado to national transportation networks. Infrastructure roads within mines, industries, or communities and minor rural connecting roads should be considered features within sites or districts and not recorded as individual sites. Rural farm, ranch, and county roads are elements of rural historic landscapes that should be considered at that level and not as separate and unique sites.

Before a road segment can be evaluated for eligibility as part of a larger historic road system, its integrity must be assessed in terms of the period of significance and eligibility criteria of the larger resource. The segment cannot be evaluated without identifying the periods of significance that it may represent. The importance of each aspect of integrity depends on the nature of the road as an entire corridor or system and, under Criterion A, the nature of the events or patterns of events that the road represents. In most cases the most important aspects of integrity for a road segment will be its setting, feeling, and association. Supernowicz and Petershagen (1993:70), in their historic context for the Highway 50 corridor, suggest that a road segment should generally be 1,000 feet long or more to illustrate the basic linear nature of the road system and distinguish it from other linear features in the area. They acknowledge, however, that this length is only a guide and that some road segments representing the earlier wagon roads that are in distinctive settings, or with distinctive engineering features, may be much shorter and still convey essential aspects of design, setting, and feeling. Some segments of road may also be important for aspects of design or construction under Criterion C. The following considerations apply to the aspects of integrity of a historic road segment.

**LOCATION.** A road is a constructed path. Portions of it might be moved, but origin and destination points remain the same. If a road segment can be seen, identified, and can be verified as having been part of a historic road during that road's period of significance, it has integrity of location. If that segment did not exist during the period of significance of the larger resource, it lacks integrity of location, even though it is now part of the system.

**DESIGN.** Roads are designed features with designed structures. Roads have a combination of elements that create form, plan, space, structure, or style that should be considered in terms of the period of significance of the larger road system. If aspects of design have been changed from the period of significance, it may lack integrity of design. But if the road has been important as a scenic tourism route, and still is, then this function may be a minor aspect of integrity.

**SETTING.** Setting is the physical environment of a historic property that conveys the essential character of the period of significance. If a segment of a road was an important route through rural agrarian areas, then integrity of setting entails the extent to which the road segment still exists in rural agrarian areas with a minimum of suburban or industrial development. The relative importance of setting for a road depends on the eligibility criteria applicable to the larger network and period of significance. This aspect of integrity may be less important for roads than it is for trails.

**MATERIALS.** Integrity of materials entails the continued presence of physical elements that were combined or deposited at a particular time and in a particular pattern or configuration to form the resource or feature. If a road was important under Criterion A as an economic artery that contributed to agrarian, industrial, or community development, the aspect of integrity of materials may be comparatively minor. If the road was important as a publicly funded corduroy road through sandy terrain or for the innovative application of all-weather paving, then integrity of materials may be very important. This aspect of integrity may also be important if a road built for scenic tourism was constructed to blend with the scenic environment.

**WORKMANSHIP.** Integrity of workmanship entails physical evidence of the crafts or technology of a culture or people during the period of significance of the resource. If the road is significant for design or construction, the aspect of integrity of workmanship may be important. If it is important as a transportation artery that contributed to regional growth, integrity of workmanship may be a minor aspect of integrity.

**FEELING.** Feeling entails a resource's ability to express or convey the esthetic or historic sense of a particular period. If the road was important as a freight wagon road during an 1880s mining boom and is now a paved highway lined with commercial establishments, it lacks integrity of feeling. If it was important as a connecting artery and an access for small commercial concerns, it may retain essential integrity of feeling, even though the commercial establishments have changed in character.

**ASSOCIATION.** Integrity of association involves the strength of the link between the resource and an important event or pattern of events. For a road segment it is the confidence with which the use of the segment can be linked with the larger road system of which it is a part and the essential period or periods of significance.

Individual roads or segments of larger road systems may be significant for the role they played in the history of an area or region. The eligibility of these roads may be tied to the contributions of historic persons, such as the toll roads of Otto Mears (Criterion B), specific events important in history, or patterns of events important in history (Criterion A). Specific segments of roads, sometimes extensive, may be significant for structural or artistic attributes (Criterion C) or for their potential to yield information (in the form of artifacts, cultural features, or landscape patterns) important in history (Criterion D). Much of the information potential of roads, like trails, is in their associations and the pattern of sites and resources that they connect. They served as paths of travel, commerce, and communication and may also have served specific industries. However, infrastructure roads within industries or communities or minor connecting roads should be treated as features of those local resources and not as individual sites. Roads need to be evaluated in terms of their associations and interconnections, not as isolated features or sites. Roads are best evaluated as elements of cultural landscapes or as connecting elements in regional or world systems.

## **Research Issues**

Roads are important for the roles they played in local, state, or national history and for the information they may contain on the changes in road-building technologies. Roads need to be considered in

relation to the resources, industries, or communities that they served. There are unnamed roads on GLO maps that appear to have no important destination but, nevertheless, have left identifiable traces. Road traces need not be recorded simply because they are there or because they are in the same location as an unnamed road on a historic map. Road segments that cannot be associated with meaningful sites or significant periods of use are unlikely to yield important information. Other than acknowledging their existence, or perhaps connecting them to a failed farm, little can be done with minor or disassociated linear features of this type. But it cannot be assumed that a road segment is unimportant without looking into its identity and possible associations.

Field crews should be alert for traces of historic roads, particularly in areas where important named roads are known to have existed. Roads can be seen more easily than most trails because they will have cut-and-fill areas, drainage features, retaining walls, and remnants of surfaces that have been graded, compacted, or paved. Contrasting fill or surface material can make them even more readily visible. Many older roads will appear as discontinuous segments partially covered by more recent roads.

Road segments that can be identified as segments of historic roads should be described and photographed. Discrete and distinguishable road segments should be treated as if they were individual structural elements of the road system. The periods of significance and the criteria for evaluation applied to the larger road system need to be identified. Identification should be based on pre-field research, including, but not limited to, correlating the segments with historic roads depicted on GLO plat maps or compiled historic road and trail maps. Background information should include what communities, mines, or industries the road system served and the approximate period of use.

If a road segment is identified as part of a historic road system, documentation should include the width of the roadbed, whether the bed is raised or crowned, the nature of any cuts or fill, any drainage control features such as ditches or berms, and any observable contrast between the roadbed material and surrounding bedrock and sediments. Any associated structural features such as culverts, retaining walls, or bridge abutments and supports should also be described. To the extent possible, information on the dates of construction of these associated structural features should be sought. A well-preserved segment of a historic road that extends continuously for one-half mile or more should be recorded as a segment of the larger road. This discrete segment should be treated as a structural element and evaluated in terms of the areas and periods of significance of the larger road system. Small or discontinuous segments that cannot convey the feeling of a historical road system and do not exhibit any distinctive attributes should also be documented, and any evidence of their likely historical associations should be discussed. Any reduced recording or reporting strategy should be decided in consultation with the lead agency archaeologist. Small, seemingly unimportant pieces may be important elements of larger network patterns.

Engineering features of a road may need to be considered in more detail. Engineered structures, such as bridges or trestles, may be important for their design and construction. The design and method of construction of the road itself may represent a specific period or method of construction or innovations in design and materials. In rare cases, a transportation corridor may retain good examples of a sequence of different construction episodes representing different approaches to design and engineering in the same vicinity. These approaches should be evaluated in terms of how they compare to one another and contribute to the understanding of changes in construction and transportation over time. The integrity of individual segments may not be critical if they retain adequate integrity to yield comparative information.

Important research issues for roads are similar to those for trails. General research issues to which road segments, in conjunction with associated sites and resources, may be able to contribute include

- The role of transportation in the growth and development of associated sites and nearby settlement.
- The degree of connection and integration of local or regional settlement and economy with the national and world systems.
- Changes in the needs and limitations of modes of transportation over time.

Some roads may also be able to contribute to questions of the role of federal involvement in regional development or to issues of changes in technology of road construction and maintenance.

Instructive examples of documentation and assessment of roads and associated resources include research on the Bent Canyon Stage Station by Church and Cowen (2005), discussions of the historic contexts of the DeBeque Cutoff Road and the Hogback Road by Horn (2001c), and documentation of the White River Stage Station in Utah by Pfertsh (2003c). These discussions demonstrate the relationship of the archaeological traces of roads and associated sites to historical documents.

## **RAILROADS**

Railroads are fixed roads of metal rails. A level grade is prepared by following contours as much as feasible, cutting or tunneling through higher ground, and raising the grade on berms or trestles across low areas. A ballast bed of crushed stone, cinder, or slag is laid on the grade to spread the weight of the train, wooden ties are laid on the ballast, and the rails are attached to the wooden ties. These railroads carry and guide locomotives that can pull bulky and heavy loads at comparatively great speeds. Mines, industries, stock growers, farmers, and merchants of the late nineteenth and early twentieth century needed reliable transport of bulk cargoes. Passengers and bulk mail also benefited from the rapid and reliable transport. Railroads required substantial investment, planning, and engineering. Mines, industries, communities, and entire areas of the state grew or withered in response to the success or failure of railroads. The demands for railroads, the availability of new technologies, and the presence of willing investors made the expansion of railroads possible but not without economic risk. Railroads required steady, relatively gentle grades and long gradual curves. Many existing trails and roads in the mountains did not meet the needs of railroads, and new routes needed to be surveyed and built. Steam engines required regular supplies of fuel, water, and sand, and regular maintenance. Railroads are dotted with woodsheds, coal chutes, water tanks, section houses, roundhouses, and other support features and facilities at regular intervals. The mountains were far more demanding on the ingenuity and persistence of investors and builders, and mountain railroads developed somewhat more slowly than the main lines on the eastern plains. Many of the early mountain railroads were narrow gauge, because narrow gauge was more flexible in the rugged terrain, and could be built for a lower initial investment. Many railroads were planned and never completed. Other railroads were completed and failed quickly or after years of success. The railroads that survived typically passed through economic hardships, merged with other railroads, or were absorbed by larger companies.

### **Description of Theme**

Railroads were a pivotal element in the development of the American West and in economic and industrial development in general in the latter half of the nineteenth century. Before the development of a railroad network, the American West was tangibly remote from the eastern United States. In the early 1800s through the heyday of the emigrant trails, overland travel was measured in miles per day, and sometimes in just single digits. Portions of many emigrant accounts describe long days of strenuous and tedious travel only to set up camp within site of the previous day's camp.

Despite resistance, railroads became quite successful in the eastern states in the 1830s and 1840s. Shortly after the first national railroad conference in 1849, several government-financed railroad surveys were dispatched through the West, seeking a feasible route for a railroad to the Pacific coast. The Pacific Railroad Act, authorizing land grants and subsidies for a railroad from Omaha to Sacramento, was authorized by Congress and signed into law by President Lincoln in 1862. However, the Union Pacific (UP) and Central Pacific (CP) did not begin construction until the end of the Civil War. Because of the difficulties of crossing the Rocky Mountains in Colorado, the UP, building the eastern portion of the transcontinental railroad from Omaha, bypassed most of Colorado, building only nine miles of track in Colorado through the small town of Julesburg in 1867 (Fraser and Strand 1997:8). Later that year the railroad reached Cheyenne, Wyoming. Having a railhead as close as Cheyenne provided Colorado with access to eastern markets and made it easier for settlers to reach Colorado. It also brought Texas cattle drives across Colorado. By then Denver was a territorial center that needed a direct railroad connection for continued growth. The new smelter at Black Hawk also needed the bulk transport to markets that a railroad could provide. In addition, the 1867 Treaty of

Medicine Lodge Creek had ceded tribal claims in the region and reduced the threat of Native American depredations on travelers.

Much of the placer mining in eastern Colorado had played out by the late 1860s, but lode mining was growing, and Colorado needed railroads. In 1870, the Kansas Pacific (KP) and Denver Pacific (DP) Railroads both connected Denver north to the UP. Later that year the Denver and Rio Grande Railroad (D&RG) was founded. Railroads were critical to mining districts and industries, and many of the towns and cities in Colorado were founded by railroads or continued to exist because the railroads reached them. Virtually all aspects of the settlement and growth of Colorado were dependent to some extent on the development of railroads. If a town was bypassed by a railroad, the whole town might be moved closer to the railroad. However, the interdependence between mining and railroads was absolute. Mines could not succeed and expand without the railroads, and most of the incentive for mountain railroads to expand into new areas and across difficult barriers came from mining. Some railroads developed for mining were promoted for tourism, and some small specialty lines were developed specifically for tourism. Mines and mining-related industries were also important for railroads on the eastern plains, but agrarian industries played a significant role as well. The Great Western Railway (GW), for example, developed primarily for the sugar beet industry. Smaller, ephemeral railroads developed for the timber industry. Railroads would continue to grow and spread throughout Colorado until just before World War I.

There were many railroad companies in Colorado, some lasting only briefly, some emerging from mergers or buyouts of earlier companies, and many changing names or passing through periods of bankruptcy or receivership. General maps of the establishment of major railroads in Colorado and basic chronologies of many of the companies are presented in a National Register Multiple Properties Documentation Form, *Railroads in Colorado, 1858-1948* (Fraser and Strand 1997). Many individual railroad histories and railroad company archives contain more detailed information on specific railroads and the histories of particular lines or facilities. Many of these railroad histories can be found in the Western History and Genealogy collections of the Denver Public Library, the Colorado Historical Society, or at the research library of the Colorado Railroad Museum. Listing a few examples of useful histories would barely touch the surface of the wealth of information on these railroads. Some of the railroads that played a key role in one or more periods of Colorado history are listed in Table 38 with their dates of founding or completion to a key destination in Colorado.

By 1880 in Colorado, every farming or ranching center, every mine, every smelter, and every supply town wanted a railroad connection. Elsewhere in the nation a standard gauge (distance between rails) of 4 ft. 8.5 in. had been adopted. Government and industry had recognized that it was important to have compatible rolling stock and rails on all major systems. This standard had been designated in the Pacific Railroad Act, and the need was driven home by the logistics of military supply during the Civil War. However, mountain terrain in Colorado was a challenge. Colorado Central Rail Road's answer to reach the Black Hawk smelter in the 1870s had been narrow gauge, a distance of 3 feet between the rails. Palmer's D&RG had also laid narrow gauge tracks from Denver to Colorado Springs in 1871. Narrow gauge tracks were cheaper to build and, with the technology of the times, provided better traction and maneuverability on winding mountain routes. The issue of compatibility was addressed in shared facilities and along some rail lines by installing a third rail, so that the track was both narrow and standard gauge.

Colorado continued to innovate in narrow gauge railroads after they had lost their popularity in the eastern states, and narrow gauge was extremely important in the opening and expansion of mining and ranching districts in western Colorado. Among the engineering marvels of the Colorado mountain railroads were the Georgetown Loop between Georgetown and Silver Plume; the Ophir Loop between Durango and Telluride; the narrow rock ledge of the Durango & Silverton Railroad along the Animas River canyon; the Maroon Creek bridge near Aspen; the Phantom Canyon bridges of the F&CC; the Alpine Tunnel of the DSP&P; the High Line (Boreas Pass) of the DSP&P; the Rock Creek Loop of the Short Line to Cripple Creek (CS&CC); the Busk-Ivanhoe Tunnel of the CM; and the Moffat Tunnel of the D&SL.

**Table 38.** Chronological list of railroads that played a key local or statewide role in Colorado history.

Year	Railroad and Event
1867	Union Pacific Railroad (UP) builds through Julesburg, Colorado Territory, on its way to Cheyenne, Wyoming Territory
1869	Founding of Colorado Central Rail Road (CC)
1870	Denver Pacific Railway and Telegraph (DP) connects Denver to the UP at Cheyenne
1870	Kansas Pacific Railroad (KP) connects Denver to the UP at Kansas City.
1870	Founding of Denver & Boulder Valley Railroad (D&BV)
1870	Founding of Denver & Rio Grande Railway (D&RG)
1871	Founding of Arkansas Valley Railway (AV)
1873	Founding of Denver, South Park & Pacific Railroad (DSP&P), later Denver, Leadville & Gunnison Railway (DL&G)
1875	Founding of Pueblo & Arkansas Valley Railroad (P&AV)
1876	Founding of Missouri Pacific Railway (MP)
1876	Atchison, Topeka & Santa Fe Railroad (AT&SF) reaches Pueblo
1881	Founding of Denver & New Orleans Railroad (D&NO), later Denver, Texas & Gulf Railroad (DT&G)
1882	Burlington and Missouri River Railroad (B&MR), a subsidiary of the Chicago, Burlington and Quincy Railroad (CB&Q) reaches Denver from Nebraska
1883	Founding of Colorado Midland Railway/Railroad (CM)
1888	Founding of Manitou & Pikes Peak Railway (M&PP)
1888	Chicago, Rock Island, & Pacific Railroad (CRI&P) reaches Roswell (Colorado Springs)
1889	Founding of Little Book Cliff Railway
1889	Founding of Rio Grande Southern Railroad (RGS)
1890	Founding of Denver, Lakewood & Golden Railroad
1890	Founding of Union Pacific, Denver & Gulf Railway (UPD&G)
1893	Founding of Florence & Cripple Creek Railroad (F&CC)
1897	Founding of Cripple Creek District Railway/Colorado Springs & Cripple Creek District Railway (CS&CCD) - the Short Line to Cripple Creek
1898	Founding of Colorado & Southern Railway (C&S), a consolidation of DL&G, UPD&G, and several small lines.
1898	Founding of Crystal River Railroad (CR)
1899	Founding of Colorado & Wyoming Railway (C&W)
1901	Founding of Great Western Railway (GW)
1902	Founding of the Denver, Northwestern & Pacific Railway (DNW&P), known as the Moffat Road
1912	DNW&P reorganized as the Denver & Salt Lake Railroad (D&SL)

In the early 1900s, although many small railroads were doing well, the dominant railroads in Colorado controlling the vast majority of the trackage were the UP, the D&RG, and the C&S (Fraser and Strand 1997:60). Like this handful of railroads that dominated Colorado, a handful of persistent and powerful men appeared over and over again as owners, partners, or leaders in these major railroads and many of the smaller railroads. Among the most influential were William Palmer, Jay Gould, his son George Gould, David Moffat, Otto Mears, John Evans, and John Osgood.

An important development in parts of Colorado from the 1890s to the 1920s was the expansion of municipal and interurban rail lines. The initial focus of most of these lines was passenger traffic, in contrast to major railroads that had focused on freight with a mix of mail and passengers. Some of the interurban lines also began to carry freight in the 1920s when the demands for passenger service diminished. Many of the interurban lines used electricity rather than steam-powered locomotives. The first electric interurban lines were in Cripple Creek, Denver and surrounding communities, Trinidad, and Grand Junction. The Denver Tramway Company (DTC) operated one of the more extensive systems by 1914, with more than 250 miles of track. Other electric interurban lines included the Denver and Intermountain (D&IM) between Denver and Golden, the Denver and Northwestern (D&NW), which also operated to Golden, the Denver and Interurban (D&I) from Denver to Boulder, the Colorado Springs and Interurban (CS&I) in Colorado Springs, the Colorado Springs and Cripple Creek District Railroad (CS&CCD), the Trinidad Electric Railroad, and the Grand Junction and Grand River Valley Railroad. Some of these lines had begun in the 1880s as horse-drawn trams, and most of them continued operating into the 1940s or 1950s but were eventually displaced by

automobiles and buses. Historic municipal rail lines and tramlines should be recorded as urban infrastructure features. Interurban lines connecting communities are historically parts of these larger municipal systems but should be recorded as discrete historic sites that played an important role in regional history. Other features associated with these systems will include trolley barns, powerhouses, switchyards, and maintenance facilities. Interurban rail lines connected towns, and traces of them can still be found in the intervening areas. Vehicle roads have covered others.

## **Archaeological Manifestations**

It is tempting to look at a fully modernized railroad with its raised engineered grade, thick, uniform ballast, uniform manufactured ties, machine-set continuous rails, prefabricated steel and concrete bridges, and diesel locomotives, and then to think that the railroad lacks historical integrity and that it has no potential to yield information important in history. In some cases that assumption may be incorrect. Unless the significance of the railroad in history is embodied in specific aspects of its design, materials, and workmanship, or the railroad was only important in a particular historic period, then the upgrading and maintenance that are essential aspects of a functioning railroad may actually contribute to its historical integrity because it continues to operate as a system as it was originally designed. The existing railroad may still be associated with historical work camps, abandoned depots or maintenance areas, footings or foundations of support facilities (e.g., coaling stations, water tanks, sanding towers, or handcar sheds), or other archaeological deposits associated with the history of the railroad. Archaeological work can document the physical remains of the past. These physical remains may confirm objects, materials, features, structures, and buildings that are documented in historical records, may enhance historical descriptions and illustrations, or may contradict historical accounts. Railroads are among the most profusely documented historical features in Colorado, but that documentation is not exhaustive, and the focus of the documentation may be different than our historic interest. A large part of the documentation focuses on rolling stock, railroad stations, and large facilities like roundhouses.

In their multiple property form for Colorado railroads, Fraser and Strand (1997) provide a good description of the features associated with railroads and basic criteria for evaluation. Additional consideration should be given to possible archaeological significance if the railroad was important in the development of the area or region and documentation of its appearance or operation is poor or incomplete. The major elements of railroads are

- tracks and roadbed;
- right-of-way structures;
- loading facilities;
- depots, stations, and terminals;
- housing and maintenance structures, including section houses, engine houses, machine shops, power houses, car sheds, woodsheds, coaling stations, water stations, sand houses, and shops;
- and drainage and separation structures, including culverts, bridges, trestles, and tunnels.

Railroad types include

- main or trunk lines that carry principal rail traffic between major terminals;
- shorter branch lines that branch off the main lines to stations or terminals;
- cutoffs that follow a shorter route between portions of lines;
- bypasses that parallel other lines and are generally used for slower freight;
- spurs that branch off to industries or depots;
- sidings that serve facilities and rejoin the line at another point;
- and sidetracks or passing tracks.

Documented railroad resources in the OAHIP site database included 1,354 grade segments, structures, or associated resources. A higher proportion of buildings or support facilities were listed for railroads than for trails and roads, perhaps because many railroad buildings and support facilities can be unambiguously

associated with the railroad. These buildings and support facilities included 121 depots, stations, or terminals; 18 section houses; 22 support facilities; and two trolley or tram power plants.

Approximately half of the railroad resources (686) were listed simply as railroad, railroad bed, railroad grade, or railroad spur. This seems reasonable because railroad grades and trackage are the most extensive manifestations of the railroads in the state. It seems somewhat strange that only one trolley or interurban line was identified in the database. Trolley lines and interurban lines were important and extensive features of community development in Colorado. This lack of mention may be a product of the fact that most cultural surveys are not in urban areas and because most trolley and interurban lines are buried under paved streets.

Drainage and separation structures included 246 bridges, 3 bridge abutments or pilings, 16 trestles, 11 tunnels, and 81 culverts. There were also six railroad crossings listed. It is assumed that these were road crossings at grade rather than separation structures. Tunnels that were listed as features in mining complexes were not included in these tallies.

There were 105 railroad sidings listed in the database. Many of the records for sidings listed associated loading or storage structures, and it is assumed that the remaining sidings were associated with similar structures or with maintenance and support facilities. However, some of the features recorded as sidings may have been sidetracks or passing tracks to allow trains traveling in the opposite directions to pass one another. Sidetracks would not generally have associated structures or features.

Many railroad properties have been listed on the state or national registers. The Directory of Railroad Properties in the Colorado State Register of Historic Properties (Office of Archaeology and Historic Preservation 2003) includes 102 properties. Most of the listed railroad properties are depots, stations, or terminals (37) and locomotives or rolling stock (46). Eighteen of the properties are tracks, grades, bridges, trestles, or right-of-way structures. One railroad property on the State Register, by virtue of its being on the National Register, is Comanche Crossing, the historic location where a silver spike was driven in 1870 marking the completion of the first coast-to-coast rail connection. The golden spike driven the previous year in Utah marked the completion of the first Pacific railroad. The other rail connection joined the Missouri River to the Sacramento River not the Atlantic coast to the Pacific coast.

Railroad segments and associated resources should be evaluated in terms of the historic periods of significance of the larger railroad system and in terms of the technologies that were available during those historic periods of use. Initial lines between locations were often lightly laid with minimal grading and minimal ballast or no ballast at all. If these lines were successful, they were upgraded as soon as they became economically viable. The first railroads in Colorado used iron rails, hand-hacked ties, and hand-forged tie plates and spikes. The first tracks used the topography as much as possible and minimized grading, cutting, or filling. Quickly constructed timber bridges, trestles, and fill were used to maintain grade through low areas. Many of these grades were bypassed or replaced within the first season of use. The small, wood-burning American-standard locomotives that could be used on these grades needed frequent replenishment of fuel and water. Woodsheds, water tanks, and sanding towers needed to be placed at short intervals, perhaps as close as every 8 or 10 miles but often less.

As locomotives were converted to use coke and coal, intervals between stops were extended and coking and coaling stations replaced woodsheds. The smoke smudge of early locomotives was overlain by coal cinders. These traces can be found on the walls and roofs of tunnels, on the faces of rock cuts, and on protected areas of undisturbed ground alongside railroad grades

For cost and expediency, early bridges and trestles were timber structures. As trees became scarce, revenues increased, and new technologies became available or affordable, the timber structures were replaced by steel bridges and trestles, stone embankments and abutments, and extensive cut-and-fill grades. In the 1880s heavier steel rails replaced iron rails. Standardized tie-plates and manufactured spikes soon followed. Concrete had been used as an element of footings and abutments, but later reinforced concrete and



prefabricated concrete spans became major structural elements of separation and support structures. As grades were improved for longer, heavier, and faster locomotives, engineered beds and standardized ballast were used. Uniformly crushed granite or volcanic rock was brought in, sometimes from great distances. Railroads that served smelters or foundries also used slag for ballast.

## Site Significance

A portion of a railroad system must be evaluated in terms of the historic significance of the entire railroad. Before the portion can be evaluated, it is necessary to find out what areas of significance, periods of significance, and applicable National Register Criteria have already been identified for the entire line or system. In stating a case for significance, the evaluator should discuss how the observed segment relates to the larger resource, and, if the larger resource is considered eligible, what aspects of integrity would need to be met for the observed segment to support the eligibility of the system. If the historic significance of a railroad line is based on its role as a transportation corridor in local or regional development (Criterion A) and the periods of significance are relatively continuous or extend to recent history, the physical condition of the railroad line may be much less important than it would be for a railroad important for innovations in engineering. The integrity of setting and association may be more important than the integrity of materials and workmanship. The transportation network begun by a particular railroad may also have become important for another form of transportation, such as trucks. What began as a railroad may have become a paved highway that functions as a key transportation corridor in local or regional development. The physical condition of the segment is more important if the railroad line is important for some aspect of its design or construction (Criterion C) or if it had a discrete period of significance under Criterion A.

Maintained standard gauge grades associated with historically important railroads tend to be seen as nonsupporting to the eligibility of the historic railroad because maintenance and upgrading involves replacement and alteration of material or design. These changes may affect the condition and integrity of the resource in terms of its archaeological potential to yield information important in history but only if historical design and material are destroyed (they may be bypassed or covered). It may also affect the ability of a railroad segment to convey its historic feeling if it is associated with a specific period of significance. However, maintenance and operation consistent with the historic function of the resource is not necessarily an adverse impact to the integrity or significance of the property in terms of its historic association (Criterion A or B).

Archaeological information can be found in the design and organization of the railroad itself, in the patterns of the railroad through time, in changes in rail beds corresponding to changes in construction technology or types of locomotives, in changes in the sites connected by the railroad, and in changes in the type and amount of ballast on the bed. Archaeological information is also present in the artifacts, objects, features, and sites that can be found along the railroad. Typically, an archaeologist has the opportunity to see only small pieces of a railroad and must depend on historical documents and the work of other archaeologists to see a larger context. Palmer (2002) provides a snapshot from Nevada of what railroad construction camps can tell us about the workers and about their working conditions.

Consideration of the historic integrity of a railroad segment is dependent on the historic significance and period of use of the larger railroad system. The most important factors are why the railroad was important and when it was important. If a railroad was important as the first one in an area and was later replaced by other railroads or other forms of transportation, the early construction techniques, look, and feel of the railroad during that period of significance may be most important. If the railroad was important to a coal-mining district as an important hauler of coal, and continues to be important, then later lines to historic coal mines may be just as important as traces of early branch lines and loading facilities. If a railroad was important for engineering innovations and the use of specific designs and materials, eligible segments must still represent those innovations, designs, and materials. Evaluation of the present manifestation of a railroad and any archaeological potential it may have must be based on solid background research. In general, evaluation of integrity is not the same as assessment of condition, and the following considerations will apply.

**LOCATION.** A railroad is an engineered path. Portions of it might be moved, but as long as a line is in operation, origin and destination points remain the same. If a railroad segment can be seen and identified and can be verified as having been part of a historic railroad during one or more of that railroad's periods of significance, it has integrity of location. If that segment did not exist during one of the periods of significance of the larger resource, it lacks integrity of location for that period, even though it is now part of the system.

**DESIGN.** Railroads are designed and engineered features with engineered structures. Railroads have a combination of elements that create form, plan, space, structure, or style that should be considered in terms of the period of significance of the larger railroad system. If aspects of design have been changed from the period of significance, it will lack integrity of design. But if the railroad is important for its role in regional economy and not for aspects of its design or construction and still serves as an important transportation route in the regional economy, design may be a minor aspect of integrity.

**SETTING.** Setting is the physical environment of a historic property that conveys the essential character of the period of significance. If a segment of a railroad was an important route connecting a coal-mining district to industrial centers, then integrity of setting entails the extent to which the that railroad segment still exists in areas of coal mining and industrial development. If a railroad line was developed for scenic tourism, integrity of setting will depend on comparatively undeveloped natural scenery along the route and unobstructed views of key scenic landmarks that were historically promoted for that segment.

**MATERIALS.** Integrity of materials entails the continued presence of physical elements that were combined or deposited at a particular time and in a particular pattern or configuration to form the resource or feature. If a railroad was important under Criterion A as an economic artery that contributed to agrarian, industrial, or community development, the aspect of integrity of materials may be comparatively minor. If the railroad was important for its innovative use of materials, or as the last narrow gauge rail line to be built, integrity of materials may be an important consideration.

**WORKMANSHIP.** Integrity of workmanship entails physical evidence of the crafts or technology of a culture or people during the period of significance of the resource. If the railroad is significant for design or construction, the aspect of integrity of workmanship may be important. If it is important as a transportation artery that contributed to regional growth, integrity of workmanship will be of minor concern. Because successful railroads are dynamic, this aspect of integrity is most important for particular structures or elements that are significant for their design and construction, and least important for segments of the rail bed.

**FEELING.** Feeling entails a resource's ability to express or convey the esthetic or historic sense of a particular period. If a railroad was important as an ore hauler during an 1880s mining boom and is now adjacent to a ski resort and mountain homes, it lacks integrity of feeling. If it was important as a scenic tourism route, and much of that scenery remains as it was during the period of use of the railroad, it retains essential integrity of feeling, even if the structural features of the railroad are no longer there.

**ASSOCIATION.** Integrity of association involves the strength of the link between the resource and an important event or pattern of events. For a railroad segment it is the confidence with which the use of the segment can be linked with the larger railroad system of which it is a part, and the essential period or periods of significance. If a segment of railroad has been assimilated into a different railroad system and no longer connects to essential segments or features of its former system, it may lack essential integrity of association.

## **Research Issues**

The available historical documentation of railroads is strongly focused on rolling stock, buildings and structures, watershed events, and the scenic settings of the railroads. Rolling stock includes locomotives, passenger and freight cars, cabooses, and snow plows. The most popular building and structures are depots, stations, terminals, roundhouses, bridges, and tunnels. Watershed events most often documented include completion of the first railroad to certain communities or industries, completion of important bridges or

tunnels, and conflicts between major railroads. Upgrading of initial railroad lines, development of spur lines or bypasses, or routine operation of railroads are rarely as well documented.

As with other linear resources, field documentation should be founded on pre-field background research. When a segment of a historic railroad grade or associated resources are encountered, a reasonable attempt should be made to obtain the following information. Although this list may appear daunting, in many cases this information can be collected quickly and easily. The level of effort may be modest if the segment is evidently a minor spur in a large system and there are few associated materials remaining. As with other linear resources, railroads to some extent grade into the infrastructure of sites and districts. But this may be less true of railroads because they tend to lead to depots, terminals, and rail yards that are served by other transportation features.

- Compare the location of the observed segment to historic maps of the area to identify the historical names of rail lines in that approximate location. Many early historic grades have changed names and owners over the years. This exercise is simple when only a single historic railroad passed through an area and more involved if several competing or successive railroads used similar routes.
- Note whether the line is still in use and, if so, under what company name it is currently operating. The current or last company to operate the railroad will most likely have important historic records.
- Document the location of the principal grade, as well as any observed sidings, spurs, or branch lines.
- To the extent reasonable within the project limits, record associated features and sites. At a minimum, note the nature of nearby features and sites. Physical information about a railroad will be clustered at construction camps, maintenance and support facilities, depots, stations, and terminals, and at the storage, commercial, or industrial facilities served by the railroad.
- Map any associated traces of earlier grades, structural footings, bridge abutments, and associated features. Record any date nails or date tags found on these structural remains.
- Describe the grade or grades, including length, width, height of any raised portion, depth of cuts, and the nature of the bed material and fill.
- Record the types of cuts, cut-and-fill, contouring, or raised beds, and the nature of the ballast, if any of these remain.
- Compare the fill material to the underlying sediments and to nearby sediments and bedrock. If subsurface exposures are available, look for indications of whether the fill material has been dragged along or loaded and dumped from cuts to fill low areas, or if any of the material has been brought in from nonlocal sources.
- If any are still present, record the types of ties, types of rails, tie plates, spikes, and anchors. Record any markings that indicate manufacturer or date of production. However, remember that dates of manufacture on rails are a *terminus post quem* for when the rails were put in place and not for the construction of the railroad.
- Note any coal cinder shadow or smoke staining.
- Check nearby rock faces, particularly near grade cuts, for historical inscriptions.
- Describe any associated artifacts such as signal lanterns, tools, and train parts. Railroads will also have a light scatter of material fallen or discarded from moving trains that reflects periods of use and the nature of the cargo or passengers.
- Describe any evidence of upgrading of the line, including any traces of earlier grades or structures.
- Describe the physical condition of the observed segment. Keep this discussion separate from the discussion of integrity. Integrity of the segment must be discussed in terms of the larger resource and its periods and areas of significance. In general, the potential historical significance of a railroad line or network will be unrelated to its condition.
- Based on the interpretation of what historical railroad the observed segment represents, gather sufficient historical information on that railroad to be able to discuss the relationship of the observed segment to the larger resource.

Railroads were critical to the development of industries, including farming and ranching, and to the development and survival of larger communities. Research issues that railroad resources can address include

the importance of transportation in regional development, the interdependence of industries, community hierarchies, and the connection of industries and communities to world systems.

## **WATER CANALS AND PIPELINES**

Water canals, pipelines, and related features convey water as a resource or service. The distinction between canals and ditches is not absolute or consistent but is generally one of size, with canals generally being larger artificial watercourses and ditches being smaller trench-like channels. The word *canal* will be used here to cover both, except where counts of recorded features are discussed. In documenting these features, the historical name should be used. Parts of this discussion will acknowledge storage features, principally tanks and reservoirs, and the purposes or applications of the water. Issues involved in water canals and pipelines include water control (for beneficial use, for diversion, or for draining excess), water rights and priorities, and government involvement in water management. Principal beneficial uses of water include irrigation, placer mining, industry, community and domestic consumption, and hydroelectric power.

### **Description of Theme**

The principal function of most canals and pipelines is water conveyance. Water for irrigation, community and domestic use, industry, mining, and power generation has been an issue of contention throughout the history of Colorado. A historic context for irrigation and water supply ditches and canals in Colorado (Holleran 2005) was completed during the preparation of this historical archaeology context. That document addresses the general historical development of these systems in Colorado in greater depth and should be consulted for its historical perspective and for insights into researching canal systems.

From the very beginning of Euroamerican settlement of Colorado, water was diverted from drainages for placer mining, irrigation, and domestic use. Irrigation, mining, industry, communities, and households require large quantities of water, and water is a scarce resource. Disputes over water for irrigation, such as the Coffin vs. Left Hand dispute, contributed to the development of standard principles for appropriation of water rights. Disputes between the Fort Collins Colony and the Union Colony over water rights led to the formalization of principles of appropriation and priorities that were incorporated into Colorado's first constitution. It is interesting, however, that for many years placer mining was not considered use of water, and it was not necessary to file for water rights to divert water for placer operations. Consequently, it may be difficult or impossible to find records on water rights, construction, and use of many early canals and flumes that were built for placer mining operations. One way to identify and date these canals and flumes is to identify the mining operations that they served and look for placer claims and mining records.

Water is diverted from surface drainages or lakes or pumped from underground and transported to its location of use. The water may also be stored in tanks or reservoirs for later use. The principal features used for distributing water, once it had been diverted or stored, are canals and pipelines. In the mid-nineteenth century the most widespread technology for building small canals was the plow. A variety of devices was available for maintaining the desired grade with the plow. In the 1880s larger horse-drawn scrapers and scoops were developed, but most were difficult to control and had to be emptied frequently with shovels. In 1896, a wagon and farm equipment merchant in Fresno, California, patented a design that combined successful elements of earlier scraper designs and mechanical innovations to adjust the angle of the blade and tilt the scoop when it needed to be emptied. The name Fresno scraper was later applied to the class of horse-drawn scrapers that could be adjusted and tilted for making cuts at a controlled grade. This important innovation in ditch and canal construction was quickly adopted for road construction and maintenance as well. In addition, the mechanical innovations in blade shape, in mechanisms for maintaining blade angle, and in mechanisms for unloading accumulated dirt became the basis for the development of modern heavy earth-moving equipment.

Canals are basically a simple technology for conveying water along contours or across relatively level areas. Although there is some loss of water by evaporation and seepage, canals are adequate for conveying water to fields for irrigation. Where debris is likely to enter canals or if the water is intended for community or domestic use, enclosed pipelines are preferable. Pipelines reduce the loss of water by evaporation and limit the contaminants that enter the water.

Water is not available everywhere and needs to be distributed to different locations. For farms or small communities along large drainages, simple canals dug with hand tools and horse-drawn plows were adequate. Early placer mines were also near water and made use of quickly dug temporary canals and wooden flumes. As farms, ranches, settlements, mines, and industries quickly grew and were increasingly situated farther from water, larger cooperative systems became necessary. Cooperative arrangements and irrigation companies were formed to develop larger water networks. Many of the early colonies in Colorado also developed extensive water systems. The federal government gained an early interest in development of the arid West. The Carey Act of 1894 attempted to encourage state governments to develop large irrigation projects. In 1902, the Newlands Reclamation Act formed the Reclamation Service and began direct government involvement in large water projects for irrigation, flood control, and hydroelectric power.

## **Archaeological Manifestations**

Major types of water conveyance features are canals, flumes, and pipelines. Associated water control features include penstocks, dikes, levees, siphons, and drop structures. The early sections of the Colorado Engineering Context (King 1984) outline the structures, devices, and techniques employed in water control. Holleran (2005) presents a classification of Anglo-American canals in terms of their principal uses and by level of socioeconomic involvement. His levels include early mining diversions, pioneer ditches, colony ditch systems, and commercial or investor canals. These stages of organization of canal development are based on the historical socioeconomic system sponsoring the canal system. These are important aspects of the historic context of canal and pipeline systems but are not evident in the physical characteristics of the water conveyance systems.

The earliest canals in the state were simple trenches excavated in dirt and rock. The canals followed topographic contours as much as possible. Tunnels were used to penetrate high barriers if going around was not practical, and low areas or rock faces were crossed with wooden flumes. Another mechanism used for crossing short low areas or obstructions is the siphon. In areas of highly permeable soil where seepage or erosion was a serious problem, canals were often lined with planks. Later, concrete was used to line canals.

Early pipelines were made of wood. Seepage was a problem, particularly if the wood was not kept wet. In the 1890s spiral-riveted pipelines made of rolled sheets of steel were developed. These were used extensively for water pipelines until the late 1920s when they began to be replaced by welded steel pipelines.

The majority of the water conveyance and control features identified in the OAHP site database are canals and ditches. Most canals in Colorado carry water for irrigation, but some carry water for industrial uses. Some early canals were for placer mining or for domestic use. Placer mines played out quickly, and those canals were abandoned. Most surface water for community or domestic uses is now carried in water pipelines. Hydroelectric plants, historic resources in their own right, are generally close to the dams and reservoirs. Some plants are more distant from the water source, and water is conveyed to them through long penstocks. Hydroelectric plants use water dropped over a comparatively short horizontal distances to drive turbines or water wheels. The diverted water is usually returned to the watercourse below the hydroelectric plant. One exception to this is a pumped storage system in which the water is pumped back to the reservoir. Major federal water control projects in Colorado, such as the Colorado-Big Thompson Project from 1938 to 1959, focused on flood control, irrigation of arid lands, economic recovery from the Great Depression, and rural electrification. When it was completed, the Colorado-Big Thompson Project consisted of 13 reservoirs and regulating basins, 25 earth and rock-fill dams and dikes, 6 hydroelectric plants, 3 pumping stations, 24 tunnels, 11 major canals, 16 major siphons, and 8 penstocks.

Linear water conveyance features in the OAHP site database include 1,629 canals and ditches, 19 pipelines, and three water tunnels. The keyword search for this study did not identify any penstocks, but a more refined search should capture some of these features. Catchment, separation, and control structures include 44 flumes or sluices, two ditch or head gates, and two siphons. Drainage ditches and culverts along improved roads and railroads were included in those sections. In addition, the database listed a ditch camp, presumably a construction camp. Canals are the most ubiquitous water conveyance features.

## Site Significance

Water has been and continues to be important in Colorado. Water control features have been critical elements in the economic development of Colorado and the survival of its communities. Early cooperative systems such as the Hispanic irrigation systems of the San Luis Valley, and the community cooperatives of the Union and Fort Collins colonies played important roles in Colorado history, as did larger private investment projects like the Highline Canal and large government projects like the Colorado-Big-Thompson Project. The physical characteristics of these and the many other water conveyance systems throughout the state exhibit a range of technologies that are important to our history and identity. At the same time, there is a great deal of uniformity – common forms and common technologies – that is well documented. Most of the water conveyance systems derive their significance from their association with important events in Colorado history, their importance to the emergence and survival of communities, or their association with innovations in technology. An important contribution that archaeology can make to history is the documentation of the levels of technology that have been and continue to be used in the construction and maintenance of canals or pipelines. Documentation of the small distribution canals at the ends of the systems, particularly the field canals that may be re-cut on a regular basis, may contribute little to our understanding of these systems in Colorado history. However, these may be important features of irrigation technology in agricultural systems and may need to be documented as attributes of farms and ranches.

Canals are generally viewed as trenches with the fill material removed. They are not typically seen as sources of archaeological information. They have been maintained and cleaned, and flow or cleaning has tended to remove sediments and other materials. Canals are more often significant for their role in broad patterns of history or for some aspect of their construction (Criteria A and C). If a canal system is considered significant under Criterion A, routine maintenance and modifications that have allowed the system to continue to function in its historical capacity, and do not impair its associations under Criterion A, should not be viewed as adverse impacts (Clark 1998c:49). On the contrary, updates and modifications that have maintained the historic functional character of the system can be seen as enhancements to its historic significance. Canals are not typically major sources of historical archaeological information. Archaeological materials are more likely to be present in associated features or sites than in the canals themselves. However, as canals fill in, they accumulate materials that reflect their habitat. Canal systems are potential sources of two classes of archaeological information. First, canals are patterned networks that connect sources of water with its uses. This reflects the perceived needs of the community and also allows shifts in land use and settlement. Second, accumulated sediments in canals contain microstratigraphy, soil chemistry, pollen, and micropaleontology that reflect flow regime and environment at the time of deposition. They also reflect the introduced or cultivated plants on adjacent terrain. These kinds of studies have become important in studies of prehistoric canal systems in the Desert Southwest but may have little application to historic systems in Colorado.

California has had a water control history more comparable to Colorado than most other states. Many of the similarities were in the early use of water for mining and in the development of water rights principles. However, in parts of California, large water-control systems were developed to reclaim land by drainage, a pattern that was not common in Colorado. Nevertheless, the historic context for water conveyance systems in California developed by JRP Historical Consulting Services and the California Department of Transportation (JRP Historical Consulting Services and California Department of Transportation 2000) is a very useful reference for understanding the documentation and evaluation of water transport systems. The California context covers a wider range of water storage, transport, and control features than this discussion of linear conveyance features.

As with other linear systems, documentation and evaluation of elements of water conveyance systems must be preceded by pre-field background research. Canals and pipelines are evaluated as elements of the larger system of which they are part. An essential element of the background research is reviewing the periods of significance of the larger system and the criteria for evaluation that have been applied to that system. Water conveyance systems are typically significant as historic cooperative or government-sponsored projects, or as representative of the application of innovations in design, engineering, or construction. The following considerations should be applied to the aspects of integrity of segments of water control systems.

**LOCATION.** A principal canal or pipeline is an engineered path. Portions of it might be moved, but as long as the line is in operation, origin and destination points remain the same. If a canal or pipeline segment can be seen and identified and can be verified as having been part of a historic water conveyance system during one or more of that system's periods of significance, it has integrity of location. If that segment did not exist during one of the periods of significance of the larger resource, it lacks integrity of location, even though it is now part of the system. Realignment of a segment may affect its integrity as a historic engineering feature but may not strongly affect its integrity as a conveyance system that is significant in local agriculture.

**DESIGN.** Canals and pipelines are designed and engineered features with engineered structures. Canals and pipelines have a combination of elements that create form, plan, space, structure, or style that should be considered in terms of the period of significance of the larger water conveyance system. If aspects of design have been changed from the period of significance, it may lack integrity of design. But if the water conveyance system is important for its role in regional economy and not for aspects of its design or construction, and it still serves as an important water conveyance system in the regional economy, design of individual elements may be a minor aspect of integrity.

**SETTING.** Setting is the physical environment of a historic property that conveys the essential character of the period of significance. If a segment of a canal or pipeline was part of an important irrigation system that served a major agricultural area, then integrity of setting entails the extent to which that canal or pipeline segment still exists in and serves agricultural areas. Setting will be affected by residential or industrial development that is not in character with the periods of significance. Similarly, if a pipeline was developed to serve community and residential consumption, continued residential development will not be an adverse impact to the setting of the resource.

**MATERIALS.** Integrity of materials entails the continued presence of physical elements that were combined or deposited at a particular time and in a particular pattern or configuration to form the resource or feature. If a canal or pipeline was important under Criterion A as an economic artery that contributed to agrarian, industrial, or community development, the aspect of integrity of materials may be comparatively minor. If the canal system was an earthen system with minimal use of introduced materials, the integrity of materials may be minor in contrast to design and setting. If the water transport feature was important for its innovative use of materials or as a unique design (such as one for minimizing evaporation), integrity of materials may be an important consideration. Surviving wooden stave pipelines, plank-lined canals, and wooden flumes are becoming scarce and may be important as rare surviving examples of a once-common type.

**WORKMANSHIP.** Integrity of workmanship entails physical evidence of the crafts or technology of a culture or people during the period of significance of the resource. If the canal or pipeline is significant for design or construction, the aspect of integrity of workmanship may be important. If it is important as a water transport artery that contributed to regional growth, integrity of workmanship will be of minor concern.

**FEELING.** Feeling entails a resource's ability to express or convey the aesthetic or historic sense of a particular period. For water transport features, feeling is very closely related to setting. If the water transport feature remains in a setting that conveys the feeling of its period of significance, it retains integrity of feeling.

ASSOCIATION. Integrity of association involves the strength of the link between the resource and an important event or pattern of events. For a canal or pipeline segment it is the confidence with which the use of the segment can be linked with the larger water transport system of which it is a part, and the essential period or periods of significance. If a segment of a water control system has been assimilated into a different water control system and no longer connects to essential segments or features of its former system, it may lack essential integrity of association.

## Research Issues

Water conveyance features include both open systems (canals) and closed systems (pipelines). The basic elements of open transport systems are linear conveyance features (canals) and a variety of separation and control features. The term *canal* is used here to refer to the general class of open, linear water-conveyance features. This includes canals, laterals, ditches, spreaders, and other similar features. Alternative terms for canals, such as laterals, ditches, or spreaders, generally refer to a particular feature's place in the distribution hierarchy rather than any aspect of its size or morphology. A ditch in one distribution system could be identical to the main canal in another. Separation and control features include culverts, flumes, siphons, drop structures, checks, turnouts, diversions, gates, water wheels, pumps, and associated features. Transient or temporary control features, such as tappoons or small segments of hose, may be essential elements of the operating systems but are also dynamic.

To the extent feasible, the following information should be obtained in recording a canal segment:

- Does the water control feature correspond to an element of a historically mapped water control system?
- Does the canal exhibit characteristics of being recently excavated (not to be confused with having been recently cleaned)? A recently excavated ditch may be a temporary or seasonal feature. If the canal is an ephemeral feature, or a dynamic feature that is likely to change from year to year, documentation may be of little use.
- If the canal appears to be small and local, does it appear to function for drainage or local diversion? If it is a local drainage or diversion feature, it may not be possible to associate it with a larger distribution system. If a canal is a small feature supplied by a groundwater well, it may also have very little information potential.
- What other features are associated with the canal? These might include storage and diversion features, conveyance features, connected canals, separation structures, measurement or regulation features, lifting devices, or service facilities.
- What is the water source and where is the head gate for the canal? If the canal is on the topographic quads, it can be traced back to a source. If there is a gap in map coverage (such as a quad that doesn't show the canal), it may provide clues to when a segment was built or abandoned.
- Can appropriation and adjudication data on the canal be found in the records of the Division of Water Resources or county records? (Remember, several appropriations may share a canal, or an appropriation may flow through several canals; consequently, an appropriation date may not correspond to the construction of the canal.)
- Is the canal segment part of a named canal or canal system? If so, what is its role within the larger system?
- If the canal is part of a larger system, what is the basic history of that system? Is it associated with any major cooperative or government projects?
- What is the apparent destination or purpose of the canal? Is it for irrigation, community or domestic use, hydroelectric generation, or industrial use?
- What is the approximate extent of this canal (not the whole system)?
- Who operates the canal? Is it a private owner, a cooperative, an irrigation company, or a government entity?
- Does the water come from a surface stream or river; a well or spring; a pond or reservoir; or runoff?
- What are the overall dimensions of the observed segment (top width, bottom width, depth)?



- What are the dimensions of the apparent active channel that is the portion showing evidence of regular flow?
- What is the gradient of the observed segment? If needed at a later time, dimensions and gradient of the active channel can be used to estimate typical flow. If a canal has been abandoned and eroded, an average gradient calculated from a topographic map may be more representative than local measurements.
- Are there clean-out berms? How large? How well consolidated?
- Is there evidence of substantial sedimentation?
- Are there brush or trees established along the banks? Large trees established on well-consolidated clean-out berms indicate an old canal.
- Is the canal lined or unlined? If lined, what material is used?
- Does the canal follow natural contours, or does it have clearly engineered straight cuts?
- Is the canal clearly associated with any structures, features, or sites?

Reservoirs and canals are elements of larger systems, and some systems with separate histories may be physically interconnected. New systems may also incorporate parts of private systems that were built much earlier than the larger systems. Surveys of limited scope, particularly linear surveys that cross canal systems, provide a very limited view of the water conveyance system. As conscientious as the investigators may be, it may be impossible to identify the extent of a canal system without system maps, archival work, and interviews with owners or operators. Nonetheless, these limited observations contribute to the assessment of the historical system.

## **OIL AND GAS PIPELINES**

Oil and gas pipelines are transport systems for liquid hydrocarbons, principally oil and natural gas. Oil and gas pipelines have a comparatively long history in Colorado, but these features are generally perceived as modern and not documented. In addition, many historic fields and facilities have remained in operation and expanded over the years, and the task of unraveling the historic from the modern can be difficult.

### **Description of Theme**

Oil had been harvested from natural seeps for generations to grease wagon axles and to fuel simple lamps. In the mid-1800s petroleum was considered expensive and hard to find, and lamp oil and lubricants were predominantly whale oil, lard oil, or other rendered fats. This picture changed in 1859 when the first commercial oil well was drilled in Pennsylvania. The first commercial well included a small pipeline to deliver natural gas to the nearby village, but the oil was transported by wagon in converted whiskey barrels. Later, in 1859, the first oil company in the Kansas Territory was formed. Petroleum was identified in Colorado as early as 1860. At those early sites the oil was skimmed from the surface of creeks and ponds and distilled in simple stills to produce lamp oil and lubricants (Scamehorn 2002). Refining techniques were quickly developed, and kerosene quickly gained popularity as a lamp fuel and for other household uses.

A water-well driller near Florence inadvertently drilled the first oil well in Colorado in 1881 (Scamehorn 2002:43). Oil Spring (5FN118) was listed on the National Register in 1996. In the early history of oil and gas in Colorado, petroleum products were shipped by wagon. A few local pipelines were built in the late 1800s to deliver petroleum from the oil fields to the refineries. The principal products at the time were illuminating oil, lubricants, and paraffin (Scamehorn 2002:49). At that time there was no market for the lighter fractions, such as gasoline. However, with the emergence of the automobile in the early 1900s, the market changed. In the early 1900s, several major new oil fields developed in Colorado, including the Wellington Field near Fort Collins. That field also produced large quantities of natural gas (Scamehorn 2002:65). At that time most petroleum was still shipped by wagon or railroad tanker, and natural gas was still considered more a nuisance than a resource.

Natural gas was used as a source of light, but in the early years of its use it was difficult to transport and was used primarily for streetlights. Early natural gas pipelines were of poor quality and depended on the natural compression of underground gas pockets. More often, natural gas was treated as a nuisance byproduct of oil or coal and was vented or flared. In the late 1920s, increasing awareness of the potential thermal properties of natural gas, technological advances in metallurgy, welding, and pipe rolling and the application of artificial compression to the pipelines combined to stimulate a profitable natural gas industry.

In the early 1900s in Colorado gas street lamps were fueled by coal gas, and natural gas had virtually no market. Coal gas was delivered to street lamps, and in some cities to homes, by way of low-pressure cast-iron pipes. Boulder Gas Company began delivering natural gas as early as 1903, but most was still vented to the atmosphere (Scamehorn 2002:78). By the late 1920s, thin-walled, electric-welded, high-pressure steel pipelines with online compressors were developed. But the first long-distance natural gas pipelines in Colorado were those to Colorado from developed gas fields in the Texas Panhandle and Wyoming, not from Colorado gas fields to other markets. The first major gas fields developed in Colorado were the Hiawatha, Thornburg, Garcia, Berthoud, and Craig Dome fields. Many gas fields in Colorado remained undeveloped in the 1930s because they lacked access to major markets (Scamehorn 2002:129). Access began to improve in the late 1940s when major pipelines were built to the Pacific Coast.

Many of the early long-distance gas pipelines were associated with manned pumping and booster stations at intervals along their routes. Major pumping and switching facilities in remote areas might include entire communities. With increasing automation of compression and metering systems in the 1960s, the need for these manned facilities diminished. Company records, some more detailed than others, document approximate dates of construction of facilities and upgrades of major equipment. Documentation of construction camps and support communities tends to be sparse or nonexistent. These industry-support communities, whether company sponsored or spontaneous, may be important sources of information about the social structure of laborers.

## **Archaeological Manifestations**

Oil and gas pipelines are enclosed systems for conveying liquid or gaseous hydrocarbons. The most common pipeline systems are for oil or natural gas. But pipelines also convey other liquids and non-hydrocarbon gases and slurries important to the energy industries. Keywords chosen for the database search did not yield any oil or gas pipelines or sites directly associated with pipelines.

Older pipeline systems are often not readily evident during surveys, and they are frequently not recorded. Oil and gas pipelines are likely to be perceived as modern, particularly if they are still in use. However, some historic systems in the state, and others developed in the 1960s or 1970s, will soon require our attention. As with other linear resources, pre-field background research is important to identify the existence of early pipeline systems in the project area. If fields have continued to develop, earlier infrastructure may not be readily evident among more recent features.

The majority of historical pipelines may be buried, either during initial construction or as a result of subsequent processes. The use of aboveground pipelines has been most common as temporary gathering systems until permanent pipelines could be built. Beginning in the 1980s, aboveground pipelines became more common as permanent gathering systems in some arid areas, but they have been used infrequently in Colorado.

Aboveground structures, such as protective sheds and support facilities, are more easily seen. However, construction of these buildings has used simple and expedient modular structural elements that changed little in material and technology from the late 1940s through the 1980s. In addition, structural elements and materials were interchangeable and often reused. Identification of historic features may often depend on historical documents, structural elements of footings, and installation dates of major equipment such as compressors.

## **Site Significance**

Pre-field research should include a search for early oil and gas fields and associated pipeline systems in addition to the map searches for trails, roads, railroads, and canals. There is little need to be alert for traces of historic pipelines in areas that were not developed until recently. Pipelines must be evaluated as elements of larger systems and in terms of their contribution to regional history. An oil or gas pipeline may have been important in regional or state history and in the economic development of an area. The significance of a pipeline must be evaluated within the context of its historic period of use. If the pipeline is still economically important, maintenance and upgrading may not detract from its historical integrity. However, if the pipeline is important as a rare surviving example of innovative or historically important technologies, the condition of its original design, materials, and workmanship may be important. It is not uncommon for distinctive elements of design, materials, and workmanship to remain in place and recognizable after years of upgrades and maintenance. Early pipelines and facilities within an area, as well as pipelines that were historically innovative in their design or use of materials, should be documented and assessed carefully in terms of their areas and periods of significance. The attributes that may make them important in history may not be immediately evident, particularly if large portions are buried or otherwise obscured.

## **Research Issues**

Pipelines do not generally draw researchers' attention, and, probably, most of those that are readily seen have been built within the past 30 to 40 years. In addition, pipelines are largely buried, and may not be visible for much of their extent unless they are exposed by erosion, mining, or construction. But the time is approaching that researchers need to start paying attention to the distinguishing characteristics of recent and older facilities. Oil and gas storage facilities and long-distance pipelines are beginning to come to our attention as known historic facilities are abandoned or upgraded. As older pipelines are abandoned, slip-lined, or replaced in response to market volume or safety concerns, more and more of them may need to be evaluated as historical features. Basic historic context and potential engineering significance are established through historical research, but physical characteristics and integrity may need to be established or confirmed by archaeology.

## **UTILITY LINES**

Utility lines include communication systems, principally telegraph and telephone lines, and electrical power lines. Telegraph wires have been largely displaced by telephone lines and wireless communication systems, including radio (originally developed as wireless telegraph) and television. Large parts of telephone transmission are also now wireless in the form of cellular systems and traffic carried by microwave transmissions. High-voltage transmission lines and lower voltage delivery lines are still common power distribution features.

## **Description of Theme**

Linear utility lines are delivery systems for communications or electrical power. From the mid-nineteenth century into the twentieth century, three networks based on electrical transmission through wires were spreading across the continent. These networks were telegraph lines, telephone lines, and power transmission lines. Telegraph could use low-voltage, direct current and was able to spread over great distances sooner than power transmission. Until recently, all of these networks depended on conductors supported by poles or towers. In the communications networks, much of the transmission now utilizes wireless systems and underground cables. The major aboveground systems still being built are high voltage electrical power transmission systems.

## TELEGRAPH

Communication by wire uses electricity and some aspects of its development were tied to advances in electrical power and transmission. By the early 1800s practical storage batteries had been developed, and William Sturgeon had demonstrated the principle of the electromagnet. In 1835 Samuel Morse demonstrated a simple device for transmitting coded signals from one electromagnetic device to another over wires. Nine years later a news dispatch was sent by telegraph from Annapolis Junction, Maryland, to Washington, D.C. In the late 1840s numerous telegraph systems were built, and by 1851 many railroad companies were using the telegraph to dispatch trains. Railroads adopted the use of telegraphs quickly, improving their safety and efficiency. Most telegraph lines followed railroad rights-of-way. Telegraph lines were typically overhead wires strung on poles. To minimize interference and maintain signal strength, the wires were separated from the wooden poles by glass or ceramic insulators.

Prior to the completion of the transcontinental telegraph, news and communication could travel no faster than a fast horse and rider. In early 1860, stagecoach lines had been improved across the continent and the major express lines, such as Butterfield and Overland, could carry mail from the end of the railroad and telegraph lines in St. Joseph, Missouri, to California in as little as 20 days. Bankers and businessmen considered this unsatisfactory. The federal government was offering lucrative transcontinental mail contracts to the company that could demonstrate prompt and reliable delivery. In a publicity stunt to win these contracts, one of the smaller stage lines, the Central Overland California and Pikes Peak Express Company, began the Pony Express in early April 1860. The horse-and-rider relay system could cross the gap between telegraphs in St. Joseph, Missouri, and Sacramento, California, in as little as 10 days. The Pony Express operated for just over 18 months, until Western Union completed the transcontinental telegraph. Important news and communications could now reach coast to coast within hours, rather than days or weeks. However, the telegraph was not yet instantaneous like the modern telephone. Messages were relayed from operator to operator, frequently at railroad depots and stations, and the earliest telegraph lines could carry only one message at a time. Later duplex and multiplex systems increased potential traffic on telegraph lines, but the general solution was to bundle multiple wires together and provide multiple operators at busy stations.

## TELEPHONE

In 1877, Alexander Graham Bell introduced the telephone. Initially a competitive threat to the telegraph, the telephone developed a new market and coexisted with the telegraph for many years. The principal threat to the landline telegraph was the wireless or radiotelegraph. Telephone systems have long used wireless transmission for telephone signals, but the wireless, or cellular, telephone still coexists with landline systems. Local telephone transmission systems used technologies similar to telegraphs, with the addition of switchboard systems. The earliest visible distinctions between telegraph lines and telephone lines were distinctions of scale, with telephone systems bundling multiple lines along the same route. In many local and rural delivery systems the telephone also shared poles with electric lines. In common use, the terms *telephone pole* and *power pole* were often used interchangeably. More recently, telephone systems have focused on underground cables. The focus on less-exposed underground cables has become more pronounced with the adoption of fiber-optic cables that can carry hundreds or thousands of signals concurrently.

## POWER TRANSMISSION LINES

The development of practical electric motors and the commercial development of electric power began to blossom in the 1870s. Edison developed the electric light bulb in 1879. In the 1880s, several inventors, including Edison, developed generators for direct electrical current that could be transmitted over short distances. In this same period the Sprague electric motor was developed. More important for the development of power transmission, and also wireless communication, were the inventions of Nikola Tesla, an eccentric Serbian immigrant. Tesla had already made important innovations in induction motors before he immigrated to the United States in 1884. In 1885, Tesla sold a number of his patent rights, including designs for alternating current dynamos and polyphase electric motors to George Westinghouse. In the late 1880s, Tesla and Westinghouse developed a practical generating system for alternating current, which could be

transmitted over greater distances. An intense power struggle ensued between Thomas Edison's direct current transmission systems and the Tesla-Westinghouse alternating current systems. Cities and industries quickly realized the advantages of electric motors for machines and public transportation. In Ames, Colorado, in 1890, L. L. Nunn adapted experimental Tesla-Westinghouse generators and other emerging electrical technology to generate and transmit high-voltage alternating current over 2.5 miles to operate electrical machinery at a mill near his Gold King Mine near Telluride. This was a major development for the commercial transmission of high-voltage alternating current. A decade later, again stimulated by the needs of the Colorado mining industry, the Georgetown Steam/Hydro Generating Plant added gas-fired steam generation to the production of high-voltage electricity.

Large towns in the West were electrified quickly. Electrification of the rural West occurred much more slowly. Farms and ranches were widely scattered, and the cost of setting poles and stringing lines was difficult for the power companies to recover. Farmers and ranchers were aware of the benefits of electric lights and electric appliances, and many of them had wind-driven electric generators. Windmill generators could produce electricity only when the wind was blowing, and the available technologies for storing electricity were limited and often hazardous. Local efforts at rural electrification began soon after electrification of the towns. By 1909, several efforts were under way to organize rural cooperatives and to obtain federal assistance. It was not until 1936 that President Franklin D. Roosevelt signed the Rural Electrification Act into law. The act made federal loans available to private, public, and cooperative utility ventures to bring electricity to rural areas. Loans were primarily to fund major capital investments, such as transmission lines and generating and transmission facilities in rural areas.

## **Archaeological Manifestations**

Physical manifestations of utility lines include overhead and underground lines and cables, poles and towers, glass and ceramic insulators, generating facilities, substations and switchyards. These are most often encountered as active systems that have been maintained and upgraded. Occasionally abandoned historical utility lines are encountered in the field, but more often, bypassed poles or structures, or fragments of old insulators are found near existing lines. Whole glass insulators have been popular with collectors and have become scarce along accessible portions of abandoned utility lines.

Few utility lines or power plants showed up in the OAHF database query. They included eight power stations, 24 transmission line segments, 16 telephone lines, and one telegraph line. Many of the small utility lines may have been identified as older systems from the presence of glass insulators or threaded wooden pegs for insulators. Collectors have compiled useful catalogs, indices, and chronologies for glass insulators, but they have also collected numerous complete specimens from along utility corridors. Documentation and chronologies for ceramic insulators are not as readily available. Ceramic insulators were also fairly conservative, in that a limited variety of styles or designs were used in large numbers over many years. That makes them less useful as “index tools” for verifying the periods of use of a utility line than glass insulators.

Until the 1960s, most of the transmission lines in Colorado, and virtually all of the telephone lines, were carried on wooden poles, or wooden pole structures, such as H-frames. Steel poles and steel lattice towers existed as available technology and were in use elsewhere in the country from the 1910s or early 1920s. The first steel tower transmission line structures in the world were erected north of Salt Lake City in 1915. These structures appear modern and are nearly indistinguishable from structures installed today. Date nails were commonly used on wooden poles, and date tags are common on wooden poles, pole structures, and steel structures. These nails and tags indicate date of construction, replacement, inspection, or repair.

## **Site Significance**

Utility lines were historically important in local and regional development. Telegraph lines were vital in the early development of the West. They functioned in the dispatching and coordination of railroads and they provided a means of immediate communication. Surviving segments of telegraph lines are rare. Their

major routes of use were along railroads, and traces are most likely to be found as pole stumps and fragments of insulators along older railroad grades. Early telegraph systems are significant in local, state, and national history. In the early 1900s telegraph lines were quickly replaced by the wireless telegraph, the telephone, and, later, the radio. In rural settings, telephone lines and low-voltage electrical lines may resemble telegraph lines. However, the telephone and electric lines occur much later in most areas and are not as likely to follow railroads. Many of these later utility lines do follow rural roads.

High-voltage transmission lines are important in state history, beginning with the Ames-Telluride line of 1890 and the Georgetown Plant. Major early centers for the development of high-voltage power transmission in Colorado were the mining districts, and early lines should be sought in those regions. The first long-distance transmission to a major urban center was the Shoshone-Denver hydroelectric system completed in 1909.

Establishing the periods of significance for utility lines may be more difficult than for roads, railroads, or canals. They are less likely to be depicted on historic maps, and local histories and historic newspapers are more likely to acknowledge the first connection of a system than the locations of the utility lines. Successful utility lines were also upgraded and maintained throughout their use lives. Fortunately for archaeology and collectors, the replaced elements of upgraded systems were generally left in place or discarded nearby. The age and original uses of a utility line can sometimes be established from remnants of poles, cross members, insulators, and conductors or from date tags, if they can be found. Once an approximate date is established, it is easier to identify the larger utility system that the segment represents. After evaluating the historical significance of the larger utility system, the potential contribution of the segment can be addressed.

## **Research Issues**

Any abandoned utility lines should be inspected to find evidence of age and function. However, only early or major systems are likely to yield information that could be considered important in history. Many utility lines will not yield any additional information beyond their locations and dates of use. Glass insulators have routinely been recorded, and there are numerous collectors' references to help date them. Of course, many of the more complete specimens have been collected. Additional information that should be recorded for wooden poles and structures that are found are any structure numbers or date tags, the absence or evidence of uniform milling and treatment of the poles, attachment and bracing of cross members, types of pegs and attachments, and types of braces or guy wires.

Early utility lines are most likely to be important for their association with the development of mines and communities. Communication lines reflect the importance of rapid communication to emerging industries and communities. Power transmission lines relate to the development of electric ventilation fans and electric power tools for underground mines, as well as the cultural imagery of electric lights and devices in emerging mining towns.

## **CHAPTER SUMMARY**

Linear resources are pathways or conduits along which people, resources, goods, or services are or were conveyed from one location to another. The attributes of these linear features reflect the characteristics and needs of the people, resources, goods, or services that moved along them, as well as the technologies that were available during their development and use. Linear resources are connecting threads in cultural networks and landscapes. The historical archaeology of linear conveyance resources can be viewed both in terms of their contribution to the connection of resources and sites in cultural landscapes and in terms of their material archaeology that is the information embodied in their artifacts and structural features.

An important aspect of archaeology is the analysis of cultural systems in time – a cultural geography of the past. The documentation and analysis of the pieces, the districts, sites, buildings, structures, objects, artifacts, and traces contributes to the pattern of the bigger picture. Linear features are the connecting threads within and between sites that enable communication and circulation. The cultural landscape is the expression of human existence on the land and includes the cultural and natural resources associated with a pattern and period of use. It is important to approach linear features in terms of their place in the cultural landscape and in terms of their historic context. Extensive linear features need to be recognized and recorded as elements of networks that connect sites, districts, and resources within a cultural landscape. Elements of these large systems and smaller linear features also form connective infrastructure within sites and site districts. In a cultural landscape approach linear features are viewed at either of these levels, as circulation networks within the larger landscape or as infrastructure at the local level.





## CHAPTER 9. RECREATION

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### DESCRIPTION AND BACKGROUND

Colorado has a rich and diverse recreational heritage that is intertwined with many other historical themes in one way or another, including the earliest government explorers reporting on the region's hot springs, the development of recreational services for the mining camps and towns, and the establishment of a vibrant ski industry. As the geographer Wyckoff (Wyckoff 1999:88) elegantly notes, "By the late nineteenth century, Americans had clearly fallen in love with the scenic pleasures of the region, and this relationship, once established, proved to be a lasting romance that forever altered the human geography of the Colorado mountains."

The shaping of a "recreational heritage" in Colorado has been facilitated by having population centers in close proximity to outdoor recreational opportunities, mainly in the mountains (Wyckoff 1999:80). As rail networks began to spread throughout Colorado in the 1870s, various groups began to promote Colorado mountain vacations, popularizing the high-country health resorts and ideas of the "Wild West." Between 1890 and 1920, the volume of tourists and vacationers to and within Colorado increased dramatically, altering settlement patterns and landscapes with the appearance of new resorts, cabin colonies, tourist attractions, and campgrounds appearing alongside older industrial-era mining and smelting facilities. Camping as a recreational activity grew with the availability of leisure time among the middle class beginning in the 1890s. The automobile made the growing middle class more mobile and camping as recreation increased in the 1910s and 1920s. By the 1930s, the Colorado landscape had been altered to accommodate automobile tourism through the development of better highways and improved camping and other recreational facilities. While other industries slumped during the Depression, tourism continued to increase.

To further archaeological research of recreation an attempt will be made to define major thematic frameworks that connect site types, structures, and landscapes to particular times and places. In the following discussion, a systematic attempt is made to define types of recreation undertaken in Colorado and to identify the range of archaeological materials and places likely to be associated with each of them. The terms *tourist* and *vacationer* will be used rather interchangeably. Tourists travel from place to place for pleasure or cultural or recreational events, usually in their own country, often with overnight stays in inns, motels, or hotels. Campers and visitors to national forests and national parks are most likely to be considered tourists. Vacationers also travel for pleasure but with more of a period of time in mind as a vacation, and tend to visit a place as a destination, such as a resort.

The archaeology of recreation encompasses a vast complex of facilities linked by transportation networks, with diverse subsets of communities and structures in diverse environments, each offering its own trades and services, but with the underlying central theme of recreation. Parks and scenic byways prominently acclaim the recreational landscape and are interspersed with more isolated sites of individual or small group recreation. The archaeology of recreation is, to a large degree, concerned with documenting linkages and patterns of change in settlement and landscape use that are due to or incorporate recreational pursuits over time.

No single definition of recreation encompasses all forms and meaning of the theme applicable to any specific activity. The complexity is summarized by Brockman and Merriam:

Recreation may be purely physical; it may provide intellectual, esthetic, or emotional outlets; or it may include combinations of these. In its broadest sense, it encompasses much more than simple amusement or play. Moreover, the way free time is used is very definitely individual and personal. An activity which serves as recreation for one person may be work, or a bore, for another. Further, recreational needs of specific individuals vary at different times. They not only change during periods of life, in accordance with physical ability and intellectual capacity, but often at different periods in one day, depending on personal needs, preferences, and options. (1979:4)

Recreation is a common topic as a component of larger archaeological investigations, such as the role of music in a household or play by children, but purely recreation-oriented sites have seldom been the focus of archaeological inquiry. The following discussion borrows largely from studies of historical geography and recreational management as a basis for developing a systematic approach to the analysis and interpretation of related sites and features.

## **MANIFESTATION OF THE THEME IN COLORADO'S ARCHAEOLOGICAL RECORD**

### **Archaeological Characteristics That Make Sites in the Theme Identifiable**

Scale, temporal period, and setting are expected to be determining influences on the nature and types of recreational activities that took place at any given place. Also, and more obviously, the higher frequency of recreational sites can be expected with proximity to population centers, simply as a function of population dynamics whereby individuals recreate most commonly wherever and whenever they can (Brockman and Merriman 1979:109). Spatially, Wyckoff (1999) recognizes six centers or regions of late nineteenth and early twentieth century recreation in Colorado:

- Denver and Colorado Springs (served as gateways that supported an array of pleasures and attractions).
- Mining centers of Central City and Georgetown, the medicinal waters of Idaho Springs, the railway engineering eccentricities of the Georgetown Loop, and the alpine scenery of Chicago Lakes.
- Estes Park region northwest of Denver, famous for its comfortable guest ranches and an estate and resort promoted by the Earl of Dunraven.
- Grand Lake and Hot Sulphur Springs in Colorado's Middle Park.
- Glenwood Springs, a far larger hot springs resort.
- Narrow-gauge railroad corridors, such as Royal and Toltec gorges.

Other trends in spatial patterning can also be expected. For instance, some of the earliest recreational activities were concentrated along the narrow-gauge railroad corridors. Importantly, recreational travel is not expected to have left much of an archaeological record because recreational railroad travel did not involve a large number of people and required no associated landscape changes and few visitor accommodations. During the early years of the railroad, the regional settlement pattern continued to be dominated by mining (Wyckoff 1999:81). However, with increased tourism in later years, visitor accommodations and attractions became commonplace.

Temporal trends can also be expected to affect the archaeological manifestation of the various types of recreation. Assuming that free time and personal income directly affect the ability to engage in recreational pursuits, trends in personal consumption expenditures over time can be a measure of changing trends in recreation. As shown in Table 39, trends of the Gross National Product (GNP) are closely paralleled by personal spending, as measured by personal consumption expenditures. During the Depression years of the 1930s, a sharp decline in recreational pursuits may be expected due to an overall decrease in personal

consumption. However, job losses resulted in “enforced leisure” where workers had time on their hands for recreation (Forbes 2001:66). During the period, municipal campgrounds at various city parks were closed during the Depression years, but inexpensive motor courts, cabin camps, and trailer camps sprang up in their place (Wyckoff 1999:87). It may also be expected that recreation on public lands increased during the Depression as a place where free or inexpensive recreational activities were pursued. In times of fiscal crisis, social and cultural recreation can be expected to decline, while sporting and outdoor recreation remains relatively constant (Forbes 2001:67). The reason behind this difference is that social and cultural recreation usually requires an admission fee and sporting and outdoor recreational activities are less formal and often do not have built-in participation costs. The new mobility offered by automobiles was so significant “that gasoline sales remained remarkably steady right through the Depression when renewed poverty exacted many sacrifices” (Brockman and Merriman 1979:101).

**Table 39.** Gross National Product (GNP) and Personal Consumption Expenditures (PCE) in billions of dollars (Brockman and Merriman 1979:9).

Year	GNP	PCE
1929	103.4	77.3
1930	90.7	69.9
1935	72.5	55.8
1940	100.0	71.0
1945	212.3	119.5
1950	286.2	192.0
1955	399.3	253.6
1960	506.0	324.9
1965	688.1	430.2
1970	982.4	618.8
1975	1,516.3	973.2

Recreational tourism in Colorado, especially prior to the 1890s, was largely restricted to more affluent members of society using the newly completed railroads in seeking “the richness and variety of scenery, new resorts, and novel experiences such a journey usually offered” (Wyckoff 1999:81). Indeed, the earliest resorts and other tourist facilities catered almost exclusively to those of high economic status. For example, at the developing resort complex of Glenwood Springs in the 1880s and 1890s, one could stay at the Hotel Colorado and partake in select activities offered by the Glenwood Polo and Racing Association (Wyckoff 1999:83).

During the late nineteenth and early twentieth centuries, some differences in the demographics of recreation can be expected to affect archaeology. For instance, in the late nineteenth century, leisure opportunities for women, in general, were “nascent and irregular” (Forbes 2001:61), and women’s groups and clubs, whether conducted in a corporate or private setting, usually advocated “gender-appropriate activities,” such as personal hygiene, music appreciation, social usage, and home adjustments. This suggests a clear dichotomy in male and female recreational pursuits during that period that may be reflected in the archaeological record. Over time, women challenged the idea of “appropriate” leisure activities, “seeking to secure more vigorous recreation and sports” (Forbes 2001:71). In addition, changes in wage labor and regular working hours helped to define working-class women’s leisure “in a manner different from that experienced before or by those in domestic service” (Forbes 2001:61). How this change of demographics in recreation will be manifested archaeologically is uncertain. The gear necessary for participation in outdoor recreational pursuits have remained largely the same regardless of the sex of the participant. It is possible that female-specific articles of apparel or commodities may show an increase at campsites or lodging facilities.

A reduced work week, expendable income of workers, and the rise of the automobile contributed to the rise of middle-class recreation, in general, across Colorado, as Wyckoff summarizes:

After the 1890s, even as America's elite continued to delight in high country pleasures, a new middle-class invasion of the Colorado mountains far outnumbered the leisure set. In the first twenty years of the new century, a flood of Americans of more modest means demanded their own assemblage of tourist experiences and accommodations that could meet their limited budgets and time. Several basic shifts in the interplay between tourists and the Colorado mountains became apparent between 1890 and 1920. Most fundamentally, a new scale of consumption, both in the number and variety of mountain attractions as well as in the sheer volume of visitors, exerted an ever greater impact upon mountain settlement patterns and landscapes. Colorado mountain tourism was a clear sign of the fundamental cultural and economic shifts that were propelling westward increasing numbers of urban middle-class American families. (1999:84)

Recreation during this period resulted in a rise in accommodations and facilities intended to cater to middle-class American families. Dude ranches and "artifact" types, such as the tourist Pullman cars, offered affordable alternatives to the luxury accommodations and ostentatious "palace cars" of the rich. The expansion of automobile travel after 1910 contributed to the development of new resorts, cabin colonies, tourist attractions, and campgrounds for all classes of recreational travelers (Wyckoff 1999:87). This expansion, oriented toward the middle class, should be well represented in the archaeological record.

Perhaps the most widespread archaeological manifestation of the expansion of recreation during the early twentieth century is from camping and travel on public lands, particularly Forest Service lands. By the early 1920s, it has been estimated that more than 600,000 campers were visiting the 250 or so Colorado campgrounds annually (Wyckoff 1999:87). The archaeological manifestation of this intensive activity is most evident in the miles of historic trails and campgrounds throughout the Colorado mountains and along many lakes and streams, forming what Wyckoff calls a "tourist infrastructure in the high country landscape" (Wyckoff 1999:87). Hunting and fishing are subsistence activities that gradually became recreational pursuits as people gained leisure time. Fishing is focused along rivers, streams, ponds, lakes, and reservoirs. Hunting is more dispersed throughout wild lands but is manifested by intensive short-term use where base camps are established by hunting parties that sometimes can be quite large and well equipped. Both hunters and fishermen can be serviced by guides and based from permanent lodge establishments. Hunters also create distinctive landscape modifications, such as blinds, tent platforms, large campfire rings, privies, game-hanging racks, and trash disposal pits and middens.

To provide a systematic framework for recognizing and interpreting the various types of recreation archaeologically, several major categories are identified in Table 40, including a summary of their more common associated features and artifacts. The following discussion summarizes the main characteristics of each of these categories, considers spatial and temporal overlap, and focuses on specific trends and characteristics.

## **OUTDOOR RECREATION**

For outdoor recreation, it is useful to distinguish between activities conducted on wild lands and those conducted on developed lands. In general, wild-land recreation is resource oriented, whereas the developed-land recreation is activity oriented. The archaeological manifestations of outdoor recreational pursuits on wild lands (including national and state parks, forests, and related areas) are expected to be relatively ephemeral, low visibility sites. Developed-land recreation focuses on conditions and facilities necessary for group activities (including sports, group interests, and engineered or manicured surroundings). In comparison to wild-land recreation, developed-land recreation is focused on family-level or small-group activities and tends to be near population centers for accessibility.

Several classes of outdoor recreation are listed in Table 41, below, to provide a general context for classification of sites and features for archaeological interpretation. For all classes, it is expected that intensity of use will be focused upon designated recreation locales, with recreational activities becoming more dispersed with distance from designated areas and trails (Helphand 1991:209).

**Table 40.** Recreation categories, characteristics, and associated sites, features, and artifacts.

Category	Characteristics	Sites/Features/Artifacts
Outdoor recreation: wild lands	Usually involves dispersed, personal recreation involving small groups of travelers seeking the primitive stimulants of hunting, fishing, and climbing. Includes camping, fishing, and hiking, particularly in national forests and national parks and monuments – expected to be represented largely by ephemeral, low-visibility sites.*	Isolated features, small camps, hunter and fisherman shelters, campgrounds, picnic grounds, cabins, and municipal parks. Districts: commercial, tourist, and dude ranches.
Outdoor recreation: developed lands	Involves larger, more family-oriented groups inclined to remain along highway or rail corridors and simply wish for a view of Colorado’s scenery and natural wonders. Some sojourners engage in short camp “outings,” and railroads offered lists of convenient outfitters, small resorts, and ranches that catered to the needs of those hungry to “rough it,” albeit briefly.*	Tents and other camping equipment, implements for hunting and fishing, photography and artist’s tools. Range of household items, including toys, pastimes, musical instruments, games, hunting and fishing equipment, etc.
Government-managed	Diverse improvements that may include an entire park, work camp, or a host of smaller, more specific sites on public lands.	Campgrounds, water-related areas, roads, paths, parking areas, campgrounds, comfort stations, community kitchens, water fountains, water towers, check-in stations, pump houses, organization camps, cabin courts, lodges, beaches, docks, trails, playing fields, water supplies, utilities, overlooks, winter sports areas, trails, entire parks and wilderness areas, and organization camps.
Health resorts	Particularly the infirm or health-conscious make pilgrimages to hot springs resorts, already a well-established tradition in Europe and the eastern United States.*	Hot springs, pools, baths, respiratory sanatoriums, health camps, resorts, and spas. Mineral waters and medicinal products and healthful foods.
Entertainment: civic and seedy	Largely architectural remains of civic buildings and facilities. Includes saloons, and red-light districts commonly associated with mining camps and towns.	Movie house, opera house, radio station, town park, gazebo, stage, concert hall, dance hall, art gallery, sports fields, amusement parks, fairgrounds, play grounds, red light district, opium den, brothel, saloons.
Social and industrial (corporate)	Country clubs, activity clubs, sporting associations, children’s scouting organizations, welfare organizations, and company facilities or excursions.	Playing fields (golf/polo), organization camps and facilities, administration buildings and offices, recreation halls, dining halls, staff quarters, craft shops, counselor cabins, camper cabins, campfire circles, council rings.
Developed sport	Developed trails and facilities, individual and team sports, and racing (horse and automobile).	Hotel, lodge ski lifts, sports complex/facility, playing fields, and race courses.
Auto and Railroad	Trips to mining settlements involving tortuous narrow-gauge rail lines, for the interplay between natural scenery and feats of human engineering.* Automobile-focused recreation, along scenic byways with associated auxiliary facilities such as auto motels along travel routes and in towns. Between 1920 and 1930, manifestations of auto culture began to appear in large numbers in various communities, especially service stations, travel accommodations, and auto dealerships.	Auto parks, motor hotel/motel, motor court, garages, service stations, auto dealerships, bus depots, roads and roadbeds, and highways. Auxiliary facilities, such as service stations or passenger depots. Autos, trucks, tools, and other devices designed to maintain those vehicles as well as roadside litter.

\* adapted from Wyckoff (1999).

**Table 41.** Outdoor recreational land classes and associated characteristics (Brockman and Merriman 1979:126).

Land Classes	Setting	Developments	Activities
I: High density	Urban, but may be in national parks.	Intensive; exclusively for recreation.	Group-oriented sports, games, etc.
II: General outdoor	More remote than Class I.	Less intensive than Class I; includes picnic, campgrounds, hotels, stores, ski areas, etc.	Extensive; fishing, water sports, games, etc.
III: Natural environment	More remote than Class I or II; largest acreage class.	Limited; roads, trails, camping and picnic facilities; multiple-use management.	Related to natural environment; hiking, camping, boating, hunting, etc.
IV: Unique natural	Any place features are found.	Very limited; walks, trails, etc.	Study of natural features, sight-seeing.
V: Primitive	Remote or designated under Wilderness Act.	None to limited trails; usually no motorized equipment.	Wilderness hiking, camping, etc.
IV: Historic and cultural sites	Where sites exist.	Limited – walks, interpretive centers, etc.	Sightseeing, study of sites.

The archaeological manifestations of outdoor recreational activities are generally expected to be ephemeral, with little visible evidence and variable archaeological integrity even where extensive development has taken place. Parks and other landscape features set aside for public recreation are common landscape features of outdoor recreation and are to be found in both urban and remote locations. Often, parks were not constructed as isolated entities but were linked with a number of other facilities, trails, parks, and other recreational zones. Such complex linkages are evident in the design and use of the Lariat Trail, as described by Helphand:

Not only did it slither ropelike up Lookout Mountain, but the scenic drives literally roped the foothills and mountains into the Denver area, much as the Denver parkways did at the city scale. The system grew. Winter Park ski area and Red Rocks Park were added. (1991:260)

The concern for the establishment of parks and park systems in Colorado contrasts with the major landscape changes that occurred at the same time by mining, forestry, and urban developments, or as Helphand (1991:253) puts it, “as one kind of landscape was being changed, others were being set aside to remain unchanged.”

A summary of the National Register nomination study of the Denver Mountain Park System illustrates the types of features and sites and methods of evaluation for significance assessments. This example is pertinent because it demonstrates the complex interrelationships of the various categories of recreation outlined here. The Denver Mountain Park System was created between 1912 and 1941 and consists of 31 named parks and two scenic mountain drives, all within a 62-mile radius of Denver. Significant cultural resources include an intact Civilian Conservation Corps (CCC) camp, the Red Rocks Amphitheater, the Winter Park Ski Area, and the grave site of William Frederick Cody (aka Buffalo Bill). As with most recreational areas in Colorado, the plan for the mountain park system was to create a “civilized recreational experience and only a wilderness experience if people desired to leave and wander deeper into the parks lands” (Moss 1988:E-10). Therefore, numerous facilities and amenities were constructed that today can be considered part of the historical archaeological resource base. For example:

Even during the very early years, construction of buildings and structures was a high priority. By 1918, eight shelter houses, stone fireplaces, spring and pump houses and rustic picnic tables and benches existed. The Mountain Parks Commission planned pavilions, campgrounds, ball fields, golf courses and lakes as early as 1915 (Moss 1988:E-11).

By 1926, the Denver Mountain Parks consisted of 10,240 acres, including Summit Lake Park at Mount Evans at an elevation of 12,740 feet. The parks featured a golf course and fine clubhouse at Dedisse; a museum containing relics of Buffalo Bill, with his grave and Cody Memorial on the top of Lookout Mountain; an animal enclosure in Genesee with 76 head of elk, 40 buffalo, and 13 mountain sheep; playgrounds, shelter houses, comfort stations, and hundreds of fireplaces and tables scattered throughout all of the parks (Moss 1988:E-12).

Resorts and hotels are common and highly visible. One trend relevant to archaeology is that many existing buildings and structures were converted to accommodations and service facilities as the recreation and tourism industry expanded. For example, site 5GN3978 is a historic complex near Gunnison occupied from the early 1900s to the 1960s where archaeological investigations revealed three different components: a ranch complex, a small industrial area, and a resort complex (Archimede 2003). The researchers related the changing functions of the site to broader socioeconomic changes, stating that for many farmers and ranchers “great economic and material losses, marginalization of profit margins, and diminished market shares” induced “diversification in land use, skills, and products in order to maintain their traditional livelihood” (Archimede 2003:16). The evidence for a small-scale industrial operation, including a blacksmith workshop adjacent to the main barn, is interpreted as a trend toward economic diversification and adaptation at the farm. Similarly, establishment of the Cottonhurst Resort at the ranch is another example of diversification and adaptation (Archimede 2003:17). Many mountain ranches in Colorado supplemented their income by serving also as dude ranches, fishing resorts, and hunting lodges. This duality continues today as many ranches lease their ranch lands to private hunters and offer guide services at lucrative (some would say exorbitant) rates.

Resort communities, such as that at Twin Lakes in Lake County, had origins for industrial purposes, usually mining or ranching. As the original economic ventures failed or decreased in importance, community members frequently sought other means of financial support that often incorporated tourism or support of recreational pursuits, such as hunting and fishing. The Twin Lakes Historic District was listed on the National Register of Historic Places in 1974 (Emrick 1974). However, archaeological values were not considered in the assessment of its significance. It should be remembered that not all hotel or motel accommodations necessarily have had a recreational function. The only hotel in Colorado that has been investigated archaeologically is the Tremont House, which served as a business hotel in early Denver and later served as a residence hotel for workers and laborers (Carrillo and Jepson 1995). Although it was not a recreational facility, the work demonstrates the excellent data that can be obtained from historic hotel or resort sites, even in urban settings, and the interrelationship of numerous historical themes.

In contrast to communities that developed into resorts or catered to recreational opportunities in their area after their initial economic purposes had passed are communities that were developed entirely for recreational purposes. For example, Colorado Springs was founded by William Jackson Palmer as a resort destination at the terminus of the Denver & Rio Grande Railroad in 1871. The railroad expanded beyond Colorado Springs, and the town grew into more than a resort community, but key elements of that resort origin still exist both in architectural and archaeological form.

For communities where recreation was a focus, the accommodations themselves became attractions; for example, hotels such as the La Veta in Gunnison, the Grande Imperial in Silverton, the Beaumont in Ouray, the Teller House in Central City, the Antlers in Colorado Springs, the Hotel Colorado in Glenwood Springs, the Clarendon in Leadville, and the Beebe House in Manitou were prime destinations (Helphand 1991:206).

The significance of resort destination recreation on the historical geography of Colorado is summarized by Helphand in a narrative about the specialized resort communities that developed in concert with the ski industry:

The winter resorts of Vail, Snowmass village at Aspen, Keystone, Copper Mountain, Beaver Creek, Purgatory, and others were planned as resort “villages.” These modern villages are the centers of recreational environments but also represent a nostalgia for a more traditional community, something

that never existed in the Colorado Rockies. The prototype is found in the Alps, in a densely packed pedestrian mountain village of traditional architecture, easy access to the slopes, and communal outdoor space marked by campanile, clock tower, or church steeple. This prototype was consciously transported to Colorado's Alpine landscape. Some resort villages were built from scratch, whereas others have been grafted onto the remnants of mining towns, which have found snow, once a nemesis, to be a new source of wealth...Ski resort communities, with their beautifully sculpted ski slopes, have tried to expand their appeal to all four seasons, building golf courses, and pools and promoting their facilities as venues for conferences and summer music festivals. (1991:243-245)

Archaeological interpretive value for most of the built-environment features of outdoor recreation is limited in wild lands. Archaeological data available at most wild-land sites are likely to be scant but can be useful in assessing the period of use, manner of use (picnicking, camping, etc.), and the identification of function of particular elements of a site. Developed land sites have more potential for archaeological interpretation, particularly the more developed resort areas. Refuse from the occupation and use of resort facilities can be expected to provide a wealth of information about accommodations, socioeconomic status of guests, guest amenities and activities, and the function of various site features and components.

### **GOVERNMENT-MANAGED RECREATIONAL FACILITIES**

The numerous and wide-ranging government-managed recreational facilities include entire national parks, monuments, or parkways (based on historic boundaries), as well as picnic areas, trail systems, day-use areas (in state parks), scenic byways, and a host of recreational facilities listed in Table 42 (derived from McClelland 1998), below. In contrast to other types of recreation sites, government-related recreation can be expected to have a certain degree of structure, simply because government-managed recreational facilities are designed entities that are usually the product of extensive planning. The degree of organization and design has increased over time, in line with the growth of government bureaucracy and implementation of regulations. Information about the development and growth of particular National Park Service units are often available at a particular park, monument, or recreation area of interest or at regional offices. Information about areas considered as Park Service units, but not established, may be at regional offices or in Washington, D.C.

The national forests have been increasingly utilized for recreational opportunities since 1915, when Congress authorized the Department of Agriculture to begin issuing permits for the construction of recreational structures and facilities. Additional impetus was provided by the Highway Act of 1921, which funded access roads onto the forests (Hartley and Schneck 1996:13). As a result, roads were improved to key recreational spots, and official campgrounds were constructed. Colorado was a leader in recreational development. In 1919, the Forest Service hired trained landscape architect Arthur Carhart as its first recreational planner. The Squirrel Creek Canyon Campground and Cascade Trail he designed near Beulah in the San Isabel National Forest served as a model for later recreational development nationwide. An important part of his work was integrating road systems that connected nearby towns to the new recreational sites he designed. The first of these was recently designated as the Frontier Pathway National Scenic Byway between Pueblo and Wetmore in recognition of Carhart's influence in recreational development on a national level. The growth in the use of Forest Service lands for recreational activities also resulted in the development of summer home tracts on lands designated for use by the Forest Service through leases and nominally administered by the agency.

Archaeological deposits can be expected to be somewhat more concentrated at government-managed facilities because of the focused nature of the recreation. However, facility upgrading and maintenance may have reduced or obliterated evidence of earlier facility configurations and trash disposal policies, and routine cleaning may have created a setting devoid of artifacts. Where artifacts remain, archaeology may contribute information about periods of use, manner of use, and attribute functions. Because abundant artifacts may be present in certain situations, socioeconomic data may be pertinent.



**Table 42.** Major categories of government-managed recreational sites and associated features.

Category	Associated Features
Campgrounds	Tent sites, fireplaces, picnic tables, shelters, trash receptacles, paths and trails, steps and stairs, trees and shrubs, signs, comfort stations, amphitheaters or campfire circles, stores, view and vista points, water supplies, and utilities.
Lakes, ponds, or other water features	Dams, channels, beaches, boathouses, boat launches, spring developments, parking areas, fishing and boating docks, ice skating shelters, picnic shelters, and overlooks.
Organizational camps (social, educational, and welfare organizations)	Administration buildings and offices, recreation halls, dining halls, infirmaries, staff quarters, craft shops, nature buildings, water towers, washhouses and laundries, comfort stations and latrines, counselor cabins, camper cabins, unit lodges, paths and trails, campfire circles, council rings, roads and parking areas, lakes, ponds, or other bodies of water, dams, beaches, docks, playing fields, water supplies, and utilities.
Winter sports and ski areas	Ski slopes and trails, ski jumps, ski lifts, sledding hills, toboggan runs, parking areas, skating rinks, and ski lodges.
Other sport facilities	Golf courses (holes, fairways, caddy houses, clubhouses, ponds, and vegetation), tennis courts, playing fields, swimming pools, stables, and corrals.
Trails	Foot and bridle paths, nature shrines, signs and markers, shelters, stables, corrals, bridges, tunnels, revetments, culverts, switchbacks, guardrails, steps and stairs, benches, overlooks, parking areas, view and vista points, springs and watering places, comfort stations, and patrol cabins.

## HEALTH RESORTS

Colorado's healthful climate was noted from its earliest historic settlement, with a large number of individuals moving to the state as a way to ease or cure symptoms of illnesses. Colorado became a virtual sanatorium Mecca, as summarized by Helphand:

The high altitude, cool, dry air was recommended for those with tuberculosis (consumption), asthma, and respiratory diseases. It has often been noted that from 1880 to 1890, perhaps one-third of the settlers were health seekers. The salubrious climate was supplemented by hot mineral springs, spas, radium tunnels, and sanatorium communities. (1991:207)

Once new medicines for the treatment of respiratory diseases appeared, the immigration of health seekers largely ended, but the spas and sanatoriums remained destinations for tourists and the climate and open spaces of Colorado continued to entice visitors from across the country. The resort business was relatively small and patchy around 1900; however, by the 1950s, the "vacation industry" in Colorado was nothing short of massive, catering to a much broader clientele (Brockman and Merriman 1979:101). Archaeologically, this type of recreation is represented by health resorts and camps patronized by individuals interested in improving their health or living a healthy lifestyle. Many of the earliest health camps, characterized by dozens of tents and small cabins, were created for those suffering from tuberculosis and served as the predecessors of the respiratory medical centers of Denver (Helphand 1991:228). The camps were often segregated by ethnic or religious affiliation, such as the Jewish Consumptives Relief Society in Edgewater, the Evangelical Lutheran Sanitarium for Consumptives, and the Swedish American Sanatorium.

Health resorts and sanatoriums have excellent potential for adding important information about recreation and health care through archaeology. At health spas or sanatoriums, ailments may be discerned, as may the treatments in use, which can be compared and contrasted with standard medical care of the time. It may also be possible to correlate food remains with the current thought and fads in what was considered a healthful diet. Pioneering or experimental treatments for particular ailments may also be discerned archaeologically.

## **ENTERTAINMENT: CIVIC AND SEEDY**

Entertainment recreation is associated with a diverse array of sites and features that are lumped together principally because they represent a completely different form of recreation not commonly associated with the outdoors. Many sites within the entertainment category are expected to be historic structures or associated features within parks. Thus, at one end of the scale, an array of buildings, including theaters, resorts, fairgrounds, amusement parks, music halls, opera houses, and art galleries provided a certain type of “entertainment recreation.” The architectural manifestation of such sites is expected to be seen in standing buildings within historic districts of most towns and cities. Public spaces, such as parks, were also centers of civic recreation. Bandstands, playgrounds, ponds and lakes, and gardens all allowed citizens an opportunity to participate in local events, recreate informally, meet in a leisurely setting, or find individual solitude. In contrast to civic recreation sites and facilities, there are red-light districts, saloons, gambling halls, and opium dens: forms of recreation on the “seedier” side of entertainment. The red-light district in the mining town of Central City is an example of the dynamic relationship between civic and seedy within a historic community. There, the 1880 U.S. Census listed four women of the same residence on Pine Street as “house keepers,” but children were warned not to venture past the Catholic Church on that street. Although many residents complained of the presence of prostitution in their town, the infamous Madam Lou Bunch and her girls provided nursing care to many sick and dying miners during an epidemic, and today Madam Lou Bunch is honored with a celebration on the third Saturday in June, now an important part of Central City’s heritage. In Silverton, Blair Street, on which the “notorious” red-light district was situated, was renamed Empire Street on either end where “respectable” citizens resided.

The archaeological potential for civic entertainment is likely fairly low in most situations, particularly because the activities are not likely to be represented by extensive or very distinctive artifact deposits. Still, period of use and functional determinations may be possible for sites or site components. For “seedy” entertainment, the opposite is true: archaeological deposits can be expected to be quite extensive and distinctive. In addition, activities associated with “seedy” entertainment are not well documented in the historical record and provide rich ground for archaeological interpretation and enlightenment. Because these activities took place largely in urban settings, archaeological investigations will be intimately linked with the community theme. Still, less organized versions of these activities may be represented in camps, ordinary residences, or some generalized businesses in the form of social drinking and friendly games of chance.

## **ORGANIZATIONAL: SOCIAL AND INDUSTRIAL RECREATION**

In general, organizational recreation overlaps or may be considered a subcategory of outdoor recreation on both wild and developed lands. Organizational recreation includes

- Outdoor activity clubs (skiing, hiking, camping, boating, etc).
- Private and semiprivate social, educational, and welfare organizations.
- Corporate or industrial recreation.

Most sites are expected to be more commonly associated with government-managed recreational lands and facilities, and the archaeological characteristics of these types of activities are listed in that section. The archaeology of generalized activity clubs is seldom addressed, perhaps because they often resemble the generalized types of group-level outdoor recreation. One characteristic of organizational recreation sites that may be evident archaeologically is a certain degree of similarity in structure, as Brockman and Merriam (1979:96) state, “People in organizations which are structurally similar, tend to show similar attitudes and behavior in spite of differences in organizational goals or in their individual personalities.”

Industrial recreational programs were commonly established by managers as a “means to foster positive, co-operative management-labor relationships” and sometimes as a way to “quiet or dispel labor unrest” (Forbes 2001:66). Companies sometimes organized employee outings to foster cohesiveness and goodwill. Corporate or industrial recreation often utilizes recreational facilities owned or rented by the corporation, such as summer retreats, campgrounds, country clubs, and sporting facilities, such as for basketball, bowling, and tennis. In general, industrial recreational facilities are close to the workplace or are

accessed with relative ease, the company or club provides equipment for the participants, and costs are minimal or subsidized.

In recent years, corporate recreation has become more pervasive and is sometimes referred to as “commercial recreation” or is euphemized as “leisure services management.” As such, corporate recreation can come in five forms:

1. For-profit resorts, theme parks, private recreational businesses (golf courses, ski resorts, etc.), and health and fitness clubs.
2. Corporations donating money toward construction or improvement of recreational facilities simply for goodwill or a positive corporate image.
3. Corporations taking on roles as concessionaires either by design or as business opportunities to handle management of facilities on behalf of public agencies, often because such tasks are beyond the expertise of the agency or because increased use or lack of public funding has not allowed the agencies to maintain or administer facilities commensurate with the level of use.
4. Corporations promoting and lobbying for certain recreational uses in order to expand the use of products they manufacture or supply (such as snowmobiles and ATVs).
5. Corporations promoting or directly facilitating recreation for employees to improve their health and sense of well-being so that they are healthier, happier, and more productive employees. This activity might include building gyms or offering discounts to employees in recreational facilities or programs to encourage participation in healthful recreational activities.

Organizational recreation might be difficult or impossible to recognize archaeologically unless it is focused at a facility specifically designated for that use. In such instances where a specific organizational facility exists, archaeological data of importance may be present that can be used to compare and contrast organizational recreation with other types of recreation. Much of corporate recreation is a recent phenomenon of modern populations desiring to be entertained rather than seeking self-directed recreation. However, the roots of current recreation as business extend sufficiently back in time that archaeological sites may provide both insight and opportunity for social reflection and commentary.

## **DEVELOPED SPORT**

Developed sports in Colorado have a deep and complex history. Many early sporting activities grew from skills required from the workplace or for everyday survival. For instance, rock-drilling mining contests demonstrated workplace prowess of miners. Similar workplace skills were demonstrated in fire department competitions. Other sports, such as horse racing, ice skating, and foot racing that began as informal recreational pursuits have developed as more formal recreational pursuits with built facilities where a sufficient population base exists. Many recreational pursuits were introduced by immigrants, and their origins may be tied to particular ethnic groups. For instance, gymnastics was introduced by Germans, wrestling by the Cornish, track and field events by Scots, and skiing and ski jumping by Scandinavians. Participation in some sports, such as baseball, was a mechanism whereby recent immigrants were able to more easily integrate into their adopted society (Whiteside 1999).

Unlike traditional outdoor recreation activities, such as hunting and fishing, developed-sporting recreational activities, most notably skiing, have changed the landscape, as Helphand notes:

Skiing is only the most dramatic example of a landscape designed for recreation. Each recreational type spawns a recreation culture of users and advocates. There are skiers, rafters, white-water enthusiast, bikers, hikers, hunters, balloonists, and birders. All of these groups, making their demands on the landscape, are sensitive to different aspects of landscape change. (1991:213)

As outdoor recreation in Colorado grew in popularity, many sporting activities and associations were established, particularly those focused on mountain climbing and winter sports, such as skiing. One impact the growth of such sports has had on the history of recreation was the possibility of year-around recreational activity and, perhaps more important for many, year-around business. As Helphand states, “Snow, which

represented hardship and was a burden to be removed, became a bellwether of progress, and each fall its arrival is eagerly anticipated” (1991:211).

Skiing is almost a sacred pastime for Coloradans. The state was one of the inventors of the American ski culture with a heritage as old as the mining industry, as Wyckoff summarizes:

Recreational skiing was locally popular as early as the 1880s around snow-rich mining towns like Gunnison and Crested Butte, but it was not until after 1910 that there was a sustained increase in winter sports clubs and carnivals in the Colorado mountains. Before 1920, skiers organized local clubs and competitions in Steamboat Springs, Silver Plume, Hot Sulphur Springs, Estes Park, Dillon, and Leadville. (1999:87)

However, skiing did not become a form of mass recreation until the 1930s with the development of a transportation technology offering easy access to mountain slopes (Coleman 2004). As Helphand notes:

The first rope tow was built in 1937 on a Pike’s Peak hillside by the Silver Springs Ski Club of Colorado Springs. This was followed by T-bars, V-bars, and Poma lifts. In 1939 the first chair lift was constructed at Gunnison Pioneer Ski Area, using a modified ore tramway system. Chairs for two, three and four persons followed, and with each new development, speed and capacity increased. Gondolas were first used at Vail in 1962, taking the name of Venetian boats. (1991:212-213)

Remains of early skiing facilities are found on occasion, complete with the remains of snack bars, warming huts, and other amenities. It is estimated that there may be remains of up to 75 defunct ski areas in Colorado. Many of these have reached historic age, and others will quite soon. A good archaeological example of an early ski area is the Gun Club or Practice Ski Area near Gunnison (5GN2407). It was the first ski area constructed in the area, either in the winter of 1936-37 or early in 1939. The Gunnison County Ski Club was formed to secure WPA funding for its construction; it was constructed with WPA and volunteer labor. The ski tow was powered by a six-cylinder Buick engine. The ski tow cable and low wooden support structures are still in place, as is evidence of a snack bar. Artifacts suggest that the ski area was used through the 1940s and may have persisted into the 1950s (Chandler and Reed 1993:81).

Other developed sports include baseball, football, basketball, horseracing, ice skating, hockey, roller skating, gymnastics, and boxing. Several of these, such as football and basketball, began as almost exclusively the domain of schools and colleges. Others with more informal recreational roots have seen extensive facilities development in towns and cities across the state as populations have grown and recreational demands have demanded them. Many sports have always had a spectator aspect to them, culminating in the modern era with professional sports teams and the construction of large stadiums (Whiteside 1999).

Archaeology may be able to contribute to our understanding of developed sport recreation facilities. As with other outdoor recreational activities, archaeology may be able to provide information about the period of use or function of particular features of a facility. Where it may contribute the most is in providing socioeconomic information using discarded materials at such places as ski area snack bars.

## **AUTO AND RAILROAD TOURISM**

The railroad was integral to the earliest forms of recreation in Colorado, providing access to mountain sites (including both scenic wonders and mining operations), and even became a tourist attraction in itself. Sprague summarizes the early history of railroad-based recreation:

The railroad companies wasted no time providing luxury equipment to entice tourists to their trains. Blushing newlyweds boarded Pullman palace sleepers and pinned their marriage licenses outside their berths before retiring. The menus of diners offered quail and antelope and champagne. From the verandas of rococo observation cars ladies and gentleman gasped in terror as the train rattled over spindly trestles on the Cripple Creek run or groaned up Marshall Pass en route to Gunnison, or up Hagerman Pass short of Aspen, or over Lizard Head above Rico. The Georgetown Loop to Sliver

Plume was recommended highly for scaring people to death and so was the circling Cumbres Pass trip from Alamosa to Durango, during which engine and caboose passed one another three times while gaining altitude for the crossing. (1976:140)

Such was the lure to capture the tourist market that “surveyors for the ubiquitous railroads became adept at finding medicinal hot springs along their rights-of-way, which gave the lines more plush hotels to serve, and more bathhouses where the ailing could boil the poisons from their systems” (Sprague 1976:141). The coming of the railroad induced many mining towns to replace rustic log inns with luxury hotels (Sprague 1976:140). Except for accommodations at prime destination points, archaeological manifestations of railroad recreation will be largely limited to sites and features associated with the railroad network itself (i.e., recreational opportunities along the lines). The accommodations, however, may contain important archaeological data relevant to the socioeconomic status of its visitors and the opulence the accommodations attempted to present.

In contrast to the largely late nineteenth-century historical geography of railroad-based recreation, established routes and associated facilities of twentieth-century automobile recreation should be recognizable and persistent and have archaeological manifestations of greater degree of structure and higher visibility. Highway-facing orientation of commercial districts in towns reflects the importance of automobile transportation and represents a new form of geography where automobile service and other facilities oriented to independent transportation were integrated into and dictated the arrangement of commerce. Even in the earliest period of auto travel, the effects of automobile recreation and “tin can tourists” were evident across the landscape. For example, the first autocamp (forerunners of the campground and recreational vehicle park) in the state was constructed as Denver’s City Park in 1915. The Overland Motor Camp followed in 1920 and was heralded as the “the Manhattan of auto-camps,” covering 160 acres along the South Platte River; almost 60,000 campers had stopped there by the summer of 1923 (Helphand 1991:228).

Brockman and Merriam provide a succinct summary of the development and effects of automobile tourism:

Widespread diffusion of automobile ownership through the population of the United States, for example, led to patterns of vacation travel which fostered construction of new forms of tourist accommodation. In the 1930s, in the Western states, the forerunner of the motel came in to being – clusters of overnight frame cabins, usually without private plumbing at first, and sometimes even requiring tourists to provide their own bedding. Before long, the signs at the side of the road began using the word “modern” as a euphemistic intimation that a group of these cabins had inside plumbing. By the 1960s, the erstwhile “cabin camp” had evolved into more or less luxurious motels in which tiled bathrooms and carpeting were ubiquitous and television and swimming pools nearly so. Attractive restaurants were often part of the premises, too. (1979:101)

Helphand goes a step further in describing the growth of the “automobile landscape” across America:

The highway strip linking road to town is a national landscape type. It has evolved to care for the needs of the vehicle – gas stations, car washes, auto showrooms – and to cater for the desires of the traveler – motels and drive-in functions of all types, theaters, banks, restaurants, supermarkets, drugstores. Businesses cluster in small pockets and in great malled enclosures. All are identified by abundant and accessible parking. With the exception of local businesses, the Colorado roadside is largely the product of national trends: common highway engineering criteria, franchising, and the benefits of media advertising. (1991:206)

Because recreation during the automobile era has had such an impact on the layout and composition of the affected communities, the archaeology is intimately linked to the community theme and all of the social and economic implications that have come with community development.

## **Representation of Site Types in State Database**

### **SITES WITHIN THE THEME RECORDED IN THE STATE**

An initial analysis of the Colorado OAHP site database identified only 27 properties relating to the general theme of recreation recorded as historical archaeological properties. Further searches of the Compass database using keywords revealed hundreds of other recreational sites not accounted for in the initial database search. This process demonstrates how intertwined recreation is with other historic themes, usually as a subtheme, and clearly shows that the number of sites associated with the recreation theme cannot be determined at the present time. It is also readily apparent from the Compass database that those sites that can be identified as having recreational associations cannot be clearly demonstrated to have had their archaeological values considered. Many recreational sites in the database are hotels and other buildings that have been recorded for attributes other than archaeology. Others are cabins, campgrounds/campsites, picnic areas, ranch-related recreation (dude ranches), golf courses and structures associated with golf courses, gymnasiums, ski areas, hot springs, amphitheaters, recreation centers, a ball field, a pavilion, a casino, a privy, lakes and reservoirs, town and city parks, trails, trail shelters, roads, saloons, sanitariums, a national park, the boundary of a national park, and an art studio. Although, the site types listed above are interesting, organization of types as outlined in Table 40 (page 431) is more informative as a basic framework for classification. Also, terminology such as cabin, camp, privy, road, trail, and resort as the only descriptors are so general that accurate categorization is not possible.

### **ADEQUACY OF RECORDATION AND EVALUATION**

The large number of sites of a recreational nature identified in the OAHP database shows that recreation sites are frequently encountered, but recreation as a primary historical theme is not often formally recognized. Furthermore, the archaeological values of the recorded sites, let alone the potential for archaeology to illuminate the role of recreation at those sites, have not often been considered. Recreation is likely a minor subtheme at a large number of sites but is not often included as a thematic component because recreation is recognized as being a typical component not requiring specific mention. Typically, at excavated sites, recreational artifacts represent a small percentage of the recovered artifacts and frequently go unmentioned or are only mentioned in passing.

In short, recreational sites are commonly classified under some other historical theme and recreational components of sites are seldom mentioned because recreation is either a given or overlooked because of other overriding themes. In contrast, standing buildings with architectural or other historical significance (hotels and civic buildings) and town and city parks are more commonly recorded as recreational sites. For recreational sites that are largely archaeological, their frequent ephemeral nature makes secure dating difficult. Few of the archaeological recreational sites in the state database have dates associated with them, suggesting a certain degree of difficulty in linking generalized recreational sites and features to temporal periods. This problem may be because of the amorphous nature of recreational features (such as trails and camps) and also the limited amount of material culture that is generally left at such sites as a result of the transitory nature of recreational activities and periodic cleaning to which camping sites and other recreational areas are usually subject.

Many of the recreational sites in the state's database are named, yet few have estimated dates of construction or estimates of the periods of use. This suggests an absence of background historical research being done for these sites because named sites are likely to have historical information available concerning their establishment, especially for those constructed on public lands. Nevertheless, a more systematic approach that establishes sites and features to specific recreation categories, such as those listed in Table 40 (page 431), provides a more effective means of interpretation and analysis even in the absence of any temporally sensitive artifacts or historical information.

The more pervasive and recognizable forms of recreation date after the mid-1940s. However, sites from this period have evidently not been recorded or assessed for significance, presumably because they have

not been considered historic. For example, site 5BL4931, the historic Chautauqua Ski Area, built in 1947 and 1948 at the mouth of Gregory Canyon, consists of a broad trench parallel to the fall line of the slope (ski jump) and the remains of a ski rope tow consisting of metal rails, posts, and a structure supporting a rope pulley. The work was initiated by Harris Thompson and Steve Bradley and volunteers organized by the University of Colorado ski coach Norman Winchester. The rope tow and ski jump were sold to the Boulder Recreation Department in 1950, but the facility was subsequently closed because of vandalism and lack of snow. Interestingly, the eligibility recommendation (completed in 1994) states: "Site may be a contributing element to a historic district based on a theme of recreation. Site is not yet 50 years old, but will be in 1998" and the site was recommended as not eligible for inclusion on the National Register. It is expected that a number of recreation-related features and sites from the late 1940s and 1950s have not been assessed because of their relatively recent period of use; others will need to have their eligibility revisited as they reach 50 years in age.

## **Potential for Sites within the Theme to Exist and Be Recognizable**

A considerable number of historic sites relating to recreation are expected to have been lost or to be unrecognizable because of development and reclamation projects, as McClelland notes:

Because the National Park Service made efforts to eliminate the traces of old roads, home sites, and camps through landscape naturalization projects and reclamation projects, the sites of historic activities predating a park's founding or associated with road construction or CCC occupation may have little of no surface remains. (1998:498)

For example, site 5LR9775 is the remains of the Boulder Field Shelter Cabin and Barn (locally referred to as the Boulderfield Hotel) on Longs Peak in Rocky Mountain National Park. The shelters were constructed in 1926 for the protection of hikers from the unpredictable weather conditions on Longs Peak. The buildings were removed in 1959 by the National Park Service, and the entire site was cleaned up, leaving only the foundations and very few artifacts. Indeed, only two historic artifacts were recorded during a visit to the site in 2000, both 3-inch-diameter iron rings used to temporarily tie horses to a large boulder along the trail about 100 feet from a former cabin.

Another example is site 5EP2883, a Forest Service picnic ground in Pike National Forest. The site consists of a toilet, picnic tables, post-reinforced water faucets, sunken trash receptacles with reinforcing rockwork, and a coursed flagstone culvert crossing. Also present are several pathways connecting each picnic site and two groves of planted spruce trees that provide shelter. The campground was constructed in the late 1950s and 1960s. Very little artifactual debris is evident at the site, presumably because the site was being periodically cleaned and the material taken elsewhere for disposal.

It may be quite difficult to recognize sites and features specifically associated with recreation because the traces of the recreational activities may not be easily separable from other activities. For instance, recreational camping may not be easily separable from camps associated with sheep herding.

## **Interrelatedness of Theme with Other Topics or Themes**

Many recreation-related sites and properties are expected to also be associated with other themes, and, indeed, many sites may have a more intimate association with other themes, such as federal government, communities (e.g., resort towns, municipal parks, and theaters), linear resources, and industry. The interrelatedness of recreation with other activities or as a successor activity may obscure the relevance of recreation to a site. For instance, the town of Breckenridge has a historic legacy, rendering it thematically "two towns:" one as a mining town and the other as a ski village. When considering reuse of an old dredging pond for ice skating, both mining and recreation themes may apply (Helphand 1991:243). Some of the more prominent linkages are noted by Helphand:

Aspen, Breckenridge, Crested Butte, and Telluride, all former mining towns, were resurrected by skiing. Snow was “white gold”, and a new rush was on, only now with a double meaning of riches and thrills. Mountain development, lift technology, improved equipment, highway access, and the marriage of automobile and the ski-rack all contributed. (1991:213)

The relationship between the federal government and recreation is evident, with most recreational lands that are important for various forms of recreation administered by public agencies (federal, state, country, municipal, and district or regional park authorities). The history of the federal government’s involvement in the changing cultural landscape of Colorado and recreation in general is outlined by Wyckoff:

As the amenity value of select mountain environments and locations increased late in the nineteenth century, the federal government placated preservationists and resort operators, although in most cases the forces of recreational development won out over those of wilderness preservation. (1999:100)

Federal agencies have been engaged in road building in the many national forests and parks, and also in the development of hiking trails. These are all projects that facilitated the development of the recreation and tourist industries. In some instances, recreational facilities were constructed at government facilities such as CCC camps. During World War II, the U.S. Army maintained a training camp at Camp Hale near Leadville, which ultimately contributed to the development of new ski courses and gave the sport a boost in the postwar years. With the development of an aviation industry, the federal government developed various programs of assistance to the industry and took on the role of constructing and improving airports in the later 1930s as air travel grew in popularity. Improved air transportation has boosted recreational use of the state.

Federal designations of public lands and establishment of national parks had a direct influence on the recreation industry. For example, the creation of Rocky Mountain National Park in 1915 set aside a 350-square-mile tract of remote alpine country between the resort centers of Estes Park and Grand Lake. The park contributed to the development of the recreational industry in the region, as Wyckoff accounts:

The area’s scenery and mountain wildlife were well known in the late nineteenth century. Tourists thrilled at climbing spectacular Longs Peak, and numerous nearby resorts and dude ranchers catered to the camping and recreational needs of a growing number of visitors. By 1900 the mammoth and luxurious Stanley Hotel in Estes Park was open, and the region offered accommodations that ranged from the very rustic to the ultra-plush. (1999:98)

The development of recreation-related activities and infrastructures in Colorado has had a major impact on the state’s social and economic history, perhaps best exemplified by the town of Colorado Springs. With the scenic wonders of Pike’s Peak, the Garden of the Gods, and the mineral springs at Manitou, the town was founded as a resort community by William Jackson Palmer in 1871 as a destination for his Denver & Rio Grande Railroad. As the city developed, it became a major regional market and supply center, and the residents were integral in the opening of the Cripple Creek Mining District. Still, recreation was an important element of its economy and remains so today, with the addition of the Pike’s Peak and Manitou Cog Railway, Cave of the Winds, Seven Falls, Manitou Cliff Dwellings, and Santa’s Workshop/North Pole attractions. Recreational activities in households and in civic settings are clearly connected to the community theme. Furthermore, recreational activities considered to be “seedy” and conducted in reclusive or hidden settings most frequently took place in urban settings and are underreported aspects of community life.

The relationship between the historic mining industry and recreation is intricate, as summarized by Wyckoff:

By the early twentieth century, Colorado’s reputation as America’s Switzerland complicated both the image and reality of its mountain landscape. Although mining’s impact certainly dominated many mountain settings, a competing vision of the high country was created by and for tourists. This new form of resource consumption led to the creation of such settlement nuclei as Estes Park, Grand Lake, and Glenwood Springs, and it modified the function of many older mining settlements such as Georgetown, Ouray, and Aspen. Infrastructure was added, accommodations were provided, and



attractions were invented to produce a new visual scene and tourist experience in the Rockies that resonated with evolving national predilections. (1999:88)

Transportation and recreation are associated for obvious reasons, beginning with the extensive network of narrow-gauge railroad lines constructed to serve the mining industry and immediately utilized by the earliest tourists and travelers. Wyckoff notes that “without the ease and convenience of the railroads, travelers would have halted their westward journeys in urban hotels and perhaps would have limited their mountain experiences to day hikes and short stage trips” (1999:81). Accessing productive mining areas was the principal goal for railroad and automobile road expansion into the mountains, but promotion of the scenery and outdoor opportunities as tourist destinations was not lost on the builders. Oftentimes, the routes themselves became attractions (Helphand 1991:199).

As the recreation industry expanded, it created new opportunities for business, such as the manufacturing and selling of skiing equipment and the development of ski resorts. Furthermore, the recreation industry created pressure for the reallocation of public lands for new uses (Brockman and Merriman 1979:101).

The act of recreation may have deeper meaning to individuals and groups. Recreational pursuits and activities often have significance to group identity and may be socially beneficial. For many groups, including Native Americans, collecting wild plant foods, hunting, and fishing can provide economic benefits by supplementing store-bought goods but often is more important for enabling people to engage with their historic or social landscape. What appears on the surface as a recreational activity often has deeper meaning in articulating group identity, as in educating children through interaction with adults. This may be of particular importance to Native American groups displaced from their traditional lands and to residents with a long-term connection to a particular place.

## **EVALUATIONS OF SIGNIFICANCE**

### **Relationship to the National Register of Historic Places Criteria**

#### **AREAS OF SIGNIFICANCE**

Numerous recreation and tourism-related sites within Colorado are important for attracting significant national and international attention and thus contributing to the economics and promotion of the state. In most cases, sites associated with the recreation theme will be found to be significant because of broad historical importance and distinctive architectural attributes under National Register Criteria A and C, and on rare occasions under Criterion B for an association with an important person, such as William Jackson Palmer. National Register-eligibility under Criterion D will frequently be in support of one of the other criteria, but occasionally a site may be considered applicable on its own merits if sufficient archaeological deposits are present for important information to be gained about the historical role of recreation or can be used to meaningfully characterize its participants. Artifacts, such as toys, game pieces, drinking glasses, musical instruments, and sporting goods, may reflect recreational activities but do not necessarily need to be present for the recreation theme to be applicable. Rather, it is the combination of the setting, history, and material culture of a site that will enable archaeological significance under the theme to be ascribed.

Entire parks may be considered eligible as historic districts under the recreation theme. Study of recreation also has the potential to document significant shifts in society, such as changing social values about work and leisure time and also toward the environment. At a broader level, the theme represents shifts in culture and economy, new mountain settlement patterns, and distinctive landscape features (Wyckoff 1999:79). Recreational lands and associated facilities provide structure and identity to urban and rural landscapes (Helphand 1991:255). Thus, documenting the changing, physical manifestation of land-use systems and cultural landscapes can be a major area of significance.

It should be remembered that at most archaeological sites, recreation is manifested in some manner that can be interpreted. Usually this manifestation is in the form of personal or small group recreation, such as playing music, gambling, playing games (usually children), or drinking alcoholic beverages. In most situations, recreational artifacts represent only a small part of the material culture recovered, insufficient for significance of a site as a whole to be ascribed. For sites where more direct associations with recreation are recognizable, interrelated areas of significance to be considered are community planning and development, conservation, education, health/medicine, industry, landscape architecture, and transportation.

Recreational sites may be considered important to community planning and development when recreation has served as a primary impetus for the layout and design of a community or a particular form of recreation was important enough to the economy of the community for it to shape its growth. Archaeology can play an important part in the interpretation of the role of recreation by providing data relating to historic functions of entities within a community centered around recreation. Also it can document components of a recreational facility that either no longer retains highly visible elements or has grown and changed so that the original layout and function of the facility is no longer readily apparent.

Recreation has played an important role in conservation in that familiarity with and appreciation of the outdoors has stimulated enhancement and preservation of outdoor areas. This comes full circle to create more interest in recreation. For instance, hunters and fishermen have had a strong interest in protecting and enhancing wildlife and stream habitat so that hunting and fishing opportunities are maintained or improved. The economic viability of certain communities is often keyed to the availability of wild lands that draw the tourists on which they depend.

Recreational facilities often incorporate education as part of their program, utilizing the natural setting as a draw and source of information to present to interested tourists or program participants. Nature trails, historical displays, and other facilities serve both to present information and to entertain. Archaeology can frequently provide information suitable for education of the public through recreational venues as well as educate the public about historical recreational uses. Recreation camps that serve to educate young people are common facilities in Colorado; some may be amenable to archaeological investigation to provide data about the educational processes undertaken there. Along these same lines, recreation has served as a means to promote conservation of natural resources. Recreational enjoyment of the natural world has been an important part of why some of the more spectacular parks and monuments have been set aside. It is possible that archeological investigations may be important in interpreting sites relating to conservation and management of natural resources through preservation for recreational purposes.

Many recreational facilities in Colorado served the dual purpose of being health spas for relaxation and medical treatment. Archaeological investigation of such places may provide important information about the manner of health treatment including medicines in use and diet, medical ailments, and the layouts of health resorts and the functions of associated structures and features.

Recreation in Colorado has been an important industry from nearly the time of initial settlement. Archaeology may contribute to the understanding of the recreation industry in specific places and at specific times in history, providing data pertinent to specific aspects of the industry or for comparisons of disparate elements. For instance, important information may be gained through the archaeological investigation of early resort accommodations that can be contrasted with later automobile-based accommodations to show differences in demographics and socioeconomic status between guests. Archaeological data may be able to provide important information pertaining to the rise, economic impact, and role of dude ranches, fishing resorts, and hunting lodges in retaining economic vitality in rural areas. Recreation as a theme may also be important in assessing the role of corporations in the development, management, promotion, and use of specific facilities and the landscape as a whole, thereby facilitating social awareness and commentary that is meaningful to today's citizens.

Recreational facilities in the mountains of Colorado were frequently constructed in ways that were purposefully aesthetically pleasing and may be considered significant for their association with landscape

architecture. Elements of layout and design can frequently be identified, delineated, and interpreted through archaeology when they are no longer readily visible.

Transportation has been a vital link in the ability of individuals to pursue recreational activities in Colorado. Archaeology's role in exploring transportation as a theme relative to recreation may be most productive at facilities along transportation routes. Transportation systems themselves have become a tremendous tourist draw, as exemplified by the Durango & Silverton Narrow Gauge Railroad, Cumbres & Toltec Scenic Railroad, Georgetown Loop Railroad, Trail Ridge Road, Gold Camp Road, and numerous scenic byways in the state.

## **PERIODS OF SIGNIFICANCE**

Periods of significance will be based on associations with particular historical trends. These may be quite specific and associated with a particular place or be rather broad based and associated with larger cultural or social trends. For example, some sites may be considered important because of their association with local planning and government conservation movements such as the City Beautiful Movement of the early twentieth century. Others, such as a flourishing red-light district, will be associated with mining towns at the height of mining prosperity. Any recreational activity that can be linked with rail transportation and tourism from the 1870s through the 1920s is of potential significance. Early automobile tourism from the 1920s, and associated special facilities for motorists that changed over time, are also of likely significance. Linking a site, feature, or material remains to the growth of developed winter and summer resort communities and towns delineates another period of significance. It is possible that a site may have a long period of occupation or use but have a more restricted period of significance for the recreation theme. For instance, a ranch may have been established in the 1890s but was used as a prototype dude ranch from 1924 to 1936. In 1936, the site began to be used as a fishing lodge, and, in 1950, it returned to a cattle-ranching function. Although recreational use of the site dates to the 1924 to 1950 time period, the site's use as a dude ranch may be concluded to be the activity of historical significance. Therefore, the period of significance for the site would be 1924 to 1936, and archaeological materials from that period may be considered important to understanding the use of the site from that time.

## **INTEGRITY**

As with all archaeological sites, integrity of location, materials, and association are most important. Depending upon the nature of a recreational site, but particularly for sites where architectural elements exist or a specific setting is the reason for being, significance may also hinge on integrity of design, setting, materials, workmanship, and feeling.

## **RESEARCH NEEDS**

### **Quality of Recovered Archaeological Data Relevant to the Theme in Colorado**

Archaeological data relating to recorded recreation sites is limited. Seldom are such sites considered for their archaeological values. No sites are known to have been excavated because of values pertaining to the recreation theme. Archaeological data pertaining to recreation from excavated contexts has come as a byproduct of excavating sites with residential components, and the theme is frequently given only passing notice during analysis and reporting. Consequently, virtually no archaeological data exists for the theme. The recreation theme is represented by quite a variety of site types for which well-thought-out archaeological research should be a priority.

## **Potential for Good Quality Archaeological Data to Exist for the Theme at Sites in Colorado**

In general, the archaeological potential for most recreational sites is expected to be low, given the largely ephemeral nature of activities and the focus on structures and buildings. However, resorts, spas, and lodging accommodations, particularly from the railroad era, can be expected to contain excellent data. At the level of landscape, there is more opportunity to document spatial configurations of activities, amenities, and the complex link between sites and features within the theme.

### **Known or Potential Sites within the Theme in Colorado That Should Be Sought, Reexamined, or Reevaluated**

Although few known or potential sites can be identified for a reexamination or reevaluation, a number of general research topics are suggested:

- Identification and analysis of material cultural items associated with recreation over time and across space (e.g., comparisons between early “wealthy” recreation versus subsequent increase in middle-class recreational activities).
- Investigation of the effects that increased recreation and tourist-related activities have had on local economies, such as changes in patterns of consumption.
- Documentation of the growth of the recreation and tourism industry by devising a temporal framework of development within which sites or districts can be placed. This would assist in understanding how perceptions of what facilities and amenities were considered necessities as tourist and recreational destinations changed through time.
- Examination of the impact of the automobile and railroads on tourism and investigating how material evidence is represented.
- Identification of resources that can substantiate the role of the automobile in a socioeconomic revolution in lifestyles of residents in various towns and communities. This step would include how the automobile affected the spatial arrangements of towns and the growth of local tourism.
- Examination of social and economic transitions in “tourist” towns.
- Investigation of temporal patterns of tourism or fluctuations linked to regional or national events.
- Investigation of the role of recreation-related sites in documenting changing social values over time, including social attitudes toward work (changing labor and work situations) and the environment.
- Documentation of the changing physical manifestation of land-use systems and cultural landscapes with the growth of the leisure industry, such as the transition of a mining district to a ski resort.

## **CHAPTER 10. GOVERNMENT**

**David R. Guilfoyle, Jonathon C. Horn, and Burr Neely**

### **DESCRIPTION AND BACKGROUND**

Actions and policies of federal, territorial, and state governments have shaped the historic landscape of Colorado through land use and management. Archaeological sites directly related to government activities are present throughout the state and can add considerable information about the activities themselves or the effects of policies implemented by government. Principal topics under the government theme are exploration, land survey and distribution, Indian agencies, U.S. and state military, land management, public works and public service, and transportation.

#### **Exploration**

Government influence in Colorado predates the gold rush of the 1860s, in the form of federally sponsored explorations by Zebulon Pike, Stephen Long, John C. Fremont, John Gunnison, and John N. Macomb. The Pike Expedition entered Colorado in 1806 and the group was arrested by the Spanish in 1807 in the San Luis Valley. They intended to explore a portion of the Louisiana Purchase from newly acquired France, but they strayed into Spanish territory. Their exploration did not find the potential of the Colorado plains encouraging, but it did entice attempts to open trade with the Spanish of New Mexico. This effort was premature and resulted in arrest and confiscation of goods. The Long Expedition entered Colorado in 1820 by way of the Platte River, then headed south along the base of the Front Range to the Arkansas River. The expedition described the Colorado plains as desert land suitable only for grazing, promoting the idea that much of the land west of the Mississippi River was unsuitable for agriculture. John C. Fremont conducted expeditions through the mountains of Colorado between 1842 and 1854 in attempts to find a practical route to Oregon and California. His 1848 expedition was the first attempt to find a suitable route for a transcontinental railroad across the state. It ended in disaster in winter snows in the San Juan Mountains. The Mexican-American War stimulated additional exploration of Colorado. In 1844, anticipating that a war might break out with Mexico, General Stephen Watts Kearny carried out reconnaissances between Fort Laramie, Fort Leavenworth, and New Mexico. In the 1850s, interest in a transcontinental railroad was quite high, and several exploration parties of the U.S. Army Corps of Topographical Engineers were sent to explore the viability of various routes. An expedition through Colorado was led by John W. Gunnison in 1853. It passed through the San Luis Valley and followed the northern branch of the Spanish Trail over Cochetopa Pass into the Uncompahgre Valley and then northward to the Grand Valley into Utah. Fremont's final journey through the state was on the heels of the Gunnison expedition and along the very same route (Athearn 1985:39-43). Conflict with the Mormons, beginning in 1857, culminating in what has been called the Mormon War, provided the impetus for the U.S. government to send exploratory expeditions to identify practical routes to reach Utah from several points. The Macomb Expedition was one of these parties. In 1859, a party under the command of John N. Macomb was sent out from Santa Fe and followed the Spanish Trail northwestward through the southwestern corner of the state into Utah.

The exploration period was succeeded by major scientific investigations, such as those conducted during the 1870s by the predecessors of the U.S. Geological Survey, that not only provided a basic geography of the region, but also identified potential sites for commercial mining. In 1874 and 1875, government

surveyors under the direction of Ferdinand V. Hayden surveyed the region and developed the first set of detailed topographical maps. They also reported on the geology, flora and fauna, and prehistoric ruins in the area. Federal reports over the last few decades of the nineteenth century focused on particular mining districts, providing prospectors and investors with data on potential ore veins (Wyckoff 1999:90).

## **Land Survey and Distribution**

The discovery of gold in Colorado in 1858 that brought a subsequent influx of miners, followed quickly by merchants and settlers, quickly required some sort of governmental organization. Following the Mexican-American War, all of Colorado was clearly within the domain of the United States. Until the establishment of Colorado Territory in 1861, the western portion of the state was considered part of Utah Territory and the eastern half of the state was divided among the territories of Nebraska, Kansas, and New Mexico (Ubbelohde et al. 1972:50). Surveying of the state to facilitate settlement was a major undertaking of the federal government. This work was conducted by the U.S. Surveyor General's Office of the General Land Office (GLO) using the Public Land Survey System (PLSS), which uses a system of township, ranges, and sections. They initially surveyed base meridian lines from which township and range lines were then surveyed. A priority was made of surveying sections in the townships on lands that were sought after for settlement. Surveyors moved quickly, leaving documented monuments of their activities as they proceeded. Such surveys were necessary for the distribution of land from the public domain through the Homestead Act and various other land management acts of the government administered by the GLO. Although surveying was a major activity, the activity itself was transitory and ephemeral, leaving few identifiable traces and little that can be considered of archaeological value as a byproduct. Still, the activity has had a major impact on how people describe and perceive the land and how land ownership is distributed over the landscape, in quarter divisions of 640-acre square-mile sections.

The Pacific Railroad Act of 1862, as amended, bestowed federal land grants of alternating sections (odd numbered) for 10 miles on either side of the Union Pacific Railroad's tracks as compensation for construction of what is commonly referred to as the "Transcontinental Railroad." The route crossed the northeastern corner of Colorado, and the land grant applied there along with elsewhere along the route. Because the Kansas Pacific and Denver Pacific Railroads were considered subsidiaries of the Union Pacific, they were afforded the same compensation when they constructed their lines to Denver in 1869 and 1870. The National Land Company was organized by the railroads as a way to sell the land to settlers, speculators, and colonies. Towns and agricultural development tied to the railroads was the result.

## **Indian Agencies**

With settlement came increased conflict with Native American groups. This required treaties, which necessitated the establishment of federal government agencies to administer the government's resulting obligations to the various Indian groups. Treaties between Native American groups and the federal government were negotiated in an attempt to alleviate conflicts, and reservations were established to move Native Americans away from disputed areas. The treaties and changing reservation boundaries resulted in government-constructed features on the landscape. For instance, by the late 1860s and early 1870s, large bodies of ore had been found in the San Juan Mountains. This situation led to the signing of the Brunot Agreement in 1873, whereby the Uncompahgre and Tabeguache Utes ceded their rights to most of the San Juan Mountains and agencies were established on the White River and at Los Pinos near Cochetopa Pass. Movement of miners into the area resulted in considerable discontent among the Utes and fear among the miners, resulting in the establishment of Fort Lewis as a military base of operations. As antagonisms escalated, Ute hostilities culminated in violence at the White River Agency in 1879, commonly referred to as the Meeker Massacre. The killing of Nathan Meeker and several of his employees, and then the subsequent Battle of Milk Creek, served as the catalyst for removing the White River, Uncompahgre, and Tabeguache Ute from western Colorado to reservations in northeastern Utah and restriction of the Muache, Capote, and Weeminuche Utes to reservations along Colorado's southern border.

## U.S. and State Military

The U.S. military presence in Colorado has been extensive. It began with a brief foray into current Colorado in 1835 by Colonel Henry Dodge, following the South Platte River to the Rocky Mountains and returning to Fort Leavenworth by way of Bent's Fort (see Table 47, page 474). After the Mexican-American War, the U.S. military presence became permanent with the establishment of Fort Massachusetts on the edge of the San Luis Valley in 1852. The installation was relocated to Fort Garland in 1858, where it remained an important base of operations until 1883. The U.S. military presence was reduced during the Civil War, which coincided with a period of conflict with Native American groups on the Plains. A volunteer state militia was started in 1861 by Governor William Gilpin to protect Colorado from Confederate forces. Volunteer troops were largely involved in protecting and patrolling travel routes, often remaining for a short period at existing strategically situated facilities such as stage stops, ranches, or small communities, but also in establishing temporary camps and forts as they moved about the eastern plains of Colorado (see Table 48, page 475). They succeeded in distinguishing themselves in battle at Glorieta Pass in New Mexico but saw little other Civil War action. Camp Weld (Fort Weld) and Camp Collins (Fort Collins) were the only more permanent state militia posts established during this period. By 1864, the Confederate threat had abated, but conflict with Plains Indian groups had intensified, causing new governor John Evans to raise a regiment of volunteer soldiers to eradicate hostile Indians. Under the command of John Chivington, the volunteers massacred a camp of peaceful Cheyenne and Arapaho Indians at Sand Creek, leading to condemnation by federal investigators and increased conflict with Plains Indian groups through 1869, despite successful treaty negotiations in 1867. Except for Camp Weld, Fort Sedgwick, and Camp Collins, the lack of actual construction of military posts associated with Colorado volunteer troops during the period has made it difficult to identify Colorado volunteer military camps from the late 1850s to late 1860s.

Early troops frequently utilized existing facilities, such as trading posts, stage stations, and ranches, as their base of operations in their role as protectors of travel routes. They seem to have moved frequently and established small camps as they traveled. Thus, some degree of association between historic trails and fort or camp locations is expected. However, subsequent changes in the natural and social landscape have usually negatively affected this historic relationship. On the Plains, troops generally responded to altercations with Indians as they emerged or were moved about to establish a presence that was intended to prevent hostilities by acting as a buffer between settlers and Native Americans. Contrary to popular perception, troops were frequently dispatched to the mountains and western Colorado to protect the interests of Native American groups against infringement by white settlers rather than for the protection of settlers from Indians. Consequently, forays by military troops were frequently on Indian reservation lands to remove trespassers or to verify reports of unauthorized entry. Temporary camps were utilized during these maneuvers.

With the end of widespread conflicts with Plains Indian groups in Colorado in the late 1860s, Colorado volunteer troops were no longer needed, but a Colorado militia was still in place. In 1879, the Colorado Militia was officially renamed as the Colorado National Guard by the state legislature. These troops were intended to respond to emergency situations. The most prominent emergencies that they responded to were miners' strikes at Leadville, Cripple Creek, Colorado City, Telluride, and at the coal mines near Walsenburg and Trinidad. During these periods of unrest, the National Guard established military camps close to the mines or striking miner camps (Table 49, page 477). In a report of National Guard for the year 1928, Colonel P. P. Newlon, adjutant general of Colorado, summarizes the nature of mining camp riots and uprisings:

Mass picketing, which is in violation of the Colorado Anti-picketing law, was resorted to on the property of every mine that attempted to work in Huerfano, Las Animas, Fremont and Weld Counties. Crowds of picketers, many times to the number of 800 men and women, would gather in towns adjacent to mines attempting to operate, and in automobiles and trucks numbering as high as 100 would form a column and go to the mines in the mornings and evenings at the time of shifts were changing and by every known method of intimidation and threat would endeavor to keep men from working. (quoted in Nankivell 1935:246)

Coinciding with and soon after these events and with the prominent use of the National Guard, a training center and rifle range was established in 1903 at what became known as Camp George West near Golden (Simmons and Simmons 1992), and numerous communities around the state constructed National Guard armories where troops and equipment could be housed (see Table 50, page 478). These facilities were also frequently venues for community events. In 1996, 23 armories were still in use around the state (Scott 1999). With the reorganization of the National Guard, authorized by the War Department in the 1920s, several military organizations were established throughout Colorado, mostly engaged in weekly drills, annual camps, and occasional visits to target ranges. Regiments were also often engaged in public utilities and reservoir projects throughout the state. Troops were also sent to assist communities beset with natural disasters, such as floods, or to maintain law and order in the volatile mining camps. For example, a disastrous flood of the Arkansas River overwhelmed the city of Pueblo on June 3, 1921, and all of the available National Guard organizations of the state were ordered there for assistance (Nankivell 1935:245). Apart from the establishment of temporary camps in areas of natural disaster or union trouble, most National Guard troops were stationed at field training camps. The first of the post-World War I field training camps for the Colorado National Guard was at the Rifle Range near Golden in 1923. These camps were commonly organized with parallel lines of tents, company kitchens, a supply tent, guard house, and company offices.

Although the federal presence in Colorado was reduced after Native Americans were placed on reservations, some military presence persisted. Fort Logan was established in 1887 as a consolidation of troops near Denver. World Wars I and II stimulated increased military activity in Colorado (see Table 51, page 479). During World War I, the National Guard's Camp George West became a staging facility for troops, as did Camp Baldwin at Overland Park in Denver. Fort Logan served as a recruitment depot. Medical facilities were also constructed, including the Fitzsimons Army Medical Center. Just prior to World War II, Lowry Field, later known as Lowry Air Force Base (5AH797 and 5DV712), was built near Denver in Arapahoe County. With entry into World War II, other airfields were constructed including Arlington Auxiliary Army Air Field at Arlington in Kiowa County, the Pueblo Army Air Base (5PE3752), La Junta Army Air Field, Buckley Field (Buckley Naval Air Station [Buckley Air Force Base]; 5AH169) in Arapahoe County, and Peterson Army Air Field (renamed Peterson Air Force Base in 1976) near Colorado Springs. Turquoise Lake near Leadville was also used for practice landing helicopters and aircraft on ice. Between 1941 and 1946, the Denver Arms Plant in Jefferson County (also known as the Denver Ordnance Plant; 5JF1048) was operated under military contract by the Remington Arms Company; it is currently the Denver Federal Center. In 1942, the Rocky Mountain Arsenal (5AM628, 693, 694, 983, 1126, 1228, and 1229) and the Pueblo Ordnance Depot (renamed the Pueblo Chemical Depot in 1976; 5PE2038 and 5PE4267) were established. The Denver Medical Depot was established in 1942 as a storage and distribution center for medical equipment and supplies. After it was closed in 1946, it served as the Air Force Finance Center from 1951 to 1977. Also in 1942, Camp Carson (later renamed Fort Carson; 5EP602) was established and has been operational ever since. Camp Hale (5EA197 and 5LK628) became a winter and mountain training facility for troops in 1942 and continued in that capacity until 1965.

In addition to directly serving U.S. troops, Camp Carson became one of three major prisoner of war camps in Colorado; the other two were Camp Greeley and the Trinidad Internment Camp (see Table 52, page 480). From these camps, prisoners of war were dispatched to many work locations throughout the state. Agricultural work along both the Front Range and the Western Slope was the most common type of labor that prisoners were used for, but they were also employed for timber cutting in the mountains, including Fraser and on Clinetop Mesa north of Newcastle. Prisoners of war were not the only ones interned in Colorado. Camp Amache (Granada Relocation Center) was the facility in Colorado used to hold 10,000 Americans of Japanese descent relocated from the West Coast from 1941-1945. It was one of 10 Japanese-American internment camps in the country.

Many of the military facilities established during World War II continued to be utilized and expanded during the Cold War era (see Table 51, page 479). Much of the Cold War military infrastructure in Colorado was focused around Colorado Springs and included the enlargement of Camp Carson as Fort Carson, and the construction of the Cheyenne Mountain Air Force Station and Ent Air Force Base in 1957 as key components



of the North American Air Defense (NORAD). Also in the area are the Consolidated Space Operations Center (CSOC) and the Air Force Academy (5EP595) in Colorado Springs.

The federal government's role in uranium exploration, mining, and processing for military use throughout the Cold War was key to that industry's existence from World War II to the 1970s. Orchestration of the uranium industry by the federal government is in evidence throughout the western portion of the state.

## **Land Management**

Management of forested portions of the public domain began with the Forest Reserve Act of 1891. Prior to the Act, the Division of Forestry had been established under the Department of Agriculture, but it did not have a land base to manage. The U.S. Forest Service was established in 1905 to manage the forest reserves, which were renamed national forests in 1907. Management of the national forests by the U.S. Forest Service has left considerable evidence on the landscape that may have importance to archaeological investigation. Guard stations and camps were established at key locations so that timber and grazing activities could be overseen or monitored. These were frequently log cabins or tents, sometimes with an associated corral. A key element of the federal management program was fire detection and suppression. Fire lookouts were built on high points, frequently in trees that provided good vantages. As time went on, many of these facilities were improved and connected by telephone lines for communication. In recent years, most facilities in the woods have been abandoned, and many have been purposely demolished. In some instances, structures have been adaptively reused, such as the CCC privies at the Monarch ski area, or structures have been removed and reused at nearby farms and ranches. In addition, short-term camps were established in expedient locations for the purposes of fire suppression or specific work tasks, such as timber cruising, road construction, and noxious plant eradication.

The widespread removal of timber for the mining industry, and the grazing of livestock throughout the mountains of Colorado provided the major impetus for government intervention in the management of the land and its resources. Beginning in the 1890s, the establishment of federally managed forest reserves encompassing huge tracts of public land, particularly within the mountains, "fundamentally shaped [the] subsequent settlement and development" of the state (Wyckoff 1999:90). Between 1890 and 1930, most of Colorado's mountains came under the management of the U.S. Forest Service. A secondary goal was protection of watersheds through the management of timber resources and prevention of fires. Regulation of the timber industry on federal lands was a principal management directive, as was control of grazing. Damage to the public domain due to overgrazing reached crisis levels during drought years in the early 1930s, leading to the passage of the Taylor Grazing Act of 1934. The act established the U.S. Grazing Service under the Department of the Interior to administer the Taylor Grazing Act and implemented strict management and regulation of grazing on the public domain through an allotment system. The GLO, which was winding down its role in delivering federal lands into private ownership, and the Grazing Service were merged as the Bureau of Land Management in 1946. Since the implementation of the Taylor Grazing Act, range improvements, such as stock watering facilities and corrals, seem to have been put in place with greater regularity as grazers with allotments were assured more direct benefit than they did during the free-range era.

In the early 1900s, several major national parks were established under the Department of the Interior. These properties were overseen by the National Park Service after 1916 as a direct means to protect and conserve the natural landscape while providing recreational opportunities. By 1934, more than 13 million acres of the state's mountains and foothills were under federal control, leaving a distinct archaeological landscape, which Wyckoff (1999:97) refers to as an "administrative geography of supervisory and field ranger offices." The national forest mission had a significant impact on Colorado's landscape, not least of which were the numerous roads, trails, and campgrounds serving tourists and recreationists.

A change in administration in 1910 implemented an expanded focus on making permanent improvements on the national forests. These were outlined in *The Report of the Forester for 1911* as quoted in Hartley and Schneck:

The purpose of the construction of permanent improvements on National Forests is to facilitate (1) protection from fire, (2) the administration of the business of the Forests, and (3) the development of their resources...The administration of the Forests requires the construction of quarters for field offices and facilities needed in the regulation of the use of forest resources... (1996:13)

Part of this program was the establishment of offices and residences of a professional appearance in towns adjacent to the national forests. This act was intended to integrate Forest Service employees into the surrounding communities in order to foster trust and cooperation. Offices and other administrative structures from this period and into the 1940s were often constructed to blend in with the surrounding environment by utilizing natural materials of stone and wood and rustic designs. In Colorado, there are some 282 U.S. Forest Service buildings constructed under these guidelines intended to convey a sense of harmony with the environment. In designing structures in such a fashion, the agency recognized that its architectural choices established and conveyed its identity to the public locally and nationally.

In 1938, the U.S. Forest Service Division of Engineering published a policy document of acceptable plans for USFS administrative buildings that formally outlined already established USFS architectural precedents (USDA Forest Service 1938). Consulting Architect W. Ellis Groben proposed that Forest Service architecture be regionally adaptable because of inherent differences in both the built and natural environment throughout the country. He gave four basic environmental divisions and the appropriate "style of architecture" that would best suit the Forest Service philosophy: 1) desert or semi-desert regions would warrant adobe or pueblo styles, 2) grassland regions would warrant ranch-house-type structures, 3) woodland regions would warrant timber-type structures, and 4) alpine regions would warrant alpine-type construction, consisting of stone or stone and rough timbers.

A parallel development of architectural design in a rustic style began at national parks throughout the country with the establishment of the National Park Service in 1916. The influences of landscape architects in the design of administrative buildings and hotels at the national parks is quite pointed and gradually resulted in balanced designs made from natural materials that were often grand in scale but built in styles and with textures that were harmonious with their natural setting and often borrowed elements from nearby cultural influences (Tweed et al. 1977). A particularly important development in architectural style took place at Mesa Verde. When Jesse Nusbaum became superintendent at Mesa Verde, he designed the administrative complex for the park in what has been termed the Pueblo-revival style with inspiration coming from the cultural landscape rather than the natural landscape. The use of cultural heritage as the impetus for architectural style at Mesa Verde was groundbreaking for the National Park Service and became the norm at parks and monuments through the 1930s (Harrison 1986).

Like the Forest Service, the National Park Service was the beneficiary of Civilian Conservation Corps (CCC) and Works Progress Administration (WPA) projects to construct and improve facilities. To facilitate construction projects, the National Park Service compiled plans and explained their architectural philosophy in *Park Structures and Facilities* (Good 1935). The similarity in design and philosophy between the National Park Service and the U.S. Forest Service is certainly not a coincidence. Although the two agencies were competitive with each other, their design philosophies reflect responses to the same ideals of harmony with nature, culminating in a need for standardization with the rapid development of recreational facilities during the Depression era.

The increased popularity of the automobile made it possible for increasing numbers of city dwellers to look to the national forests and national parks for recreational opportunities. Roads were improved to key recreational spots, and official campgrounds were constructed and maintained. These two activities were made possible by authorization by Congress in 1915 for the Department of Agriculture to begin issuing permits for the construction of recreational structures and facilities and the Highway Act of 1921, which funded access roads into the forests (Hartley and Schneck 1996:13). At the same time, the establishment of the National Park Service in 1916 resulted in a more cohesive development of national park administrative and visitor facilities.

Not to be outdone, the Forest Service began looking at their lands in terms of recreational opportunities for the public beginning in the late 1910s. In 1919, they hired Arthur Carhart, a trained landscape architect, as their first recreational planner. His work on the San Isabel National Forest creating the first planned campgrounds on Forest Service land was considered a model for later recreational development. Most notable is Squirrel Creek Canyon Campground and Cascade Trail near Beulah. Part of his planning included integrating road systems to connect nearby towns with the new recreational sites he had designed. The recently designated Frontier Pathway National Scenic Byway between Pueblo and Wetmore was designated mainly because it was a route designed by Carhart in 1919. Carhart is also known as a leader of the conservation movement primarily because of his correspondence with Aldo Leopold, and also his recommendation to leave Trappers Lake a natural area, rather than develop it for recreation. Although Carhart worked for the Forest Service only until 1922, his influence on the trajectory of Forest Service recreational development was dramatic, and his ideas made an impact throughout the country.

## **Public Works and Public Service**

With the onset of the Depression in the 1930s, relief programs were instituted to assist the unemployed. The Civilian Conservation Corps (CCC) was one of the most popular and successful of the New Deal Relief Agencies, but workers also participated in projects under the Civil Works Administration, the Works Progress Administration, and the Public Works Administration. The CCC and WPA were the most influential in recreational developments in the state. More than 30,000 people participated in the Colorado CCC, and more than 150 camps were established around the state (Wyckoff 1999:257). The CCC was established in early 1933 to provide work for 18- to 25-year-old men on civic projects administered by the Departments of Interior and Agriculture: U.S. Forest Service, National Park Service, Soil Conservation Service, Bureau of Reclamation, and Division of Grazing. The workforces were supplemented by Local Experienced Men (LEM) who served as foremen for much of the work and trained the laborers. The camps were generally segregated, with the establishment of black camps, and to a lesser extent, Hispanic camps. Camps were established throughout Colorado but were concentrated on or around federal lands (Hartley and Schneck 1996:17-23). The work conducted by the camps included construction of administrative sites, campgrounds, and picnic facilities; road, bridge, and culvert construction; range improvements, including erosion control projects and construction of stock ponds, stock driveways, and corrals; fire prevention and suppression activities; irrigation and dam construction; and undesirable plant eradication. The CCC began to be phased out beginning about 1940 and was disbanded at the beginning of World War II.

In addition to improvements made by the CCC, the Works Progress Administration (WPA) conducted numerous projects in Colorado that remain today as highly visible and distinctive features on the landscape. The WPA involved approximately 150,000 Colorado workers between 1936 and 1943. They engaged in hundreds of projects such as sewage works, school and library construction, creative arts activities, worker retraining classes, and even the reconstruction of the historic Fort Vasquez, an adobe trading post of the 1830s (Sprague 1976:161; Wyckoff 1999:257). Other federal assistance projects were focused on the agricultural sector, particularly on the eastern plains. By 1940, approximately nine million acres of Colorado land (much of it damaged) were purchased through federal buy-out programs from destitute farmers and ranchers and incorporated as federally managed conservation districts, creating both the Comanche and Pawnee national grasslands (Wyckoff 1999:258-259).

The federal government's involvement in water development projects has been considerable in Colorado. The impetus of these projects was to develop the water resources of the region and put them to use in irrigating land for agriculture. To this end, Congress passed the Reclamation Act, also referred to as the Newlands Act, on June 17, 1902, that created the Reclamation Service within the Geological Survey of the Department of the Interior (Armstrong 1976:311). The service was designed to complete reservoir and irrigation projects throughout the arid western states in order to promote settlement and agriculture. The Reclamation Service was given bureau status in 1907, and in 1923 became officially known as the Bureau of Reclamation (BOR). Congress enacted two key expansions to the 1902 act. First, in 1906, the legislature broadened the act to allow for the sale of municipal water supplies and hydroelectric power from reclamation projects in an effort to offset project expenses. Second, in 1928, the act was expanded to authorize functions

such flood control, industrial water supply, and other beneficial uses beyond irrigation (Armstrong 1976:312). During the 1930s, the demand for job-creation projects connected the BOR with other government agencies, such as the Army Corps of Engineers and the CCC, to continue construction of large-scale dams, power plants, and canals.

Between 1902 and 1930, the Reclamation Service/Bureau of Reclamation developed and funded 38 projects in 15 states, two of which were in Colorado. The Uncompahgre Project was one of the first five projects authorized by the Reclamation Service in 1903. It included the completion of the Gunnison Tunnel in 1909 and acquisition and construction of an extensive irrigation canal and lateral system for the irrigation of 76,300 acres of land in the Uncompahgre Valley from Montrose to Delta. A later part of the project was the construction of Taylor Park Dam, completed in 1937. The second of these early projects in Colorado was the Grand Valley Project. The Grand Valley Diversion Dam was constructed on the Colorado River from 1912 to 1915. Diverted water was conveyed by the Government Highline Canal for irrigation of about 42,000 acres of land in the Grand Valley in the vicinity of Grand Junction.

Numerous other reclamation projects have been constructed in Colorado since 1930:

- Vallecito Dam was constructed between 1938 and 1941 as part of the Pine River Project near Durango. It provides flood control and distributes supplemental irrigation water to 54,000 acres of land, including 13,000 acres on the Southern Ute Reservation.
- The Colorado-Big Thompson Project was constructed from 1938 to 1959. It is a large and complex system that diverts 260,000 to 310,000 acre feet of water from the headwaters of the Colorado River to the Big Thompson River for distribution on the Eastern Slope. Facilities include Green Mountain Dam and power plant; Granby Dam and pumping plant; Willow Creek Dam and pumping plant; Shadow Mountain Dam; the Alva B. Adams Tunnel; the Upper and Lower East Slope Power System, which includes dams, reservoirs, canals, siphons, penstocks, and power plants; Carter Lake Dam; the St. Vrain Supply Canal; Boulder Creek Supply Canal; South Platte Supply Canal; Charles Hansen Feeder Canal; Big Thompson Powerplant; Horsetooth Reservoir; Charles Hansen and North Poudre Supply Canals; and an extensive power transmission system.
- The Fruitgrowers Dam Project was constructed in 1938 and 1939. It replaced an earlier dam on Surface Creek near Austin in Delta County and provides irrigation water to 2,700 acres of land.
- The Mancos Project included the construction of Jackson Gulch Dam near Mancos. Construction was initiated by CCC crews beginning in 1941. The project was then delayed by World War II and completed in 1950. The project supplies supplemental water to 13,476 acres of land.
- Bonny Dam on the South Fork of the Republican River near Hale was constructed from 1948 to 1951 as part of the Arnel Unit of the Pick-Sloan Missouri Basin Program. The dam was constructed as a flood-control measure, but it also provides irrigation water for 750 acres of land.
- Platoro Dam on the Conejos River near the town of Platoro was constructed between 1949 and 1951 as part of the San Luis Valley Project. The dam was constructed as a flood-control measure and to regulate the flow of the Conejos River.
- The Colorado River Storage Project was undertaken to provide long-term storage and regulation on tributaries of the Colorado River. The Wayne N. Aspinall Storage Unit on the Gunnison River is the Colorado portion of the project. It includes Blue Mesa Dam and power plant, Morrow Point Dam and power plant, and Crystal Dam and power plant. The entire project was initiated in 1956 with the construction of Glen Canyon and Flaming Gorge dams. Blue Mesa dam was constructed from 1962 to 1966, Morrow Point Dam was constructed between 1963 and 1968, and Crystal Dam was constructed between 1973 and 1976. Navajo Reservoir on the San Juan River extends into Colorado, but the dam was built in New Mexico as part of the Navajo Unit between 1957 and 1963.

Other projects not yet 50 years old include the Collbran Project (Vega Reservoir) from 1957 to 1962; the Paonia Project (Paonia Reservoir) from 1959 to 1962; the Smith Fork Project (Crawford Reservoir) from 1960 to 1962; the Florida Project (Lemon Reservoir) from 1961 to 1963; the Silt Project (Rifle Gap Reservoir) from 1964 to 1967; the Fryingpan-Arkansas Project (Ruedi Dam, the Charles H. Boustead Tunnel, Sugar Loaf Dam on Turquoise Lake, the Mount Elbert Conduit, Halfmoon Diversion Dam, Mt. Elbert

Forebay Dam and power plant, Twin Lakes Dam, Pueblo Dam, and Fountain Valley Conduit) from 1964 to 1975; the Bostwick Park Project (Silver Jack Reservoir) from 1966 to 1971; the Dolores Project (McPhee Dam and numerous canals) from 1977 to 1999; and the Dallas Creek Project (Ridgway Dam) from 1978 to 1987.

The Army Corps of Engineers has constructed five projects on the Eastern Slope, mainly for flood control. The first of these was John Martin Reservoir in Bent County to prevent flooding on the lower Arkansas River and to provide water for agricultural irrigation. The project was authorized in 1938, and initial work was conducted in 1939 and 1940. After stoppage during World War II, the project resumed in 1946 and was completed in 1948. Cherry Creek Reservoir was the first of three projects to protect the Denver area from flooding; it was started in 1948 and completed in 1950. The other two projects were Chatfield Reservoir on the South Platte River, started in 1967 and completed in 1975, and Bear Creek Reservoir, authorized in 1968 and completed in 1982. The last reservoir built by the Army Corps of Engineers was Trinidad Reservoir on the Purgatoire River in Las Animas County, completed in 1979.

## **Transportation**

Bicycle enthusiasts in the 1890s were the first to lobby for the development of good roads throughout the country. Expanded production of the automobile and its increasing affordability for the general public brought awareness of the inadequacy of existing roads for the new mode of travel. The U.S. Bureau of Roads was established in 1902, and the Colorado Highway Commission was formed in 1909 to manage a state road system. Initial pushes for a transcontinental highway were through private automobile organizations. One of the foremost was the Lincoln Highway Association, formed in 1913. With intensified lobbying for good roads and increased automobile travel, the federal government expanded its efforts with the Federal-Aid Road Act of 1916, which dispensed money to individual states for interstate road improvements. To qualify for aid, state highway departments were established and were required to follow strict guidelines. Having already established the Colorado Highway Commission, Colorado was prepared to interact with the federal government and become a recipient of the federal assistance. Road construction through state highway programs became commonplace in the 1920s and has been a major infrastructure constituent ever since. Through time, design standards for road construction have been established by the federal government to prevent road damage from trucks carrying heavy loads and for safety. The design standards have led to improvements in the use of materials and in design. The concept of a high-speed interstate highway system with controlled access was introduced in 1939. The Defense Highway Act of 1941 furthered the concept of a highway system as a necessity for national security and was acted upon by Congress in 1944. Studies continued through the 1940s and early 1950s, and in 1956, the National System of Interstate and Defense Highways was approved. As the name implies, the highway system enabled the fast and convenient movement of people and goods along federal interstate highways but was also intended to step up national military preparedness and mobility (Armstrong 1976:53-106).

## **MANIFESTATION OF THE THEME IN COLORADO'S ARCHAEOLOGICAL RECORD**

### **Archaeological Characteristics That Make Sites in the Theme Identifiable**

Sites and features on public lands represent the most widespread and visible elements of the archaeology of the federal government in Colorado; however, many other sites and features are also present that are not necessarily connected to the public domain. These are Indian agencies; military installations – camps, posts, forts, bases, training camps, internment camps, prisoner of war camps, and target ranges; public service sites – post offices, customs houses, and prisons; and public works construction – roads, canals, dams, CCC camps, construction camps and housing, and equipment storage and repair. The federal government had a strong role in shaping settlement and society in general “through a political process that included the survey

and disposal of land, frameworks for legally incorporating places and businesses, initiatives for developing infrastructure and industry, and thousands of laws designed to promote a civil society” (Wyckoff 1999:293). The government’s role in settlement, infrastructure, and social practices can best be demonstrated archaeologically through the study of the places that were at the interface of government and public interaction, whether that public was Native American or Euroamerican. For example, archaeological investigations of Indian agencies may be productive in juxtaposing federal policies against the realities of the living conditions of both agency personnel and the Indians that the installations were intended to serve. The study of CCC camps may be able to determine if regulations aimed at improving hygiene or banning contraband were successful.

## **EXPLORATION**

The likelihood of encountering sites associated with government exploration and scientific investigation is expected to be quite low. The transient nature of these activities, despite involving relatively large groups, left little evidence on the landscape and are very difficult to identify for what they are. If found, sites would be short-term camps with a small amount of domestic refuse with an appearance similar or identical to what might be expected at fur trade-era sites or later campsites of a similar transient nature. Accidental loss of items that may be distinctive of a particular expedition would be expected to be low, as would be items that can be dated accurately enough for secure association. However, the location of the attack of the Hayden Expedition in southeastern Utah has been verified, mainly because of the recovery of equipment they disposed of in haste, so the possibility of identifying sites of this theme is not out of the question.

## **LAND SURVEY AND DISTRIBUTION**

Evidence of surveying of the land for private distribution through the GLO is common throughout the state. Survey notes describe section corners and other land survey monuments left in place at the time of the surveys and occasional debris is found along section lines that reflects the passage of survey parties. Still, these monuments and items are not important archaeological materials. It is expected that surveyors’ camps should be present throughout the state, but the transitory nature of the surveys suggests that camps will be difficult to ascribe to surveyors and, even if they can be, the archaeological value of such camps is expected to be low. Several offices of the GLO were established in various places in Colorado. It is uncertain whether they will have archaeological signatures different from any other bureaucratic office.

## **INDIAN AGENCIES**

Indian agencies were placed at specific locations and included a complement of buildings that was generally consistent from agency to agency. In general, an agency had residences for key personnel, a storehouse for keeping annuity goods and items issued to the Indians, a blacksmith shop, and a schoolhouse. In some instances, a sawmill, gristmill, carpentry shop, granaries, smokehouse, infirmary, farm equipment shed, barns, and stables might be expected as well. In most cases the locations of agencies and the arrangement of structures is described in historical records, though architectural evidence at agencies is lacking. Archaeological investigations at the 1<sup>st</sup> Los Pinos Agency near Cochetopa Pass (Pfertsh et al. 1996) and the Uncompahgre Agency (2<sup>nd</sup> Los Pinos Agency) near Colona (Baker 2004a) have shown that valuable archaeological materials remain at these sites that can be used to explain early government-Indian relations, such as the impacts of government policies on Native American subsistence, acquisition of goods, and resource use.

## **U.S. AND STATE MILITARY**

Archaeologically, it can be expected that the presence of Colorado volunteer soldiers at ranches, stage stations, and small towns may be very difficult to identify and separate from other more prevalent activities. This difficulty is largely due to the fact that occupations at these locales were usually short and the Colorado volunteers were not outfitted with distinctive equipment. That is, no standard military goods and supplies

were issued to the troops, and the equipment they used was in common use throughout the territory. Stand-alone camps from troop forays will be equally difficult to identify because they were of short duration with little or no physical development. In addition, information in historical documents is vague as to where these volunteer encampments were. U.S. military forts and cantonments were more permanent facilities, and their locations are better documented. Still, the camps and some of the lesser forts may not be easily identified. U.S. military installations may be relatively distinctive in their archaeological assemblages through the identification of distinctive insignia, military accoutrements, horse tack, and firearms. Although government-issued materials may also be in evidence at Colorado volunteer camps and installations, artifacts associated with these sites may be considerably more varied. For forces consisting of volunteers, uniforms were less complete or were composites of apparel that included elements from prior service in other parts of the country. This practice was demonstrated at the Sand Creek Massacre site, where a New York State Militia button was found in addition to General Service military buttons. Also, at the Sand Creek Massacre site, a variety of firearms was used by the volunteer troops, comparable in variety to arms used during the Civil War (Scott 2000). Although not specifically stated, it is suspected that volunteers were issued whatever pistols and rifles were available and perhaps provided some of their own arms. This same situation may also have been common for early National Guard troops.

On occasion, military posts or forts grew from temporary camps to permanent establishments. For instance, the post at Fort Collins (5LR1362) evolved in three stages. An unnamed camp was established by the First Colorado Volunteers in 1863 along the bottomlands near La Porte. Soon thereafter, in May 1864, Camp Collins was established near or within the previous camp by the Eleventh Ohio Volunteer Cavalry. After Camp Collins was flooded in June of 1864, Fort Collins was established on higher ground farther downstream at what was considered a more defensible location.

Archaeological investigations are particularly suitable for documenting the various stages from camp to fort, to develop an understanding of how and where the fort's original buildings were organized and the changing material manifestations associated with the use of the forts. In other instances, archaeological remains provide an invaluable glimpse into the manner in which the army adapted fortification and encampment strategies to the local natural and cultural landscape. Mondragon-Valdez provides an example in an overview of Fort Garland:

The compound at Fort Garland provides a good example of a material culture transported first by the military and later by the railroad. No doubt Hispano who frequented the fort were exposed to new materials, use of specialized rooms, and design influences such as exterior wood trim around doors and windows. Likewise, village builders influenced the fort as it contained "jacal remains" and adobe wall construction": both construction techniques unfamiliar to military men during the early years. (2000:21)

The buildings of some of these larger forts remain in use. For example, historic Fort Logan is currently known as the Fort Logan Mental Health Center; the former officer's quarters are now the patient housing and offices.

Historical battle sites are often fields marked with a plaque or memorial, such as the Battle of Beecher Island site in Yuma County. In September 1868, between 40 or 50 soldiers and Indian scouts, led by Col. George Forsythe and Lt. Fred Beecher, fought a battle for eight days against an estimated 1,000 Cheyenne, Arapaho, and Oglala Sioux Indians led by Chief Roman Nose. Today the battlefield is marked by a single stone monument. Archaeological work at the Custer Battlefield in Montana and the Sand Creek Massacre site in Colorado have demonstrated the ability of archaeology to verify where these events took place, describe specific events within the conflicts, and add important undocumented information about the events.

World War I stimulated some expansion of military installations in Colorado for induction, training, and staging of troops for shipment overseas. Because America's role in the conflict was not protracted, these infrastructure developments were not of great magnitude and frequently were mainly a magnification of existing U.S. and National Guard facilities. World War II resulted in considerable expansion and

formalization of existing facilities for training and housing troops and manufacturing and storing munitions. A new aspect of the military buildup of World War II and afterwards was the establishment of numerous air fields, some of which continued to grow into major air force bases. Somewhat different was the establishment of Camp Hale for the training of military for winter warfare as the Tenth Mountain Division for World War II. Many of these varied World War II facilities continued to be utilized amid national security concerns of the Cold War into the 1980s and international peacekeeping and policing actions to the present time. Even Camp Hale saw continued use by the Central Intelligence Agency (CIA) during the Cold War. Archaeological investigation of twentieth-century military sites in Colorado has been hampered by the continued use of these facilities and a lack of focus on what archaeology has to offer to the interpretation of such sites.

With decommissioning and retrofitting of several of these facilities for other uses, archaeology has an opportunity to take a role in interpreting the military sites of the period. Because excellent documentation likely exists of facility development and the official activities at military installations, archaeology's role in interpretation may be quite selective. For instance, industrial characteristics of military installations may be quite well known through documentary sources, leaving little room for contributions from archaeology, but selective cases in determining function, layout, specific activities, or confirmation of presence of particular elements of facilities may be possible. Camp Hale is the most accessible of these, has been well documented, and can continue to provide good information about the standard design of buildings and camp layout of World War II facilities for comparative purposes. Although some archaeological investigations have taken place there, it has yet to be the subject of comprehensive, problem-oriented archaeology that can provide important comparative data. Where archaeology may be most beneficial in the investigation of military installations is in examination of personnel housing, medical facilities, mess halls, bath houses, and places of recreation. These could provide important comparative information about the standard of living, hygiene, socioeconomic status, ethnic and racial diversity, and conformity to standards within and between military facilities nationwide as well as between military and other government-controlled camps elsewhere, such as CCC camps, BOR work camps, prisoner-of-war camps, and Japanese-American internment camps.

The unusual situation of removing Japanese-American citizens from the West Coast and detaining them in isolated guarded facilities also took place during World War II. One of these, and the only such facility in Colorado, was Camp Amache (Granada Relocation Center; 5PW48) in southeastern Colorado. Another unusual circumstance of World War II was the importation of prisoners of war to detention camps in America, including Colorado. The principal prisoner-of-war camps were at Camp Carson near Colorado Springs, and Camp Trinidad near Trinidad; in Greeley, Italian prisoners were held at Horace Mann School and at Camp 202, just outside of town. Unlike the Japanese-American internees, prisoners of war were sent as work groups throughout the state, requiring the establishment of myriad small, secure camps wherever they were stationed. An archaeological assessment of Camp Amache in 2004 (Carrillo, Killam et al. 2004) provides considerable insight into the types of questions that can be addressed by using archaeology at the site itself and can easily be applied to prisoner-of-war camps and, perhaps, to other government-run or overseen work camps during the twentieth century (see Chapter 5, Ethnicity). The material culture at government-controlled camps can be particularly informative in making comparisons between camps of comparable age or function because a certain amount of the material present can be accounted for as government issue. Variation in what was standard issue from the government can then be scrutinized in terms of socioeconomic variability, individual or ethnic identity, personal freedom of access and selection of outside goods, and mechanisms for the introduction of contraband. Where site layout was standardized, variation from the norm and modification of the landscape can be examined for social meaning. For example, at Amache, features that appear to be gardens and possible fish ponds were identified, suggesting that landscaping was done that may have had both personal and ethnic importance. Manifestation of such cultural survivals and attempts at retaining cultural traditions against the backdrop of oppression are tremendous statements; similar survivals may be found if searched for at prisoner-of-war camps. One artifact type of particular interest at government-supplied camps, whether they be CCC, military, or internment, is large food cans that were manufactured using archaic hole-in-cap technology. The continued use of cans manufactured using technology that was largely obsolete by the early 1910s may be characteristic of government camps of the 1930s and 1940s.



Listed in Table 43 are some of the more common archaeological sites and features expected at military installations.

**Table 43.** Types of sites, structures, and materials associated with military installations.

Sites	Structures/Materials
Air bases, army bases, forts, military posts, training camp, internment camp/compound (Japanese, POW), airfield, landing strips, reservations, target ranges, battle sites, rifle pits.	Forts, barracks, fortifications, palisades, stables, stockades, reservations, target ranges, bombing range, air bases, fueling facilities, warehouses, munitions factories, hangars, houses, hospitals, landing strips, post exchanges, taxi ways, training buildings, towers, wind socks, offices, terminals, communication buildings, radio towers, beacons, markers, way stations, weaponry, machinery.

## LAND MANAGEMENT

In addition to the facilities constructed as projects by the CCC that remain an integral part of the current rural landscape, the camps themselves have left their mark on the landscape. Camps were administered by the army and built in a rather standardized, militaristic layout that mirrored the regimented life that took place there. This military connection also seems to be evidenced by the use of concrete-slab foundations, which was also typical of military construction of the time. Camps were identified as major base camps and side camps; the former were occupied throughout the year, whereas side camps tended to be more seasonal and less populated. Facilities included bunkhouses, dining halls, infirmaries, latrines, and washhouses, but amenities for education and recreation were also provided. Equipment storage and vehicle maintenance areas were also present. Hygiene was stressed, particularly with the disposal of trash and refuse distant from the camp. Upon abandonment, camps were completely dismantled with the buildings often sold to local farmers or ranchers for their use.

A brief summary of an archaeological investigation of the Coon Creek CCC camp is insightful. The overall function of the camp was to provide residence and serve the domestic needs of up to 200 men, and that called for housing, hygienic, mess, and recreational facilities. The administration of the camp itself, and the work the men did, also required support facilities such as offices, shops, supply houses, coal bins, water storage, water, heat, and electrical systems. It was expected that the layout of the camp would reflect the organization of features into three general areas of use that were likely to be discrete from one another (Archimede and Pfertsh 2003). Although a historic plan of the camp is not available, its actual layout can be discerned to a moderate extent by physical remains and the archaeological data alone. Feature and structure alignments show that the camp was oriented northwest to southeast. Surface artifacts were consistently associated with features, which allowed for functional interpretation of the features, especially those that were in ruins or ephemeral. Taken one step further, interpretations for areas of use were discerned by the relationships between grouped features.

Three areas of use were identified. The “façade” of the camp, on the west side of the site, was an administrative and support area, consisting of a parade ground, flag pole, and a number of structures connected by a central stone-lined footpath. The main access road ran northeast through the parade ground, past the flag pole, and perpendicular to the stone-lined path. The second area of use in the middle of the camp consisted of a plethora of features, including coal storage areas, paths and roads, footbridges and vehicle bridges across the intermittent drainage, and a large structure that probably served as the mess hall and kitchen. The third area of use at the rear of the camp, on the east side of the site, was for barracks and bathhouses. Three outbuilding support structures were recorded around the periphery of the camp. A trash dump, possibly associated with the camp, was discovered south of and outside the defined site boundary.

The archaeological manifestation of land management sites and features is diverse and may include an entire park, a work camp, or a host of smaller, more specific sites. The major site types and associated

features are listed in Table 44. The major categories of sites, structures and landscapes associated with land management facilities are listed in Table 45.

**Table 44.** Major types of government land management site types and associated features (McClelland 1998).

Site Type	Associated Features
Park road systems and parkways	Major roads, minor roads (circulatory roads in developed areas, fire roads, truck trails, spur roads, loop development), approach roads, road characteristics (gradient, cut and fill), surfacing, grade separations, such as bridges, tunnels, viaducts, plantings (such as sodding, erosion control, or beautification), structures associated with roads (such as bridges, culverts, tunnels, guardrails, revetments, curbs and sidewalks, gutters), developed areas and buildings associated with roads (such as entrance stations, ranger stations, maintenance areas, picnic areas, campgrounds, comfort stations, gas stations, interpretive exhibits, former CCC camps), and small-scale elements (such as parking areas, viewpoints and vistas, steps and stairways, trailheads, signs, mileposts, nature shrines, water fountains, curbing and coping).
Trail systems	Foot trails, bridle trails, nature shrines, signs and markers, shelters, stables, corral, bridges, tunnels, revetments, culverts, switchbacks, guardrails, steps and stairs, benches, overlooks, parking areas, viewpoints and vistas, springs and watering places, comfort stations, patrol cabins.
Major developed areas	Plazas, sidewalks, roads and bridges, water fountains, administration buildings, museums, park staff housing, concessionaires' housing, lodges and cabins, campground, community buildings, stores, cafeterias, gas stations, water towers, pump houses, power plants, parking areas, signs, steps and stairs, trees/plantings, stables, water supply, utility systems (telephone, sewer, incinerators, electricity), industrial groups and maintenance camps (dormitories, mess halls, garages, shops, storage buildings, work yards, roads and parking areas).
Minor developed areas	Entrance gates and stations, ranger stations, fire lookouts and caches, museums (including amphitheaters and interpretive trails), patrol cabins, trail shelters, campgrounds, picnic areas/waysides, spring developments, developed intersections, scenic features (viewpoints and vistas), recreational areas (ski slopes, toboggan runs, skating rinks, beaches, swimming pools, playing fields, docks and piers), trails, waterfalls, fish hatcheries, nurseries, stables, curbs/sidewalks, tress/shrubs/ground covers, utility systems (water, sewer, telephone, electricity).
Designated natural areas	Wilderness areas (trails, shelters, fire lookouts and caches, truck trails, patrol cabins), sacred areas, research areas.
Day-use areas	Roads/paths/parking areas, picnic areas (shelters, comfort stations, water fountains, community kitchens), refectories and concession buildings, water towers, custodians' residences, pump houses or springhouses, bathhouses, boathouses, dams, lakes or ponds, recreational facilities, spring developments, museums, observation towers and lookouts, water supply, utilities, bridges, trails and stairways, parking areas, overlooks, trees/shrubs/ground covers, signs.
Overnight areas	Roads/paths/parking, campgrounds, comfort stations, community kitchens, water fountains, water towers, check-in stations, pump houses, organization camps, cabin courts, lodges, beaches, docks, trails and paths, playing fields, water supply, utilities, overlooks.
Recreational facilities	Lakes/ponds/other water features (dams, channels, beaches, bathhouses, boathouses, spring development, parking areas, fishing and boating docks, ice skating shelter, picnic shelters, overlooks), winter sports and ski areas (ski slopes, ski jumps, ski lifts, toboggan runs, parking areas, skating rinks, ski lodge), playing fields, swimming pools and bathhouses, gold courses (holes, fairways, caddy houses, clubhouses, ponds, vegetation), tennis courts, trails (foot and bridle), stables and corrals.
Scenic overlooks and pull-offs (along park roads)	Roads and parking areas, curbs/sidewalks/retaining walls/guardrails, grading and bank sloping, viewpoints and vistas, scenic resources, trails and paths, steps and stairways, bridges, shelters, observation towers/lookouts, signs and exhibits (interpretive and directional), memorials, trail markers, water fountains and supply, spring developments, comfort stations, picnic sites, trees/shrubs/ground covers/plantings, benches.
Entranceways	Roads, arches/gates/walls, check-in stations, ranger stations, parking areas, curbs and sidewalks, paths and trails, water fountains, comfort stations, trees/shrubs/ground covers/plantings, flagpoles, signs, water supply, utilities.
Waysides (for parkways and recreational demonstration areas)	Roads, parking areas, curbs/steps/stairs/sidewalks, picnic areas, concessionaire (stores and gas stations), comfort stations, picnic shelters, water fountains, trails, playing fields, caretaker's residences, nature gardens, picnic tables, fireplaces, trees/shrubs/ground covers, signs, water supply, utilities.
Campgrounds	Entrance gates, entrance stations, road systems (one-way loop with tiers), parking spurs, barriers, tent sites, fireplaces, picnic tables, water fountains, water towers and pump houses, shelters, trash receptacles, paths and trails, steps and stairs, trees and shrubs, signs, community kitchens, comfort stations, amphitheaters or campfire circles, stores, viewpoints and vistas, lakes/ponds/other water bodies, water supply, utilities.
Picnic areas	Road system, parking areas, barriers, paths, picnic sites, fireplaces, picnic tables, water fountains, water towers and pump houses, trash receptacles, trails, steps and stairs, signs, shelters, community kitchens, comfort stations, pump houses, water system, viewpoint and vistas, lakes/ponds/streams, overlooks, recreational areas, water supply, utilities.
Organization camps (for state parks and recreational demonstration areas)	Administration buildings/offices, recreation halls, dining halls, infirmaries, staff quarters, craft shops, nature buildings, water towers, washhouses and laundries, comfort stations and latrines, counselor cabins, camper cabins, unit lodges, paths and trails, campfire circles, council rings, roads and parking areas, lakes/ponds, dams, beaches, docks, playing fields, water supply utility.
CCC camps	Entry roads, parade grounds, flagpoles, headquarters buildings, dining halls (mess hall), dormitories and barracks, chapels, workshops (woodworking, metal work, blacksmithing), sheds, sawmills, educational buildings, recreational buildings, garages, oil houses, shower houses, plantings, paths, water supply utility.

**Table 45.** Sites, structures, and landscapes associated with land management facilities (McClelland 1998; Wyckoff 1999).

Sites	Structures	Landscape
Range improvement projects, CCC camps, WPA projects, national forest and national park camps and trails.	Forest Headquarters (USFS), Park Superintendent's Office (NPS), District, Resource Area, or Field offices (BLM), Project Director's/Manager's Office (BOR), fire cache, fire watch tower, ranger station, visitor's center/facilities, government-funded tunnels, canals, ditches, roads, water systems, dams and reservoirs, water diversion and storage projects, and electric transmission facilities.	Administrative geography of supervisory and field ranger offices dotted the mountains with local centers of control. Investments in livestock fencing, corrals, stock driveways, bridges, and spring development, all important infrastructures designed to improve and in many ways subsidize the activities of local ranching operations. General road and trail construction, which helped control mountain wildfires and develop mountain tourism and recreation. Federally funded campgrounds. Revegetation (newly planted seedlings) changed forest composition; weed eradication programs altered the forest understory.

## PUBLIC WORKS CONSTRUCTION AND PUBLIC SERVICE

The activities of the BOR and WPA possess archeological potential, particularly at those projects constructed in the 1940s or earlier. The dams, extensive irrigation canals, and power plants are historic engineering resources that may be encountered in the field. Dam building required digging local quarries and clearing roads. Heavy equipment, first operated with steam and later with electricity, required power plants and generating stations to be built where convenient for construction purposes. Sawmills and cement plants were built to supply needed construction materials. Camps were erected around these industrial facilities to house the workers, machinery, and supplies required for such massive projects. Stables were constructed to hold the stock. These camps were built near the dams and consisted of residential structures, sheds, equipment warehouses, bathhouses, and dining halls. One example is the settlement built at the East Portal in the Black Canyon of the Gunnison while work was being completed on the diversion dam and tunnel from 1905 to 1909. During canal digging, temporary work camps were built along the routes. These camps were scrapped when the projects were completed, but remains may still be encountered that could reveal the layout of the camps, function of structures, extent of the operations, and the way of life of the workers. In addition, the community of Lujane was established at the west end of the Gunnison Tunnel to serve as the base of operation for tunnel construction from that end and for canal and lateral construction. The only construction camp for a water diversion project recorded so far is at the East Portal of the Alva B. Adams Tunnel (5LR802.1); the camp has been determined officially National Register-eligible for the important historical archaeological data that it contains (Pfaff and Queen 1992). It had its own post office from 1905 to 1910. Another example is the archaeological remains of construction at Vallecito Reservoir. The government-managed construction camp at Vallecito Dam (5LP4580) has little aboveground evidence, but appears to have intact archaeological deposits that may provide important information about government-regulated work camps (Pfertsh 2003a). In addition, smaller work camps, such as 5LP7158, seem to be present at points around the reservoir that may have been occupied by subcontractors employed to carry out specific portions of the construction. Good archaeological comparative material is available in Rogge et al. (1995), which reports on dam construction camps in Arizona.

During the Depression years of the 1930s, the federal government was involved in resettling individuals and families that had been dispossessed by drought and hard economic times. One feature of the program was to buy farm land that had been devastated by drought and dust storms on the eastern plains of Colorado as a relief measure for farmers and as a way to ensure environmental recovery of those lands. The acquired lands were combined to form the Pawnee, Cimarron, and Comanche national grasslands. Although the acquisition of the lands is not something that has left archaeological evidence, the federal policies that enabled the acquisitions have created an archaeological landscape of failed farms and ranches with a common termination date. The second part of the program was the relocation of individuals and families on farms and ranches elsewhere in the state as a form of economic relief. Some of these resettlement farms are known in

the Delta and Olathe area of western Colorado. In some instances, improvements were made at these farms by the federal government to make them habitable, and these farms are architecturally recognizable. Their histories suggest that they may have associated archaeological values in terms of social context.

Post offices are a ubiquitous type of public service building, and an understanding of the earliest post offices and mail routes is important for documenting historic settlement patterns and their role in communication and economic development. During the last decades of the nineteenth century and the first quarter of the twentieth century, the establishment of new towns and communities with each new mining boom and agricultural development was marked by the establishment of numerous post offices and routes. As Bauer et al. state:

Throughout the period of growth nearly every new mining camp, or cross-roads general store felt a need for its “own” post office and most achieved official status quite early in their life cycle. However, many passed into history in a matter of months, or at most a few years. The history of many offices is complicated by their mobility. Post offices were moved from one camp or cross-roads to another with great regularity, often depending on the availability of an individual qualified and willing to serve as postmaster. (Bauer et al. 1990:2)

In most cases, a post office was established before a town or a carrying contract was in place, as was the case in Coraville, the name of an office established on March 22, 1859, in the Leavenworth & Pike's Peak Express Company office in Denver City. The National Park Service has produced a National Register Bulletin, “How to Apply the National Register Criteria to Post Offices” (Boland 1994); however, there is no mention of any archaeological standards (Criterion D) for evaluating a post office.

The major categories of sites, structures, and landscapes associated with federal public works are listed in Table 46.

**Table 46.** Types of sites, structures, and features associated with federal public works.

Sites	Associated Features
Roads, bridges, culverts, canals, dams, construction camps, equipment storage/repair warehouses, schools, libraries, post offices, sewage/water treatment works	Standing architecture, structural remains such as footprints and foundations; stables and corrals; coal and hydro power plants for steam and electricity; earthen, stone, and cement dams; earthen and lined irrigation ditches; tunnels; digging and excavating machinery, bathhouses; dining halls; bunkhouses; infirmaries; sheds; tent sites; warehouses for fuel and equipment; blacksmith shops; road grids; outhouses; transmission lines and towers; lean-tos; coal bins; and water storage tanks.

## TRANSPORTATION

Most transportation-related sites are the linear sites themselves; these are described in Chapter 8, Linear Resources. Archaeological sites that demonstrate the role of government in the development of transportation in the state would be expected to include work camps, construction facilities, and maintenance facilities. These facilities will be recognizable largely because of the road or highway along which they are situated and their time period coinciding with the construction and use of the route. Highway construction in Colorado was managed by the state highway department using federal funding. Lesser roads were constructed by private individuals, counties, or by federal land-managing agencies. Road and highway construction camps were short-term facilities similar to other camps for construction activities and may not be individually distinctive unless evidence of specific road-building equipment remains. The majority of these camps will have been occupied by contractors and will likely not have the appearance of being highly organized in terms of planned building placement, hygienic facilities, and trash disposal control. In some instances, CCC, WPA, or U.S. Army Corps of Engineers labor was used on road-building projects, in which case the camps may have a more standard layout and would be expected to conform to other CCC or federally administered camps for the variety of projects in which they were involved. The main differences would be a more orderly arrangement of facilities and evidence of compliance with hygienic conditions at government-

managed camps, particularly in having household trash disposed of at some distance from the camp. Construction facilities would be expected to include quarries, rock-crushing plants, and asphalt plants. These were also short-term facilities that may have included an office and living quarters for a manager and workers. Maintenance facilities are commonly situated along highways. These are long-term facilities that usually include an office, maintenance vehicles and equipment, and supplies, such as sand for snow plows. It is uncertain if housing would be a component of these sites; currently they are usually close enough to a community for workers to easily commute.

Only one project has recorded construction camps that may be associated with federal road building (Kane 1999). Four construction camps (5TL2188, 2191, 2193, and 2195) were recorded along the Pikes Peak Highway in the Pike and San Isabel national forests. These camps were well recorded, and three have been officially determined to be eligible for the National Register for their historical archaeological data recovery potential. All exhibited distinguishable camp layouts with associated artifacts related to construction activities and residential use.

## **Representation of Site Types in State Database**

### **SITES WITHIN THE THEME RECORDED IN THE STATE**

A total of 108 sites relating to this theme were identified from a search of the Compass database. This is an underrepresentation of the actual number of recorded sites that should be listed under the theme, as demonstrated by subsequent searches that focused on specific site types, such as construction camps, military camps and posts, and armories. General government-built recreational facilities figure prominently, presumably because these sites are on the public domain (as opposed to urban or private settings) and are more likely to be encountered on archaeological survey projects. CCC and WPA projects are also relatively common, as are structures associated with the National Park Service ranger or guard stations.

### **ADEQUACY OF RECORDATION AND EVALUATION**

Consideration of archaeological potential at several recorded sites is quite noticeable, though many sites do not appear to have been evaluated for their archaeological values. This deficiency is quite understandable for sites in urban settings, but it is possible that archeological values are being overlooked. For some categories of sites, most notably construction camps and battlefields, consideration of historical archaeology has been quite strong, mostly because the sites clearly have no aboveground manifestations and have been recorded relatively recently. Most recordings before the 1990s are noticeable for the infrequency that archaeological values are considered; this is also the case for National Register nominations that have been prepared for sites within the theme.

### **POTENTIAL FOR SITES WITHIN THE THEME TO EXIST AND BE RECOGNIZABLE**

The potential for archaeological sites associated with the federal government to exist in Colorado is quite high for nearly all of the topics discussed above. Archaeological manifestations from the exploration and scientific investigation periods will be difficult to recognize and are likely to remain underrepresented. A large number of military sites have been documented but considerably more have generally known locations and await recordation. Because military accoutrements and equipment are usually distinctive, these sites are likely to be recognizable. One of the problems of site preservation for later sites under this theme is that many locales were destroyed by various government agencies, as McClelland explains:

Because the National Park Service made efforts to eliminate the traces of old roads, homesites, and camps through landscape naturalization projects and reclamation projects, the sites of historic activities predating a park's founding or associated with road construction or CCC occupation may have little of no surface remains. (1998:498)

During the 1930s and 1940s, the federal government was careful to dismantle and remove camps no longer in use. In more recent years, abandoned facilities in the woods, such as guard stations and fire lookouts, have often been purposely demolished. Although removal of architectural elements is quite complete in most instances, the archaeological signature of camps, guard stations, and other facilities are frequently very recognizable. At CCC camps, archaeological materials are often relatively scarce because of high standards of hygiene enforced at the camps, resulting in trash disposal at some distance away. A similar dearth of artifacts is often also evident at guard stations and other federal facilities, possibly for the same reason or because use was seasonal. Some early military installations were abandoned and their buildings gradually removed. Often domestic and commercial uses took over the properties, obscuring the original military installation functions.

## **INTERRELATEDNESS OF THEME WITH OTHER TOPICS OR THEMES**

The impact of the federal government in Colorado has a strong association with the theme of recreation. More than 600,000 campers annually visited some 250 Colorado campgrounds by the early 1920s, and most of these camps were in the mountains, constructed along lakes and streams by the U.S. Forest Service (Wyckoff 1999). During World War II, the U.S. army maintained a training camp at Camp Hale near Leadville. Veterans of the Tenth Mountain Division at Camp Hale were major figures in the later development of ski resorts after the war.

The theme is also interrelated with transportation, beginning with the construction of military roads or upgrading of existing roads to facilitate troop movements, the transport of goods into the region, and safe passage of immigrants. Included was the road from Fort Wallace, Kansas, to Fort Lyon and the Smoky Hill/Butterfield Trail from Fort Riley, Kansas to Denver. Government involvement in transportation was formalized in more recent times with the creation of the U.S. Bureau of Public Roads in 1902 and the New Deal road projects of the 1930s. Federal agencies were engaged in road building in the many national forests and parks and also in the development of hiking trails. At a more general level, trends resulting from WPA projects reflect prevailing social and economic conditions. For instance, road modernization projects stimulated the development of service industries catering to the automobile.

With the development of an aviation industry, the federal government developed various programs of assistance to the industry, paving the way for private operators to provide air mail service and general commerce. In addition, the federal government took on the role of constructing and improving airports during the later 1930s, and military installations became a major feature of the landscape of Colorado with the onset of World War II. Indeed, many communities boomed after World War II with an influx of people, not only attracted by the state's climate and scenery, but by federal government spending on military, high-tech industry, and energy-related industries (Helphand 1991:229).

Sprague documents the relationship between military reservations and manufacturing in Colorado:

The propinquity of training camps, airfields, and intelligence units like The Cave at Pikes Peak attracted a host of ultramodern enterprises to Front Range cities, such as Martin Marietta Corporation and Sunstrand Corporation (aerospace plants) in Denver; Ball Brothers Research Corporation (orbiting solar observatories) in Boulder; and Hewlett Packard Company (electronic measuring equipment) and Kaman Sciences Corporation (nuclear physics research), both in Colorado Springs. The Federal Railroad Administration established a High Speed Ground Test Center near Pueblo. At Rocky Flats between Denver and Boulder, a plant was built for the Atomic Energy Commission to treat plutonium for use in devices designed to blow up the world, if necessary. (1976:174)

The role of the federal government is also expected to be reflected in the archaeology of farming or ranching themes, with numerous direct influences, such as the replacement of open ranching in national forests with more centralized and controlled operations, and changes to homesteading legislation, particularly the Taylor Grazing Act of 1934 and the New Deal Programs. For the latter, the U.S. Division of Grazing instituted strict management of grazing and implemented erosion control and range improvement projects that reduced degradation of public grazing lands. This work involved the development and conservation of water

through the construction of tanks and stock reservoirs; the digging of wells; dam construction; revegetation; eradication of poisonous weeds; rodent control; flood control; waterhole development; and the building of bridges, fences, truck trails, driveways, and range corrals. The BOR supervised the rehabilitation of existing storage and irrigation systems; the development and construction of supplemental storage facilities for areas affected by drought; and the construction of recreational facilities at irrigation reservoirs. The government directly regulated ranching and lumbering interests on the public lands; however, the government usually did not discourage development, especially undertakings proposed by politically powerful operators (Wyckoff 1999:100). Of course, relevant to many western states, the government has had a prominent role in issues related to long-term water supply. For instance, the Colorado River Compact of 1922 established a framework for the allocation of water between the upper basin states (including Colorado). There are 24 transmountain water diversions that transport water from the Western Slope of Colorado to the Eastern Slope. Many of these projects were undertaken with assistance by the federal government, with the Big Thompson project in northern Colorado being the largest.

The theme has an important association with linear resources because numerous trails are associated with government exploration and survey, post office routes and services, railroad land grants, road building, canal construction, and aviation. All of these factors have an important role in developing economic infrastructure to the state, particularly for industries relating to natural resource development, improving their range and mobility, and as such, have an association with industry and commerce. Furthermore, both state and federal agencies have played a strong role in the development of road and highway systems throughout the state. The culmination of these efforts has been the interstate highway system now in place that enables people and goods to be efficiently moved nationwide. On a lesser scale, state and county roads provide the basic infrastructure used by all citizens in their daily lives and roads on federal lands enable resource extraction, management, and recreational opportunities.

## **EVALUATIONS OF SIGNIFICANCE**

### **Relationship to the National Register of Historic Places Criteria**

#### **AREAS OF SIGNIFICANCE**

National Register Areas of Significance are defined in the National Register Bulletin “How to Apply the National Register Criteria for Evaluation” (National Park Service 1991b). The federal government’s role in Colorado history is important to understanding agriculture, community planning, conservation, education, entertainment/recreation, ethnic heritage, exploration/settlement, health/medicine, landscape architecture, military, politics/government, social history, and transportation.

Under the theme of agriculture, the federal government was instrumental in distributing land from the public domain for agricultural use and was instrumental in the manner that the public domain was used for grazing. For disbursement of land from the public domain, the Homestead Act was the principal mechanism used, though several later land disbursement acts and variations of the Homestead Act were utilized through time. For grazing, the implementation of the Taylor Grazing Act of 1934 and the establishment of the Grazing Service ended the free-range era and established highly regulated grazing on the public domain through an allotment system. This system has changed the way the range is used on a landscape level and has resulted in permanent range improvements that would not have taken place otherwise. Archaeological remains of importance may be associated with the construction and use of these range improvements.

The theme of community planning and development is represented by post offices as core elements and important institutions of developing communities. As hubs of activity in a community, archaeological remains may exist at historic post offices that might contribute to our understanding of the range of activities that occurred there beyond their basic mail delivery function. In many instances, this information may be

difficult to derive because early post offices were not discrete entities but instead were part of a more all-encompassing operation, such as a store or a stage stop.

Conservation is a very strong theme for federal government sites. The realization that watersheds and timber resources required protection led to the establishment of forest reserves and, later, national forests beginning in the 1890s. National parks and monuments were set aside soon thereafter to preserve and interpret particularly outstanding resources on the public domain. Further protections of grazing lands through the Taylor Grazing Act of 1934 led to the establishment of the Grazing Service, later the Bureau of Land Management. Large-scale irrigation projects by the Reclamation Service/BOR were concerned with the retention of water for irrigation and the prevention of damaging floods. The Soil Erosion Service was established under the Department of the Interior in 1933 when the federal government recognized that soil erosion was a major cause of reduced crop yields. The agency worked closely with the CCC and became the Soil Conservation Service (renamed the Natural Resources Conservation Service in 1994) under the Department of Agriculture. With the authorization of the Soil Conservation Act of 1935, the agency continued the focus on reducing erosion. A conservation ethic on a broader scale was instituted through projects implemented by the CCC during the 1930s and 1940s. It can be expected that archaeological materials connected to conservation activities exist that may contribute to our understanding of the process of conservation and the individuals involved in the projects.

In addition to putting the unemployed to work, the CCC and WPA projects implemented by the federal government also served to educate the individuals within the programs. For many, this education was in the form of skills learned that enabled them to find employment and support themselves as their life work. For others, the classroom study made available at the CCC camps was fundamental to their ability to continue their education where it otherwise would have ceased because of the demands of finding work during the Depression. It is uncertain to what degree archaeology may contribute to our understanding of this theme.

The entertainment/recreation theme is represented by the development of public lands for recreation by the U.S. Forest Service, National Park Service, state government, and various municipalities, punctuated by the involvement of the CCC during the 1930s and early 1940s. Archaeological deposits may exist at these sites that can provide important information about the manner in which they were used and the individuals who used them.

The interaction of the federal government with Native American groups at Indian agencies enables us to explore the theme of ethnic heritage. Archaeological deposits of importance to this theme have already been demonstrated to exist by a few investigations at the agencies and surrounding Native American camps. Indian agency sites are significant in documenting the physical manifestation of U.S. government-Native American relations over time and across space, contributing to an understanding of the social and economic consequences of government involvement with Native American groups. Only a few agencies were established in the state, most with locations that are at least generally known. These agencies would likely contain important archaeological data pertaining to government-Indian relations, annuity distributions, and agency personnel administrative and personal activities. It is expected that Native American habitations would be located close to the agencies and these would also provide important information about the impacts of government relations and integration of annuity and trade goods into traditional material culture. Significantly, work at battlefields, such as the site of the Sand Creek Massacre, also enables this topic to be addressed. In addition, racially segregated CCC camps also provide another possible set of sites where important archaeological data concerning racial and ethnic heritage may be obtained. Unlike some other states, no Indian CCC camps were established in Colorado, but other racial or ethnic groups may be represented.

Evidence of government exploration parties would be important in explaining the exploration/settlement theme. Although expected to be extremely rare, these sites are expected to be completely archaeological, and any data that they contain would be important. The activities of land surveyors and the GLO in readying land for public acquisition and the distribution of those lands would also apply to the settlement portion of the theme. Actually being able to identify sites pertaining to these activities



is expected to be difficult and relevant archaeological data to the theme would need to be considered carefully.

The only sites expected to contribute to the health/medicine theme would be CCC camps, BOR work camps, and military installations, where high standards of hygiene were mandated by regulations, and at federal hospitals. At federally operated camps and facilities, not only were there regulations pertaining to placement of bathing and latrine facilities, but the manner in which trash disposal was to be carried out was stipulated. In addition to placement of facilities, camps were likely to have had hospitals or infirmaries, with archaeological deposits that would be expected to be very informative about the health of residents and the level of care and medical practice in place. Less directly, it may be possible to ascertain to what degree health and safety practices were being conformed with and overseen and uranium mines regulated by the federal government during the Cold War.

U.S. Forest Service and National Park Service facilities are expected to be demonstrative of Landscape Architecture. Beginning in 1910, the Forest Service began establishing guidelines for the construction of buildings and administrative and recreational complexes, becoming more formalized during the CCC era. In general, significance can be ascribed on individual architectural merits or on a landscape level. Archaeology can add significant information in this regard in interpreting functions of structures where accompanying material culture deposits exist.

The military theme is represented by numerous forts, camps, and other facilities in the state dating from 1835 to the present. Archaeology has had a long relationship nationally in the investigation of military posts and has been shown to be able to provide important information about site layout, function of structures and features, and everyday camp life. Some work in this regard has been undertaken at Fort Garland, and it is expected that similar work could be beneficial for any of the other historic military establishments in the state. In recent years, Cold War-era sites have become the subject of historical inquiry. Similar uses of archaeology may be pertinent to the investigation of these more recent military facilities.

The politics/government theme is manifested largely in the historical landscape that has developed as the result of governmental policies and actions. The political process, its relationship to the state's economic institutions, and the frictions it created, especially with the rise of federal power after 1890, are important subthemes. Archaeologically, cultural properties of this theme have potential to document or explain the importance and impacts of the federal government on the state's economy and lifeways through analysis of large-scale settlement patterns and site distributions reflecting changing levels of interaction and influence. Significance is to be found in documenting the ways national forests and national parks shaped the cultural landscape of Colorado. The potential also exists to document changing technologies and methods of natural resource protection, public service priorities, and infrastructure.

The theme of social history is one in which sites relating to the federal government can contribute considerable important information. The CCC represents a ground-breaking and deeply influential period of government programming known as the New Deal, designed to bring the nation out of the Great Depression. As a principal New Deal program, the CCC offered the opportunity for unemployed men and youths to work with public agencies on conservation projects to improve national infrastructure. The activities of the CCC had a significant impact in the establishment of the management role of public land agencies toward ethical conservation standards and the development of public access and public facilities. The total scope of CCC activities left a significant physical impact on public landscapes across the country. It also left a significant social impact with regard to work-skills training, national solidarity, social responsibility, and the role of the government during national crisis.

McClelland neatly summarizes the significance of sites associated with the pervasive New Deal period:

The outstanding significance of the programs with which these features are associated and the tremendous importance of these resources to the localities and states to which this legacy was entrusted

and to the American public as a whole make a strong argument for the eligibility collectively and individually of associated features. The construction of these features affected the lives of those who created them and those who benefited from their use. These programs – intended to provide economic relief and training – altered the course of history in recreation, conservation, social history and economics. They left a rich legacy characterized by individuality, creativity, and diversity which can never be replicated. (1998:511)

The transportation theme can be tied to the federal government on a landscape level, beginning with the 1869-1870 railroad construction land grants. Certain highways in Colorado were designated as part of the U.S. federal interstate highway system beginning in the 1910s and were partly funded with federal money. The major highway systems now in place were the result of federal policies of the 1940s and 1950s. Also beginning in the 1910s was initiation of road building on national forest and National Park Service lands specifically to enable access by the general public for recreation. The availability of a major workforce through the CCC enabled considerable road construction on federal lands in the 1930s and early 1940s. Although the roads and highways are the dominant feature of this infrastructure development, some construction and maintenance camps can be expected. These camps may have archaeological value in demonstrating the level of technology and the specific activities with which they are associated, such as bridge building or grading, and can contribute to our understanding of camp life.

## **PERIODS OF SIGNIFICANCE**

Any site that can be linked to the early period of government exploration or scientific survey (1806-1875) is important in light of the lack of documented sites. Archaeological sites dating between the 1890s and 1930s are important for their association with the rapid and widespread incorporation of lands under federal control in Colorado and may be tied to specific periods or events within this general process. Also, sites associated with specific military or war efforts are important because of the potential to demonstrate a direct historical link and the general paucity of knowledge regarding the archaeology of such sites.

## **INTEGRITY**

As with all archaeological sites, integrity of location, materials, and association are most critical for validity of data and its ability to provide important information. At many sites, integrity of design will be important because the composition and relationship of features will be of primary concern. In a few instances, particularly at sites where CCC or WPA labor was involved, integrity of workmanship may be important. Setting and feeling will rarely be factors in considering the importance of archaeological deposits.

## **RESEARCH NEEDS**

### **Quality of Recovered Archaeological Data Relevant to the Theme in Colorado**

Although the number of archaeological data recovery projects conducted at sites associated with the government theme have been few, the quality of the data has been quite good. Work at Fort Garland has been rather extensive and is ongoing. The results so far have added to our knowledge of the function of different elements of the fort and the social setting of its inhabitants. It is hoped that continued excavations there will be equally productive. In contrast, work at Fort Massachusetts was not well reported. It is expected that deposits there have potential to add considerably to our knowledge of early military history in Colorado, but the materials recovered from the site thus far have not been used to their potential. Work at the Sand Creek Massacre site was well designed for the specific purpose of identifying the location of the Cheyenne camp that was attacked (National Park Service 2000). In the process, some sense of where troops were situated, the course of the fighting, and the escape route used by the Indians was gained that enabled comparisons to be made with historical accounts. The Ludlow Massacre site is another well-designed project that has specific objectives for the archaeology. These include specifics about the massacre, layout of the strikers' camp, and the social situation of the workers being investigated, but more importantly, the data are being used as a way

to address social issues on a larger scale, particularly the struggle of labor against company oppression using a Marxist, or Conflict, perspective. The project is not directly within the theme of government, but government is clearly an element because it was government policies toward business that resulted in the climate at Ludlow, and there were National Guard troops utilized to combat the strikers.

Two projects have been conducted at Indian agencies that have resulted in good quality data. Work at the 1<sup>st</sup> Los Pinos Agency near Cochetopa Pass identified Ute households occupied during the agency period and provided considerable information about acquisition and incorporation of trade goods into Ute households through annuity goods distribution at the agency. Work at the 2<sup>nd</sup> Los Pinos Agency in the Uncompahgre Valley identified specific agency structures and collected artifacts important to our understanding of their function.

Only one archaeological project in Colorado has considered a prisoner-of-war camp. The National Park Service tested the prisoner-of-war camp at Fort Carson in 1995. Unfortunately, the camp retains insufficient integrity to be National Register eligible because of subsequent disturbance (Connor et al. 1999).

### **Potential for Good Quality Archaeological Data to Exist for the Theme at Sites in Colorado**

The few archaeological data recovery projects conducted at sites associated with the government theme have demonstrated that considerable important information can be gained through archaeological investigation. Some site types, such as Indian agencies, are quite scarce and any archaeological information will add considerable important information because specifics about agencies and life there are quite limited. Information about early U.S. military and Colorado Volunteer camps and posts is quite limited and few sites are currently known. It is not known if archaeological data in good context can be expected at these short-term sites, but it is expected that good data are likely. Except for Fort Garland, archaeological work at military forts is lacking. Considerably more information from other forts would be desirable for both specific and comparative data. It is expected that good archaeological data should exist at National Guard camps established during labor uprisings throughout the state if the sites can be identified. Short-term military installations from World War I and World War II, including Camp Hale, should contain important archaeological data about camp life and other activities at the camps despite large areas of the camp being reclaimed by removing debris, plowing, and reseeding. The sphere of influence of Camp Hale beyond the boundaries of the site itself extends for a considerable distance into the surrounding terrain where associated sites and isolated finds are present. Of particular interest would be the major prisoner-of-war camps and their satellite labor camps throughout the state.

An archaeological assessment of Camp Amache, the Japanese internment camp near Granada, was carried out in 2004 and was found to have excellent integrity in terms of its archaeological features and deposits (Carrillo, Killam et al. 2004). A wide variety of new research avenues were an outcome of the assessment project, many of which may be applicable to prisoner-of-war camps and, even, government-controlled work camps. Some CCC and WPA work camps, construction camps from BOR projects, and highway construction camps have been recorded with archaeological data recovery potential in mind and appear to contain good quality data in many instances.

Among the sites with questionable archaeological data recovery potential are sites in urban settings, such as National Guard armories or military installations that have grown into towns and cities, or become industrial components of World War II and Cold War-era military sites, or bureaucratic offices. At some World War II and Cold War-era sites, toxic contamination and unexploded ordnance is of considerable concern in some situations and may outweigh the benefits of archaeological data recovery.

## **Known or Potential Sites within the Theme in Colorado That Should Be Sought, Reexamined, or Reevaluated**

Sites from the earlier federal exploration expeditions to the state are certainly important and their identification is considered a high priority, but because of the transitory nature of the expeditions, actual targeting of these sites may not be possible. The only site from this period identified to date has been Pike's Stockade (5CN75) near Sanford. The site was listed as a National Historic Landmark in 1961 and on the National Register of Historic Places in 1966, with an updated National Register nomination prepared in 1975. A replica of Pike's Stockade has been erected at the site, but no archaeological work has been conducted there to verify that it is indeed the location that Pike described in 1807. A second Pike's Stockade, near Pueblo and occupied in 1806, is another site that may have potential to be found and have archaeological remains in association (Scott 1999:47).

Military forts and camps are held in considerable historical esteem in the state but have been subjected to only a limited amount of archaeological investigation. A compilation of historic military facilities can be found in Scott (1999). Fort Massachusetts (5CT30) was reportedly subject to excavation by students from Trinidad State Junior College during the summers of 1964–1966. The excavations were minimally reported and the artifacts are held by the Colorado Historical Society. The materials from the excavations should be reexamined, and the site itself should be reevaluated in terms of the archaeological work that was done there and the potential for important data that might remain. Fort Garland (5CT46) has been extensively excavated with work conducted from 1992 to 1996 (Bond 1992-6; 1996a; 1996b). Archaeological work at the site continues; Adams State College conducted an archaeological field school in 2003 and 2004. The location of Fort Wise (Old Fort Lyon; 5BN394) is known and archaeological testing was conducted by the Boggsville Historic site/University of Colorado at Colorado Springs Field School in Historical Archaeology in 1999. Considerably more work remains at the site to characterize its historical archaeological deposits. The military signal station on Pikes Peak from 1873 to 1888 has been recorded (5EP341), but has not been well researched; it likely has not been evaluated in terms of its archaeological potential. The original site of Fort Lewis (Cantonment at Pagosa Springs; 1878-1880) has been recorded (5AA65), as has its second location (Cantonment on the La Plata; 1880-1891; 5LP1969). Neither of these sites has been well recorded, and historical archaeology has yet to be considered for them. The Cantonment on the White River (5RB2247-2248) is the core of the town of Meeker. As a result, individual structures of the original post have been recorded and archaeological testing in the yard of one of the structures was carried out with no deposits relating to the military use being found (J. C. Horn 1998). Because of the built environment, archaeological evaluations and recovery of archaeological materials related to military use of the site is expected to be quite difficult. Fort Crawford (Cantonment on the Uncompahgre; 1880-1890) has been poorly recorded (5MN848). It clearly has archaeological deposits of importance, but, after abandonment, the site was farmed for many years, so visible surface remains on the site are scarce and disturbed. In addition, the site is on private land that is currently being developed for housing and has been subject to looting by local treasure hunters using metal detectors. Fort Logan has seen continued use and development since it was established in 1887. It has been recorded as 5DV694, but the focus has been on attributes other than archaeology. It is unclear what archaeological potential it might hold, but the extensive built environment suggests that access to undisturbed deposits of importance may not be possible very readily.

National Guard camps are similar to earlier Colorado volunteer military camps in that they were temporary in nature and often made use of existing facilities, rather than resulting in new construction. As a result, the camps associated with National Guard occupations during labor disputes are not well known and are virtually undocumented. They are unexplored archaeologically, but may have archaeological evidence that can be recognized. In a few instances, ancillary facilities were constructed, such as Fort Peabody on Imogene Pass between Telluride and Ouray to discourage removed strikers from returning to the mines above Telluride in 1904. National Guard armories are distinctive structures around the state that often served important social functions in addition to their military function. Twenty armories have been recorded, and several are listed on the National Register of Historic Places; however, none have been evaluated for their

archaeological values. The National Guard rifle range and training facility at Camp George West near Golden is listed on the National Register of Historic Places (Simmons and Simmons 1992), but the focus has been on attributes other than archaeological values.

Camp Amache (5PW48) is listed on the National Register of Historic Places, but archaeological values were not addressed in the nomination (Simmons and Simmons 1993). Since then, a complete archaeological inventory and some monitoring has taken place at the site that confirms the presence of important archaeological materials, but more formal archaeological investigations at the site have yet to take place (Carrillo 2001; Carrillo, Killam et al. 2004). Only three POW camps have been recorded in the state. One is in the town of Las Animas (5BN475), which was recommended as National Register-eligible. The second is the POW camp at Fort Carson, which has been shown to have insufficient archaeological integrity to be significant (Connor et al. 1999). The third is in rural Weld County (5WL768) and is listed as historical archaeological but was recommended as not eligible. Considering it is the only rural POW camp identified in the state so far, perhaps its eligibility should be revisited.

The various military installations from World War II and the Cold War era have received considerable attention in recent years, but this attention has mainly been in regard to their association with the historical theme and their being representative complexes or containing individual architectural entities of importance. For the industrial components of these sites, this focus is probably appropriate, particularly considering that archaeology could expose workers to chemical or other hazards that may be present from weapon production and storage. In addition, there is an absence of research questions about that period that are amenable to archaeological data recovery. It is possible that the archaeology of households at some of these facilities might provide meaningful and important data. Such studies may be more appropriate under the communities theme. In contrast, archaeological work at Camp Hale can be expected to be very productive in providing comparative data for other military installations from World War II and for other large-scale work camps, including CCC camps and camps associated with federal construction projects.

Several battle and massacre sites involving the military are included in the state database. These include the Pfeifer Battle site (5AA626) near Pagosa Springs in Archuleta County; the Battle of Cumbres Pass of 1849 (5CN481) in Conejos County; the Sand Creek Massacre site of 1864 (5KW28) in Kiowa County; the Milk Creek Battle site (5RB982) and the Meeker Massacre site (5RB2664) of 1879 in Rio Blanco County; the Beecher Island Battleground (5YM40) of 1868 in Yuma County; and the Ludlow Tent Colony/Monument/Memorial/Massacre site (5LA1829) in Las Animas County. All of these sites are clearly historical archaeological in nature, but only two have had an appreciable amount of archaeological work conducted at them.

Archaeological work at the Sand Creek site has focused upon verifying its actual location (National Park Service 2000). A considerable number of artifacts were recovered, such as ammunition, military uniform accoutrements, and horse tack, that verified the battle site along with items of Native American use that confirmed the Indian camp (Scott 2000). The artifacts were sufficient to enable archaeology to be listed as one of the areas of significance in the site's listing on the National Register (Holtman 2001).

The second battlefield at which a considerable amount of archaeological work has been performed is at the Ludlow Tent Colony (e.g., C. C. Horn 1998; Jacobson 2002; Ludlow Collective 2001; McGuire and Reckner 2002; Wood 2002a). The focus of the project has been on the striking coal miners and the camp they resided in while under siege by the Colorado National Guard. Consequently, the project focuses less on characteristics of the military organization and more on the impact of the strike and the oppression of the company owners and the National Guard on the striking workers and their families.

In complete contrast to the investigations at Sand Creek and Ludlow is the wholesale looting that has recently taken place at the Milk Creek Battle site (5RB982). A metal detector enthusiast with an interest in history has unearthed a large quantity of artifacts from the battle site and exposed the remains of two of its military casualties. None of the work was done with any provenience control, and damage to the site has been extensive. The looter has a website where he proudly displays his plunder and human remains and attempts

to gain support from military veterans to exhume the bodies so that they can be given a proper burial. Attempts by professional archaeologists to intervene in order to collect basic archaeological information in the face of the atrocious situation have been unsuccessful, largely because of failure to obtain sufficient funds to proceed (James A. Zeidler, Center for Environmental Management of Military Lands, Colorado State University, personal communication to Jon Horn, January 27, 2005). The looting of the Milk Creek Battle site serves as an example of how vulnerable many of our most important historical archaeological sites are when they become the focus of determined treasure hunters and looters.

Any and all sites that can be attributed to Indian agency period and early military presence in Colorado should be actively sought and documented. The Los Pinos Indian Agency in Saguache County (5SH1021), occupied from 1869 to 1875, has had a considerable amount of archaeological work performed on its outlying Ute Indian component (Pfertsh et al. 1996), but the actual location of the agency appears to have been obliterated by a ranch that was subsequently situated on the site; additional work may reveal remnants in buried contexts. The Los Pinos Agency was moved to the Uncompahgre Valley in 1875 and has been recorded as 5OR139. It has been recently subjected to extensive testing (Baker 2004a). Two earlier manifestations of this agency have been recorded in the San Luis Valley under the misnomer Los Pinos Agency I (5CN488) and Los Pinos Agency II (5CN501); both were known as the Conejos Agency. Both sites were recorded in 1974 and do not have National Register evaluations associated with them; it is unlikely that archaeological manifestations were considered at that time. The site of the original White River Agency was recorded as 5RB4409 in 1977. Again, no National Register evaluation is associated with the site, and it is unlikely that archaeological values have been considered. The relocated agency was recorded in 1975 as the Meeker Massacre site (5RB2664). It is noted as being historical archaeological, but no National Register evaluation was made. Several other Indian agency locales remain to be identified and assessed. These include the agency for the Uintah Utes that was evidently at Breckenridge in at least 1861 and 1862; the Middle Park Agency at Steamboat Springs from 1866-1867; the Special Ute Agency at Denver, present from 1869 to 1875; and an agency for the Cheyenne and Arapaho at Bent's New Fort at Big Timbers on the Arkansas River near La Junta, beginning in about 1854. In addition, an agency for the Arapaho was established at Bent's New Fort at Big Timbers. William Bent served as Indian agent in 1859, and when the military took over use of Bent's New Fort in 1860, it continued to serve as the agency and was specified as the Indian agency for the Cheyenne and Arapaho Reservation following the 1861 Treaty of Fort Wise. The reservation established by the treaty was between the Arkansas River and Big Sandy Creek and extended to within six miles of the mouth of the Huerfano River. The agency was moved to Point of Rocks in 1863, and improvements were made there in 1864. However, the agency was abandoned after the Sand Creek Massacre in November 1864 (Bowman 1881). The use of Bent's New Fort as an Arapaho and Cheyenne Indian agency is an important aspect of the use of the fort that archaeological investigation may play an important role in illuminating. In addition, identification of the remains of the short-lived agency at Point of Rocks would also seem to be of high priority.

Later Indian agency sites and Indian schools may also have archaeological values of importance. Included among these are the Southern Ute agency at Ignacio and the Ute Mountain Ute agency at Towaoc, both of which are still in use. Prior to the establishment of the agency at Towaoc in 1898, an agency had been established at Navajo Springs when the Ute Mountain Utes separated from the Southern Utes in 1895. Two Indian boarding schools were established in Colorado. The Teller Institute operated in Grand Junction from 1886 to 1911 and had Ute, Navajo, Papago, Hopi, Shoshone, and Pima students in attendance. When Fort Lewis was decommissioned as a military installation in 1891, it was converted into an Indian elementary boarding school and had Ute, Navajo, Sioux, and Apache students in attendance. In 1911, the federal government changed its Indian education policy to one that allowed Indian children to be educated where they lived. Both schools were turned over to the state of Colorado, and the Teller Institute was discontinued. The school at Fort Lewis was changed to a high school and was both a high school and two-year college between 1927 and 1933. After 1933 it was a college only and moved to Durango in 1956. Fort Lewis College still has a policy of waiving tuition for Native American students. The Teller Institute (5ME761) and the original Fort Lewis Indian school (5LP1969) have been recorded, but both should be rerecorded and their archaeological values assessed.

Sites relating to land survey and the activities of the GLO are transitory and of relatively low importance. GLO offices and post offices can probably be pinpointed fairly well, but the value of any associated archaeological remains will need to be assessed case by case. About 100 post offices have been recorded in the state; it may be that none have been assessed for their archaeological values. Probably among the best documented sites are those related to land management. However, most of these recordings have been focused on attributes other than archaeological values. A high priority should be placed on revisiting these locations for the purpose of evaluating their archaeological values and identifying and recording and evaluating the archaeological values of administrative sites for which the architectural elements are no longer extant.

Little has been done to document the camp facilities associated with the numerous public works projects carried out, mainly by the Reclamation Service, later known as the Bureau of Reclamation. These should be relatively easy to identify because they will be close to the dams, tunnels, or irrigation canals that the Reclamation Service constructed. Few or no architectural remains should be expected at these sites, and their values will come from the tremendous information they can provide through archaeology. Records for the projects that the camps were associated with are abundant, but these generally contain very little about the layout, function, and activities at the camps themselves. Archaeologically similar in all regards are camps associated with construction of roads and highways. Only a few of these sites have been recorded, and none has been archaeologically investigated, though the few recorded examples appear to have excellent data recovery potential and can reasonably be expected to provide important information about camp life and the technologies used for the road building.

Numerous general topics for the archaeological investigation of federal government sites can be suggested. A useful area of investigation is to assess the role of archaeology in confirming or contradicting our understanding of the role of the government gleaned from the huge body of literature; that is, documenting the extent to which government-related historical records adequately represent the range of activities at sites. For instance, approximately 80 cubic feet of documentary materials exist in the CCC Collection at the Colorado State Archives. The records originated with the Colorado State Department of Public Welfare (CSDPW) and span the years 1933-1942. The bulk of the collection dates between 1936 and 1942 when the CSDPW was the official state selection agency for CCC enrollment. The collection includes enrollment records; reports; manuals and handbooks; correspondence; rosters; station lists; publications; maps; publicity; photographs and other photographic media; and miscellaneous. The archaeological record of CCC camps would provide an ideal forum to examine characteristics of site layout, social organization, and other aspects of the daily life of the camp occupants. Such aspects are likely to be neglected at a site-specific scale of analysis in the literature, and camps should be considered more often in terms of internal social structures and dynamics. To date, only three of the 16 recorded CCC camps have had their archaeological values taken into consideration, and in all three situations the archaeology was considered to have important data recovery potential. In some cases archaeology seems to have been taken into consideration through a suggestion that additional data are needed.

Other research areas include assessing the material culture manifestations of various government-related activities, services, and land-use systems; documenting the sometimes dominating impact of the federal government on the economy or lifeways of populations subject to federal regulations (such as the Taylor Grazing Act), including the effects on regional and localized patterns of settlement, site structure and composition; documenting the government's impact or contribution to the historical growth of infrastructure in Colorado (including trails, roads, aviation, and communication) in a context of changing design and technology and impacts to the economic and social landscape; investigating the impact of federal involvement with Native American populations and settlement systems; investigating the potential for archaeology to document the dynamic interplay between government agencies and various client groups (such as the BOR and irrigation districts or the BLM and livestock associations); and investigating the extent to which government-related historical records adequately represent the range of activities at sites.

**Table 47.** U.S. army posts, camps, and forts in Colorado before World War I (Scott 1999).

Name	Location	Date
Camp Livingston	Near Julesburg, Sedgwick Co.	1835
Fort Massachusetts (5CT30)	Near Fort Garland, Costilla Co.	1852-1858
Camp Buchanan	Near Masters, Weld Co.	1857
Camp Spooner	So. Platte River near Denver, Denver Co.	1858
Fort Garland (5CT46)	Fort Garland, Costilla Co.	1858-1883
Denver Military Depot	Denver, Denver Co.	1859-1865
Old Fort Lyon (Fort Wise) (5BN395)	Near Bent's New Fort, Bent Co.	1860-1866
Fort Schofield	Hot Sulphur Springs, Grand Co.	1860s
Virginia Dale Station	Larimer Co.	1865
Reed Springs Stage Station	Smoky Hill South Trail, Elbert Co.	1867
Fort Cedar Point	Near Cedar Point, Elbert Co.	1867-1868
Camp Rose (Toll Gate, Benny Station)	Near Cochetopa Pass	1867-1869
Fort Reynolds (Marcy's Camp)	Arkansas R. near Booneville, Pueblo Co.	1867-1872
New Fort Lyon	Near Las Animas, Bent Co.	1867-present
River Bend Military Post	Big Sandy Creek, Elbert Co.	1870
Kit Carson	Old Kit Carson, Cheyenne Co.	1872
Pikes Peak Military Reservation and Signal Station (5EP341)	Pikes Peak, El Paso Co.	1873-1888
Camp Custer	Morrison, Jefferson Co.	1877
Fort Lewis (Cantonment Pagosa Springs; 5AA65)	Near Pagosa Springs, Archuleta Co.	1878-1880
Mancos River Cantonment	Near Mancos, La Plata Co.	1879
Fort Flagler	Near Durango, La Plata Co.	1879-1880
Cantonment on White River (White River Military Reservation; 5RB2247-2248)	Meeker, Rio Blanco Co.	1879-1883
Fort Crawford (Cantonment on the Uncompahgre; 5MN848)	Near Colona, Montrose Co.	1880-1890
Fort Lewis (Cantonment on the La Plata; 5LP1969)	Near Hesperus, La Plata Co.	1880-1891
Fort Meeker (Camp Meeker)	Rio Blanco Co.	1887
Fort Logan (Camp Logan, Fort Sheridan, Camp Cooper; 5DV694)	Fort Logan, Denver Co.	1887-present



**Table 48.** Colorado cavalry and volunteers posts, stations, camps, and forts (Scott 1999).

Name	Location	Date
Cheyenne Wells	Near Cheyenne Wells, Cheyenne Co.	1859
Gilette Station	On Overland Trail, Sedgwick Co.	1859
Lillian Springs Ranche (Sand Hill Springs)	Logan Co.	1859
Valley Station	On Overland Trail near Sterling, Logan Co.	1859
Butts Ranch and Stage Station	Near Fort Sedgwick, Sedgwick Co.	1860
Dennison Ranch and Station	Logan Co.	1860
Camp Curtis	Near Greeley, Weld Co.	1860-1864
Antelope Station	On Overland Trail, Sedgwick Co.	1860s
Fairplay	Fairplay, Park Co.	1860s
Nine-Mile Bottoms	Near Las Animas	1860s
Riverside Stage Station	On Overland Trail, Logan Co.	1860s
William Young Ranch	On Fountain Creek near Colo. Springs, Pueblo Co.	1860s
Camp on North Bank of Arkansas River	Pueblo Co.	1861
Camp Gilpin	Near Central City, Gilpin Co.	1861
Golden City	Golden, Jefferson Co.	1861
Camp Weld (Fort Weld, Camp Elbert; 5DV5638)	Denver, Denver Co.	1861-1865
Bents Old Fort (Fort William)	Near La Junta, Otero Co.	1862
Camp Caldwell	Arkansas River near Old Fort Lyon, Bent Co.	1862
Camp Cass	On Fountain Creek near Colorado City, El Paso Co.	1862
Camp Clark	Near Fort Lyon, Bent Co.	1862
Camp Cobb	Near Colorado City on Fountain Cr., El Paso Co.	1862
Camp Colorado	Camp Creek near Colorado City, El Paso Co.	1862
Camp Davidson	Near Denver	1862
Empire City	Clear Creek Co.	1862
Camp Foutain Qui Bouille	El Paso Co.	1862
Camp McKay	Arkansas River	1862
Fort Moore (Washington Ranche, Fort Washington)	On Overland Trail near Sterling, Logan Co.	1862
Camp More	Headwaters of Plum Creek, Douglas Co.	1862
Camp Pleasant (Pleasant Valley Camp)	Purgatoire River, Las Animas Co.	1862
Pueblo	Pueblo, Pueblo Co.	1862
Camp Relief	Lincoln Co.	1862
Camp on Rio Las Animas	Las Animas Co.	1862
Camp Ross	Arkansas River	1862
Camp Tappan	Arkansas River	1862
Washington Ranche (Moore's, Fort Moore)	Logan Co.	1862
Fort Baker	Near LaPorte	1862-1864
Camp Collins (Camp Point of Rocks, Fort Baker)	Near Fort Collins, Larimer Co.	1862-1864
Camp on Arkansas River	Near Bent's Old Fort, Otero Co.	1863
Camp Brown	Arkansas River	1863
Camp Chivington	Near Denver, Denver Co.	1863
Coberly's Ranch (Halfway House)	On Plum Creek, Douglas Co.	1863
Fort Curtis (Camp Curtis, Fort Huerfano)	Arkansas River near Avondale, Pueblo Co.	1863
Fort Hooker	Middle Park	1863
Hot Sulphur Springs	Colorado River, Grand Co.	1863
Los Conejos	San Luis Valley, Conejos Co.	1863
Camp Mead	North Park, Jackson Co.	1863
Camp Stillwell	Hot Sulphur Springs	1863
Guadalupe	Near Conejos, Conejos Co.	1863-1864
Canon City	Canon City, Fremont Co.	1863-1864

<b>Name</b>	<b>Location</b>	<b>Date</b>
Spring Bottom Stage Station	Near Rocky Ford	1863-1864
Camp Fillmore (Camp on the Arkansas)	Many locations along the Arkansas River	1863-1865
American Ranche	On Overland Trail, Logan Co.	1864
Camp Anderson	Fountain Creek	1864
Camp on Arkansas River (Camp Fillmore)	Arkansas River	1864
Camp Baxter (Baxter Ranch)	Arkansas R. near Pueblo Army Air Base, Pueblo Co.	1864
Camp at Boulder	Boulder Co.	1864
Camp Canby	Near Camp Lincoln	1864
Fort Canby	Near Pueblo, Pueblo Co.	1864
Fremonts Orchard Stage Station	Near Fort Morgan, Morgan Co.	1864
Camp at Irons Springs	Otero Co.	1864
Camp on Kiowa Creek	Adams Co.	1864
Fort Lincoln	Near Spring Valley, Douglas Co.	1864
Point of Rocks	On Arkansas River near La Junta, Otero Co.	1864
Camp Sanborn (Camp at Fremont's Orchard; 5WL98)	Weld Co.	1864-1865
Camp Wheeler	Near Lincoln Park, Denver, Denver Co.	1864
Fort Wynkoop	On Fountain Creek	1864
Camp Evans	Denver	1864
Junction Station	Near Fort Morgan	1864-1865
Camp Robbins (Living Springs Stage Station	Adams Co.	1864-1865
Fort Collins (5LR1362))	Fort Collins, Larimer Co.	1864-1867
Colorado City Log Fort and Stockade	Colorado City, El Paso Co.	1864-1868
Fort Sedgwick (Camp Rankin; 5SW24)	Near Old Julesburg, Sedgwick Co.	1864-1871
Bijou Basin	El Paso Co.	1865
Booneville	Arkansas River near Pueblo, Pueblo Co.	1865
Murray's Ranch	Morgan Co.	1865
Wisconsin Ranche (Bull Ranch)	Near Sterling, Logan Co.	1865
Fort Morgan (Camp Tyler, Post Junction, Fort Wardwell, Camp Wardwell)	Fort Morgan, Morgan Co.	1865-1868

**Table 49.** National Guard camps and facilities in Colorado (Scott 1999).

Name	Location	Date
Camp Cooper (Fort Logan)	Fort Logan	1889
Camp McIntire	Near Leadville, Lake Co.	1896
Camp Peabody	Central City, Gilpin Co.	1900s
Camp Bull Hill	Teller Co.	1903
Camp Elkton	Near Cripple Creek, Teller Co.	1903
Camp El Paso	Near Cripple Creek, Teller Co.	1903
Camp Golden Cycle	Near Cripple Creek, Teller Co.	1903
Camp Anaconda	Cripple Creek area, Teller Co.	1903-1904
Camp Independence	Near Cripple Creek, Teller Co.	1903-1904
Camp Libby	Near Cripple Creek, Teller Co.	1903-1904
Camp Telluride	San Miguel Co.	1903-1904
Camp Victor	Teller Co.	1903-1904
Rifle Range at Golden (Camp George West, 5JF145)	Near Golden, Jefferson Co.	1903-present
Camp Engleville	Near Trinidad, Las Animas Co.	1904
Camp Hastings	Near Trinidad, Las Animas Co.	1904
Fort Peabody	Imogene Pass, Ouray and San Miguel Cos.	1904
Camp Segundo	Near Trinidad, Las Animas Co.	1904
Camp Sopris	Near Trinidad, Las Animas Co.	1904
Camp Starkville	Las Animas Co.	1904
Camp Berwind	Berwind Canyon near Ludlow, Las Animas Co.	1904 & 1912
Camp McDonald	Near Golden, Jefferson Co.	1906-1910
Camp Buchtel	Near Golden, Jefferson Co.	1907-1910
Camp Bailey	Park Co.	1908-1912
Camp Palmer Lake	El Paso Co.	1910
Camp Wilder	Big Jimmy Gulch, Douglas Co.	1910
Camp Ludlow	Near Ludlow,	1913
Camp Walsenburg	Huerfano Co.	1913
Camp Trinidad	Las Animas Co.	1913-1917
Mobilization Camp	Probably Camp George West	1916
Camp Gunter	Pueblo, Pueblo Co.	1917
Camp Johnson	Raton Pass, Las Animas Co.	1936

**Table 50.** National Guard armories recorded in Colorado.

<b>Name</b>	<b>Location</b>	<b>Date</b>
Pueblo Armory (SPE612.8)	Pueblo, Pueblo Co.	1880-1889
Aspen Armory (SPT36)	Aspen, Pitkin Co.	1891
Grand Junction Armory (SME4907)	Grand Junction, Mesa Co.	1895
State Armory-Denver (SDV103.3)	Denver, Denver Co.	1898
Boulder Armory (SBL240.4)	Boulder, Boulder Co.	1898
Victor Armory (STL134.49)	Victor, Teller Co.	1900
Fort Collins Armory (SLR1546)	Fort Collins, Larimer Co.	1907-1922
Golden Armory (SJF180)	Golden, Jefferson Co.	1913
Brighton Armory (SAM120)	Brighton, Adams Co.	1920-1929
Delta Armory (SDT440)	Delta, Delta Co.	1921
Monte Vista Armory (SRN484.6)	Monte Vista, Rio Grande Co.	1921
Greeley Armory (SWL4108)	Greeley, Weld Co.	1921
Canon City Armory (SFN1642)	Canon City, Fremont Co.	1922
Craig Armory (SMF1250)	Craig, Moffat Co.	1922
Burlington Armory (SKC70)	Burlington, Kit Carson Co.	1926
Loveland Armory (SLR6834)	Loveland, Larimer Co.	1926
Denver Armory (SDV3390)	Denver, Denver Co.	1929
Las Animas Armory (SBN509)	Las Animas, Bent Co.	1956
Fruita Armory (SME7039)	Fruita, Mesa Co.	?
Ft. Morgan Armory (SMR1000)	Ft. Morgan, Morgan Co.	?

**Table 51.** Military installations in Colorado active during World War I or later.

<b>Name</b>	<b>Location</b>	<b>Date</b>
Fort Logan (Fitzsimons Army Medical Center,5DV694)	Denver Co.	1887-present
Camp George West (National Guard, 5JF145)	Near Golden	1903-present
Camp Baldwin	Overland Park, Denver	1917
Lowry Field (original)	Park Hill Golf Club, Denver	1924-1938
Las Animas Auxiliary Air Field	Near Las Animas	ca. 1934-1946
Lowry Field (Lowry AFB, 5AH797, 5DV712)	Near Denver	1937-1994
Arlington Auxiliary Army Air Field	Arlington, Kiowa Co.	1941- ca. 1944
Denver Arms Plant (Denver Ordnance Plant, 5JF1048)	Denver Federal Center	1941-1945
Buckley Field (Buckley Naval Air Station, Buckley Air National Guard Base, Buckley AFB)	Arapahoe Co.	1941-present
La Junta Army Air Field (La Junta Airport)	La Junta	ca. 1942-1945
Observation tower and barracks	15 mi south of Manzanola, Otero Co.	1942-?
Pueblo Army Air Base (SPE3752; Pueblo Memorial Airport)	Pueblo	1942-1945
Pueblo Air-to-Ground Gunnery Range	South of Timpas, Otero Co.	1942-1945
Denver Medical Depot	Denver	1942-1946
Camp Hale	Pando, Eagle Co.	1942-1965
Rocky Mountain Arsenal (5AM628, etc.)	Near Denver	1942-1982
Pueblo Ordnance Depot (Pueblo Army Depot, Pueblo Chemical Depot, 5PE2038, 5PE4267)	Near Pueblo	1942-1991
Colorado Springs Army Air Base (Peterson Army Air Field, Peterson AFB)	Near Colorado Springs	1942-present
Camp Carson (Fort Carson, 5EP602)	Near Colorado Springs	1942-present
Echo Lake Training Facility (Buckley Field Arctic Training Center)	Near Idaho Springs	1943-1944
Rocky Ford Auxiliary Air Field	Near Rocky Ford	1943-1946
Sky Ranch Airport	Aurora	ca. 1945
Unnamed World War II airstrip	La Junta Raceway	WWII
U.S. Air Force Academy	Colorado Springs	1954-present
Cheyenne Mountain Air Force Station (Cheyenne Mountain Operations Center)	Colorado Springs	1957-2006
Ent Air Force Base	Colorado Springs	1957-present
Falcon AFB (Schriever AFB)	Near Colorado Springs	1983-present
Consolidated Space Operations Center	Colorado Springs	1983?-present
Greeley Air National Guard Station	Greeley	?
Fort Carson Weapons Range	Pueblo	?
Airburst Bombing Range	Near Colorado Springs	?
La Junta Electronic Scoring site	Near La Junta	?
La Veta Military Operation Area	Near La Veta	?
Turquoise Lake	Near Leadville	?

**Table 52.** Prisoner of war and Japanese-American internment camps in Colorado.

<b>Name</b>	<b>Location</b>	<b>Date</b>
Camp Carson (5EP602)	Near Colorado Springs	1942-1946
Camp Greeley	Near Greeley	1942-1946
Trinidad Internment Camp (Camp Trinidad)	Near Trinidad	1942-1946
Camp Hale (5EA197, 5LK628)	Pando, Eagle Co.	1942-?
Camp George West	Near Rifle	1943
Rose Hill (Rocky Mountain Arsenal)	Denver	1943-1946
Camp Amache (Granada Relocation Center, 5PW48)	Near Granada, Prowers Co.	1941-1945

## CHAPTER 11. SUMMARY

**E. Steve Cassells**

### INTRODUCTION

A great deal of effort has gone into the writing of these chapters about historical archaeology in Colorado. Spanning the known historic database of what is now politically designated the state of Colorado, this text covers the period from the Native American presence near the time of the earliest Euroamerican contacts through the many cultural successions and modifications that followed. The first explorers and fur traders shared their discoveries with the outside world, leading to the opening of mining, which in turn led to the filling in and settling of the region from both the East and the Southwest.

Historic archaeology certainly has advantages over prehistoric archaeology because in the historical period, literate witnesses left a written record that can be compared with, and supplement, data from the physical evidence left behind in the ground. The surviving material culture that is typically studied by archaeologists as their primary source of data provides, at best, an incomplete story of the culture of its users. As an example, combining the content of online Wal-Mart and Sears catalogs of those companies' complete product inventories provides a fair representation of modern American material culture. However, if a future archaeologist had only that material record from which to learn about America, think what would be missed when trying to reconstruct and interpret life here in the twenty-first century.

The authors of this report are well prepared to recognize the difficulties in teasing cultural evidence out of the archaeological record. Using their skills in archival research to retrieve subtle clues from the written record and then combining that information with those data that they have meticulously recovered from the soil, they have begun to add to the mosaic of the knowledge of Colorado's past. Archaeology in its many forms does seek to tell stories about humanity, but what these authors have provided is more than just a simple narrative. They have attempted to construct a new map helping us to arrive at the answers to the big questions about human culture that social science has been grappling with for more than a century.

### The Big Questions

In journalism classes, budding journalists are taught to seek answers to the Five Ws: Who, What, Where, When, and Why. In some ways, archaeologists seek to answer the same questions.

In historical investigations, the *Who*, the identities of people, both individuals and groups, can be learned through legal documents and other written sources. Another *Who*-related topic, but one with more subtle evidence, is recognizing the age, gender, ethnicity, and social classes of inhabitants – questions seldom asked in archaeology a few decades ago. These identities can then, for example, be applied to the study of the division of labor or other relevant topics.

The *What* question is a bit broader and is highly dependent on specific research interests. It could include the more common identification of particular activities that took place at a locality, such as mining, railroad construction, or farming. An archaeologist looking at a common homestead might concentrate on domestic activities, view the homestead as part of a broader kinship network, or see it more broadly as an integral part of the regional economy.

The *When*, the time of site occupation or the date of a particular event, is fairly straight-forward. It can be found in relevant historical documents, such as deeds or tax rolls, as well as being determined through conventional dating techniques, such as <sup>14</sup>C dating of organic materials from the sites.

The *Where*, the location of past activities, would clearly be known if the site had already been located. However, in other cases where historic events might be known but the actual localities unidentified, the written historical descriptions that include landmarks may eventually lead investigators to the places they seek.

The last W, the *Why*, is the hardest question of all to answer. It has the potential to yield the least objective answers but perhaps also the most important. What is being considered with a *Why* is nonmaterial culture – the ideologies that often provide the foundation for behavior. These ideologies would include values, beliefs, morals, or other abstract notions that motivate behavior. Impugning motives to even *living* citizens is fraught with difficulty and has been shown to be subject to the biases of the observers. One has only to consider any current political controversy. If multiple reports of the same event are compared with each other, the reader might be led to wonder if all the reporters were actually witnessing the same thing. The prism through which an event is viewed will predispose the observer to arrive at particular conclusions. When that observation actually took place over a century ago, there may be a tendency today to consider the report more objective, but this is no more likely than a modern reporter's observations on a current political issue. For example, during the Victorian period, attitudes toward gender were considerably different, and women were often only shadows in the documents. A reader of those events might miss the myriad views that were simmering in the minds of the feminine minority.

## **THIS FINAL CHAPTER**

I was delighted to be asked to summarize this book dealing with historic archaeology in Colorado. I decided to participate in this endeavor because I owe a lot to the archaeological community of this State. It was here as a young undergraduate in the mid-1960s that I truly decided to embark on an archaeological career after spending a day with Larry Agenbroad, Marie Wormington, and Joe Ben Wheat at two Paleoindian bison kills near the banks of the South Platte River. Since then I have spent many years conducting archaeological work from the Plains to the western plateaus. Regardless of where I go, I will always treasure Colorado and the magnificence of its culture history and wish to give back what I can as repayment for its enriching my life.

What follows is my attempt to summarize the salient points written in this text by many of Colorado's leading historical archaeology specialists. Each of these sections below, I hope, will accurately reflect ideas included in the other individual chapters of this text.

## **SUMMARY CHAPTER 2: COLORADO'S PROTOHISTORIC AND HISTORIC NATIVE AMERICANS**

The goal of the chapter on Protohistoric and Historic Native Americans has been to acquaint Colorado prehistorians with the fundamentals of historical archaeology of Native Americans. The chapter



includes the introduction of terminologies and concepts, techniques, and specifically the uses of ethnohistory and historical archaeology in relation to the early traditions of Ute peoples. Themes associated with Protohistoric and Historic Native Americans in Colorado include linear resources, government, and settlements.

Colorado served as home to at least six Native American groups during Protohistoric and Historic times. These groups include the Eastern Shoshone, Apache, Navajo, Ute, Cheyenne, and Arapaho. In addition to these, there has been some tantalizing evidence of a small group of prehistoric Fremont who seem to have survived for centuries into Protohistoric times in the remote canyonlands of northwestern Colorado as a relic population, reminiscent of old Japanese soldiers holding out in the Philippines long after the end of World War II. But of all these aforementioned cultures, only the Ute have benefited from any appreciable study by archaeologists. And even the studies of the Utes, when compared with other subjects of archaeological research in the region, are limited.

No real connections between prehistoric ancestors and their more modern Native American Colorado descendants have yet been accomplished. This lack of connection is not unexpected because proving this sort of continuum has been rare in most parts of North America. The most successful undertaking to demonstrate a cultural continuum between prehistoric and ethnographically documented cultures in this region has been made between the prehistoric Puebloan peoples of the Southwest, including those in southwest Colorado (e.g., Mesa Verde) and their descendants, the modern Eastern and Western Puebloans of present-day Arizona and New Mexico (e.g., Hopi or Rio Grande).

The extensive work by Bill Buckles in western Colorado (Buckles 1971), attempting to discover a connection between ancestral Ute and the modern Ute, was largely unsuccessful. His exhaustive research demonstrated the difficulties of such an undertaking.

The bulk of Colorado's Protohistoric and Historic Native American cultures appear to have been late arrivals here, having already acquired horses after the 1680 Pueblo Revolt. The presence of the Ute and Apache-Navajo do predate the horse, with the Ute having the greatest potential for yielding information on the longest cultural continuum in Colorado.

The authors of the Protohistoric and Historic Native American chapter have provided a baseline for Ute cultural change with a cultural model covering Protohistoric and Historic periods (see Figure 3, page 41), and they encourage others to test and refine it with data recovered from future excavations of relevant sites.

The authors see the primary subject of study as the individual household, slowly building up a database from that micro level. They suggest that more attention should be paid to small lithic sites (both chipped stone and groundstone) that likely mark the localities of habitations. Ideally, ethnic (tribal) differences noted in the historic literature can someday be teased from the archaeological evidence, thus distinguishing Ute from other contemporaneous cultures.

## **IMPORTANT PROTOHISTORIC AND HISTORIC NATIVE AMERICAN RESEARCH AVENUES**

- The Ute archaeological record, as well as that of the other Plains equestrian cultures, is written in "household archaeology." It must be approached one household at a time.
- It is necessary to conduct systematic documentary research to learn where known encampments of the Late High Plains Equestrian Hunters (Hanson 1998) were located as was done for Sand Creek (Greene and Scott 2004; Scott 2000), Black Kettle's camp at the Village on Pawnee Fork in Kansas (Jones 2002), and by relic hunters at Summit Springs (Finnell Enterprises 1997). Fieldwork should then be conducted to locate, ground truth, and explore such sites. Once this

kind of work is accomplished and some baseline information is acquired, it should be possible to begin to pose questions and develop research designs for this category of resource.

- It is very important that good case studies of the currently identifiable Ute components, and particularly those where there is still evidence of architecture such as wickiups, be rigorously investigated while they are still visible on the landscape.
- Research should be continued to identify and investigate the rare genízaro-like archaeological components such as were present in the homes of Chief Ouray and a few other Ute leaders. It is possible that similar sites as yet undocumented may also exist for other Native Americans within Colorado.

### **SUMMARY CHAPTER 3: SETTLEMENTS**

The topic of settlements in this report is intended to include residential areas beyond single households. Settlements involve multiple households living near each other and presumably interacting on a regular basis and even sharing a common identity as members of their community. The scale of analysis ranges from the single households (but seen as part of a larger cluster) to neighborhoods, small villages, camps, mining districts, cities, and even larger metropolitan districts. There were also utopian settlements, company towns, and military installations.

Settlements do not exist by themselves. They are linked to other settlements by roads and railroads, and they supply workers to industry and agriculture. Settlements are most closely linked to the themes of linear features, ethnicity, industry, rural agriculture, and government.

A distinguishing feature of settlement analysis is viewing these extrafamilial clusters in terms of dynamic social interaction. From the most basic elements of physical placement of dwellings on the ground to the interplay of residents with government, the maintenance of a successful settlement requires ongoing negotiation. Without the ties of family to encourage social bonding and keep the peace, additional means are necessary to encourage harmony. How communities have achieved this (or failed) is of interest to social scientists.

#### **IMPORTANT SETTLEMENTS RESEARCH AVENUES**

- When identifying a region of study for settlements-themed sites, researchers should attempt to strike a balance between material remains, legal boundaries, and historic conceptions of places. For example, researchers may approach the same site as an element of a town or as an element of a rural mining district, depending on the project area and the legal boundaries of both the town and the district.
- Urban areas are incredibly dynamic, and many early remains have been disturbed by subsequent development. Some remnants still exist and can be located by a combination of archival research and excavation.
- Transportation-related sites in settlements cycle with changing modes of transport, but often follow the originally established patterns of circulation and land use. For example, stables are often replaced with automobile-related businesses, and pathways became roads or railroads.
- One of the main ways to identify sites that potentially fall under this theme is to search for the evidence of habitation, such as domestic architecture, personal items, furniture-related artifacts, and artifacts that reflect a wide range of activities, such as food-related artifacts that go beyond merely consumption and also include preparation and storage.

- After identifying domestic sites, archaeologists should attempt to differentiate the residences of single households from either the households of multiple individuals, such as group homes or residential hotels, or multiple households, as found in apartment buildings and tenements. Such a differentiation will likely require more than one line of evidence. This evidence includes historic documentation, architectural evidence such as specially built structures or the modification of formerly single-family homes, or food preparation and consumption remains that exceed those needed for a single family.
- When clusters of households are identified, investigators should undertake archival research as to whether the settlement was legally recognized as a town or existed as an informal settlement.
- It is important to try to distinguish between typical (“voluntary”) towns, company towns, utopian communities, and military installations. The nature of these settlements will likely be reflected in the historic record, but in the case of undocumented settlements, the material remains themselves should provide clues (e.g., company-built housing often lacks variety in form).
- Often the true archaeological potential of habitation sites lies not in structures themselves but in associated features such as cisterns, wells, and privies.
- Very few sites representing households made up of multiple individuals (such as boardinghouses or apartment complexes), institutional sites for communities (such as churches or schools), or commercial sites within settlements (such as stores or saloons) have been the subject of archaeological investigation. Identifying and investigating them should be a priority.
- Rich sites that have been previously recorded but have been understudied (e.g., Old Animas City, Dearfield, Camp Amache) should have return visits. Additional work using geoprospecting and remote sensing would be a valuable addition to work already completed. Some of these sites are highly visible and susceptible to looting and other threats to their integrity. Work needs to be done on them soon to aid in reevaluation and to mitigate adverse impacts.

## **SUMMARY CHAPTER 4: VICTORIAN MINING SETTLEMENTS**

Victorian mining settlements are a significant part of Colorado’s historic archaeological record. This community type is considered separately here, although there will be some overlap with the chapter on settlements in general. They are a somewhat specialized category focusing on the residential areas associated with the extractive industry of mining and are limited in time from the late 1865 to 1918. Themes associated with Victorian mining settlements include settlements, ethnicity, industry, government, linear resources, and recreation.

The authors see this settlement type evolving through three phases: incipient settlement phase; camp phase; and town phase. Victorian mining settlements are young enough in many cases to still have standing architecture. This quality has made them visible but, in some cases, has concentrated and focused the scope of study to those most obvious features. Their visibility has also made them more vulnerable to vandalism.

In some cases, these early mining settlements survive today as inhabited communities. Some original structures have been obliterated, whereas others have survived and some have been restored.

Victorian mining settlement archaeology is a complex subject. Very little archaeological excavation of these types of sites has been undertaken in Colorado. They deserve greater attention by historical archaeologists. The authors see this resource as having similar qualities to American Colonial settlements in the East, where American historical archaeology had its origins. There is a great potential for applying archaeological method and theory to their analysis.

## **IMPORTANT VICTORIAN MINING SETTLEMENTS RESEARCH AVENUES**

- Practitioners should take an inherently cultural view and develop and rely upon appropriate terminologies, models, and taxonomies relative to the culture of the Victorian Period. In this regard it is necessary to recognize and characterize both temporal and evolutionary differences among components, as well as the varying subcultures during Victorian times.
- It will be important to begin testing the potential significance of Victorian Period sites by actually investigating some at an intensive level. It will probably be best to select a representative series of settlements from different temporal periods and evolutionary stages and sort them out according to models of their archaeological attributes. Progress in attempting such work will probably be most informative and can prove or disprove the notion that these late assemblages of mass-produced goods can be distinguished one from the other and reveal new information about Victorian America.
- It is certainly appropriate to conduct historical archaeology studies for humanistic purposes, such as at the Ludlow Project, without expecting them to produce dramatic new insights into Victorian culture.
- One approach to this study could be to concentrate on it at the mining-district level, obtaining baseline archaeological signatures for the variety of settlement types present.
- Traditional excavation and analysis of recovered material culture needs to be a substantive part of the historic archaeological study of these communities, rather than just emphasizing archival research.

## **SUMMARY CHAPTER 5: ETHNICITY**

The concepts of ethnicity, race, and social class are often avoided in polite modern conversation because, in this period of political correctness, they are considered sensitive topics with great potential to offend. However, they are of great import in understanding human interaction and the course a culture might take. Ethnicity and race can be somewhat intertwined though they actually are separate issues.

Race deals with genetic inheritance, and although its utility is less valuable because of intermixing between once discrete races, people typically still identify themselves with a particular racial category, as well as participate in categorizing others. Labeling by itself would not make it a serious issue except that the degree of access to opportunities people are afforded can be based on perceived racial membership.

Ethnicity is supposed to be related to cultural heritage, based on an identity shared by members or labeled by outside observers. Membership in a particular ethnic group is based on the culture in which the people are raised and with which they identify. As with race, opportunities afforded or denied to an individual can depend on membership in a particular ethnic group, and that makes this a serious issue. Discrimination can continue even after death, as seen in historic segregated cemeteries. In many cases, race and ethnicity overlap in the eyes of the observer. Themes most associated with ethnicity include settlements, industry, government, linear resources, and rural agriculture.

Even with living informants, identifying ethnicity can be subjective. To identify ethnicity within the archaeological record is far more difficult. Material culture associated with particular ethnic groups (e.g., architecture, domestic items, food refuse) and written records can provide important clues, as with Hispanic New Mexicans in southeastern Colorado. Historically, they used corner fireplaces and jacal and adobe architecture and made chipped (including bottle glass) and groundstone tools. In contrast,

historical documentation has been the primary tool used to identify African-American occupations in Colorado because their material culture has thus far not been shown to be unique.

To categorize inhabitants into discrete ethnic affiliations that reflect only the culture of origin has been demonstrated to be too simple in some cases. That view glosses over the possible blending of multiple cultures after contact that brought about a new cultural form. These cases of blending illustrate a type of amalgamation known as “creolization” (Church 2001:41-42; Deagan and MacMahon 1995).

For the purposes of this report, there are five ethnic groups in Colorado that are considered as examples. They are Hispanic New Mexican, African-American, Italian and Italian-American, Chinese and Chinese-Americans, and Japanese and Japanese-American. Excluded from this discussion are Native American cultures (dealt with elsewhere) and the remaining groups with other European ancestry. The Hispanic New Mexicans of the mid-1800s have served as the prime example in this report, with the bulk of the evidence from them having been gathered in southeastern Colorado.

### **IMPORTANT ETHNICITY RESEARCH AVENUES**

- There needs to be an increased recognition of ethnicity in the archaeological record.
- Some information about the ethnic background of the residents will be present in historic documents, but much will have to be obtained through the observation of remnant material culture at the site.
- Models for approaching ethnicity in the archaeological record include the isolationist/primordial approach, the interaction/instrumental approach, and the power/domination approach (Brumfiel 2004; Jones 1997).

## **SUMMARY CHAPTER 6: RURAL AGRICULTURE**

Agriculture is treated here as any form of food production. Anything from gardening to large scale cultivation of domesticated plants to pastoralism, the raising of domesticated animals, will be included under the agricultural umbrella. Themes linked to agriculture include settlement, transportation, linear features, government, and ethnicity.

It is felt that a typical evaluation of an agricultural site generally has focused on the residential quarters, barns, and other structures. That approach is too narrow. Instead, one should evaluate a site in terms of the broad agricultural landscape, including the entire landholdings, such as the pastures and tilled fields, and then to the broader aforementioned linked themes. Many early agricultural sites were multifunctional, sometimes including stage stations, general stores, post offices, and/or schools. The lack of either standing architecture or recorded land title does not necessarily eliminate an agricultural site’s significance.

Not all early agricultural sites were true homesteads, and not all homesteads that were quickly sold to others can be considered to have “failed.” A common practice during the Homestead era was to gain a patent on homestead land and then sell it to someone else in order to obtain cash for other enterprises. Looking at the archaeological database for agricultural sites in Colorado, it appears that they are underrepresented on the plains of central and northern Colorado, as well as in the mountains. Sites predating 1870 and postdating 1910 are also underrepresented as recorded sites. Few rural agriculture sites in Colorado have been systematically approached by archaeologists with research questions to guide the study.

## **IMPORTANT AGRICULTURE RESEARCH AVENUES**

### **Settlement under Spain and Mexico**

- The intersection of land law (land grants) and settlement practice prior to the Homestead Act.
- Differences in ethnic patterns of settlement and interaction.
- Archaeological manifestations of mixed livestock and crop agriculture.
- Approaches to water distribution.

### **Settlement under U.S. Land Law**

- The intersection of land law (land grants) and settlement practice after the Homestead Act.
- Transition from mixed agriculture to specialized ranching and farming and, further, cattle ranching and sheep ranching.
- Transition from family farms/ranches to large-scale agribusiness enterprises.

### **General**

- Cycles in farming/ranching related to climate fluctuations, market fluctuations, and population fluctuations (e.g., the Gold Rush, immigration events, or urbanism).
- Differences in farming/ranching according to altitude, terrain, soils, and vegetation.
- The impacts of technological change and availability on agricultural practice and settlement through time.
- Differences in approaches to agricultural practice based on ethnicity, class, nationality, and gender.
- The relationships between ranches/farms and regional, national, and global politico-economic change through time.
- Practices of recycling of buildings, artifacts, and landscape features through time.
- Patterns of sustained ranching/farming versus patterns of abandonment, in terms of investment in place, and temporal context.

## **SUMMARY CHAPTER 7: INDUSTRY**

Themes associated with industry in Colorado include the fur and hide trade, mining and ore processing, timbering, food processing, and oil, gas and oil shale production. Colorado's industrial present owes a great deal to the early founders. The early remnants of industrial activity are valuable in giving insight into Colorado's present economy.

### **Fur and Hide Trade**

Industry in Colorado begins with the presence of some of the earliest Euroamericans here. The first extractive industry in the region involved the fur and hide trade, started during the eighteenth century by the Spanish who came north out of New Mexico searching the Plains for bison and their hides. Then in the early nineteenth century, additional animal species were exploited for their skins by eastern traders and trappers. The hides and pelts they acquired through trade, trapping, and hunting were shipped east to be sold in the lucrative East Coast and European markets. The eastern plains of Colorado are dotted yet

today with evidence from such early trading posts, as well as more limited evidence on the Western Slope. But even before these Euroamericans ventured into the state, some Native Americans, stimulated by the burgeoning eastern market, served as the vanguard for the trade, acting as middlemen to eastern traders.

The most significant research avenues suggested for study concentrate on the location and evaluation of early trading posts. The likelihood of identifying other types of fur and hide trade sites in the state, all ephemeral, is quite remote.

### **IMPORTANT FUR TRADE RESEARCH AVENUES**

- Search for Jacob Fowler's Lookout at Pueblo, Fort Talpa (Spanish Fort), and Spanish Fort (Fort Sangre de Cristo).
- Conduct additional work at Fort Davy Crockett before it is further eroded by the Green River.
- Additional work at Fort St. Vrain (Fort George or Fort Lookout) may be worthwhile to determine if any archaeological deposits have survived.
- Conduct a historical archaeological evaluation of Fort Jackson (Sarpy's Fort) in order to better consider its NRHP status.
- Evaluate the historical archaeological potential of Bent's New Fort.
- Conduct a historical archaeological evaluation of Hardscrabble Plaza in order to better consider its NRHP status.
- Old Julesburg should be revisited and fully documented to include archaeological values.
- Ascertain the actual locations of the two sites of Fort Gerry and evaluate their historical archaeological values.
- Verify recording of Fort LeDuc (Buzzard's Roost) in Custer County.
- Complete recordation of Fort Namaqua and evaluate its historical archaeological values.
- Attempt to find, record, and evaluate historical archaeological potential for Bent's Picket Post Stockade, Fort Gantt, Fort Cass, Fort Convenience, Fort Leche (Milk Fort, Peebles Fort, or Fort Independence), Fort Fraeb, Wilson Houses, Bent's Log Houses, Autabee's Ranch (Autabee's Plaza, Fort Huerfano), Fort Sanders, Aguilar Trading Post, and Sharps Trading Fort (Buzzard Roost, Sharps Post).

## **Mining and Ore Processing**

The fur and hide trade gave way to mining and ore processing during the mid-1800s. Communities, along with local and territorial governments, were established to support the major gold and silver mining centers. Mills were built to process the ore, and transportation routes were established to move the valued resources to commercial centers. Other minerals, such as coal, also eventually played a significant role in the mining industry across the state.

The authors suggest that mining sites retain moderate to high research potential. The variety of technologies and types of minerals extracted over time provide an excellent database for study. However, the quality of recordation of these sites by archaeologists has not, to date, been adequate. The use of proper nomenclature, gaining an understanding of the entire industrial process, and a detailed examination of all mining records has generally been lacking. Standardization of recording has generally been deficient. Sites that have been poorly recorded need to be reexamined and evaluated, which includes all sites recorded by the Colorado Division of Minerals and Geology prior to 2004.

## **IMPORTANT MINING RESEARCH AVENUES**

- There is an excellent resource base in terms of quantity, temporal periods represented, arrays of technologies, and different minerals exploited.
- Generally poor recognition of archaeological potential by recorders.
- Sites are not being recorded in a standardized or complete fashion.
- Proper terminology must be utilized to describe physical elements of mining sites.
- Standards of acceptable reporting of industrial components of mining and mineral processing sites should be raised to include conformity of mining nomenclature, descriptions of sites that include particulars of industrial process, historical research that includes mine ownership title transfers, mineral survey data, mine inspectors and mine superintendent's reports, other information available from newspapers and mining journals, and placement into context with the general mining or technological history of the region.
- Simple mining sites are rather ubiquitous and redundant, easy to record, and easy to dismiss as lacking further research value. The complexity of larger mining sites, coupled with disturbance from the mining itself and the resulting sense of devastation, must be looked beyond to recognize areas that have specific data of importance.
- Lack of equipment is not detrimental to archaeological values.
- Adequate historical information is important so that archaeological research can answer important technological questions, but archaeology can also answer technological questions at sites where historical information is lacking.
- The examination of mining households is similar to what can be done in the study of any community for which a common employment focus exists.
- All previously recorded mining and mineral processing sites in the state for which the industrial components have been poorly described and for which poor or no historical background research has been conducted should be considered candidates for reevaluation.

## **Timbering**

Another extractive industry, timbering, began flourishing at the same time as mining, because settlements needed to be built, mine shafts shored up, and railroad lines laid. The timber camps used by loggers and tie hackers, as well as the required lumber mills, were located adjacent to the mountain resources, and the finished materials hauled to the sites where they were to be used.

It is thought that the potential for identifying these types of sites is high, as is also their research potential. Even if the mills have been stripped of machinery, the layout, functions and the industrial processes can still be ascertained. These sites were often short term and single component, giving the investigator a concise view of one particular activity, unconfused by multiple layering of functions over an extended time period. A number of these known mills in the state can still yield valuable information. So far, many of them lack adequate historical background research.

## **IMPORTANT TIMBERING RESEARCH AVENUES**

- A lack or absence of machinery at a sawmill should not be viewed as detrimental to site integrity, and archaeological investigation should be viewed as the best way to interpret layout, function, and industrial process.



- Sites with recognizable features accompanied by artifacts that can provide information about layout and function so that camps and mills can be readily interpreted are of most importance.
- Adequate site-specific and technological historical research is necessary for site evaluations to be legitimate, but the potential for archaeological data to be important can be derived independently.
- Residential components can be investigated using an anthropological perspective, with the workplace being the common connection between households. Short-duration logging camp and sawmill communities form an important class of sites for study that offer more moment-in-time data than sites with a broader economic base and longer tenure.
- Numerous early sawmills with associated residential camps are present on Haycamp Mesa and north of Dolores in southwestern Colorado that should have additional historical research completed and would be excellent subjects of archaeological data recovery.
- The sawmill facility at Glencoe may be able to provide excellent data about major output mills and company communities.
- Several small sawmills on the Uncompahgre Plateau provided lumber for local consumption and have excellent archaeological data potential. Similar sawmills in other areas of the state may have excellent data recovery potential, particularly along the Front Range where the earliest logging took place.
- Many of the timber industry sites recorded in the state have had no or inadequate historical background research conducted for them and many lack adequate descriptions of features and artifacts. All sites that are found lacking in these ways should be considered candidates for reevaluation.

## **Food Processing**

This industry comprises a broader category of site types, encompassing the many different industrial centers where various foods were processed. These include slaughterhouses for meat, milk bottling plants, mills for processing sugar beets, warehouses for the handling of fresh vegetables, and buildings and equipment used for preparing and canning vegetables, milling cereal grains, and processing nondairy beverages. Very few of these sites have enjoyed any significant archaeological investigations, and they could be especially significant in revealing early technologies used in both large-scale and small-scale operations.

Subjects for study could include early power generation for these processing centers (e.g., water, steam), and the technology level at pre-automated bottling and canning facilities. Household archaeology could be especially revealing in communities that were closely associated with a particular industry. Studies could include topics related to ethnicity, religion, social class distinctions, and associated discrimination, health, vices, and participation in broader regional and national markets.

### **IMPORTANT FOOD PROCESSING RESEARCH AVENUES**

- Few food processing sites have been evaluated for archaeological values.
- Good quality archaeological data can be expected at early or small-scale food processing sites. Those processing sites that once served local markets have good potential to contain concise data sets.
- Early water-powered or steam-powered facilities are particularly rare and may provide good comparative technological data.
- Early beverage-bottling and food-canning facilities from before the advent of the automatic bottling machine and the sanitary can in 1904 can provide excellent technological information

relating to changes in mechanization. They also may provide data relating to adoption of innovations and changes in the workplace, particularly in terms of laborers being replaced by machines.

- Food-processing sites that are representative complexes of a particular sector from a specific time period are likely significant.
- Archaeological studies may reveal the function of site components that make the structure and layout of the complexes clear, while also identifying the time period and level of technology in use.
- Valuable socioeconomic and ethnic data may come from archaeological study of households and communities associated with food processing. Groups of households or neighborhoods associated with fully developed commercial enterprises can provide important data concerning reactions of everyday people to political or workplace oppression, racial prejudice, retention of ethnic or religious identity, health and diet, habits and vice, compatibility with a dominant culture, and participation in national markets.

## **Oil, Gas, and Oil Shale**

The petroleum industry in Colorado dates back to the late 1800s. Useful studies could include the level of technology used in production fields for all three resources, as well as associated refineries. Oil and gas sites that fall within the period from 1900 to the 1930s are considered especially important, as are oil shale extraction sites from 1910 through 1929 when experimentation with oil shale extraction was first formally undertaken, although all oil shale retort and extraction facilities are considered worthy of study and recordation.

### **IMPORTANT OIL AND GAS RESEARCH AVENUES**

- Early sites that retain evidence of the technology in use should be considered particularly important, even though their brief periods of use are expected to have left relatively few features and sparse artifact deposits.
- The Oil Spring site should be examined for historical archaeological values.
- Oil exploration sites from prior to 1900 can provide important information about where oil was first sought and the level of technology in use.
- Oil and gas sites between 1900 and the 1930s can provide important information about technology, innovations, and the relationship between the level of technology and company capitalization.
- Any oil shale sites from the 1890s to about 1910 that exhibit evidence of mining or oil extraction are important.
- Sites representing the 1910 to 1929 period of formal experimentation in oil extraction from oil shale are of critical importance to the theme.
- All oil shale retort and extraction facilities should be sought and recorded.

## **SUMMARY CHAPTER 8: LINEAR RESOURCES**

Themes included under the heading of Linear Resources include trails, roads, railroads, water canals and pipelines, oil and gas pipelines, and utility lines. They vary widely in age and in archaeological significance.

Perhaps the most important consideration related to linear resources is that they do not stand alone. All are highly integrated into some larger system, including the themes of transportation, industry, settlements, military, and practically every other topic covered in this text.

Linear features are conduits. They serve as connections. They vary in length from a few miles to thousands of miles (e.g., a city street or Route 66). Their significance rests, among other things, in the important people who used them, the places they connect, or the events themselves that took place along the routes.

## **Trails and Roads**

Trails are the least developed, and within Colorado, will most likely be the earliest of the linear features encountered. Although remnants are often scarce, fragments can still be found, especially with the aid of historic documents. Being expedient features, the same trail might deviate in location over time, although these alternate routes generally converge at the points of origin and destination. Some early trails were later converted into roads, or in the case of high mountain trails, still used to this day by hikers. Major routes, like the Santa Fe Trail, had a greater impact on the terrain and will, in places, be more visible.

A road is an upgraded version of a trail, utilizing formal construction of the roadbed to convey wagons, stagecoaches, military equipment, and later automobiles. One important road type in Colorado's legacy was the toll road. The potential for profit provided an economic incentive for investors to build toll roads, and these were typically placed in the mountains where steep terrain allowed the developer to monopolize particular features, such as passes. Blasting, cutting and filling, laying plank or log beds, and other techniques were used to create these formal transportation routes.

The Colorado Highway Commission was established in 1909, vehicles were first licensed in 1913, and a state tax was imposed in 1914 to create a financial base to support road work. Later came a Colorado gas tax and then federal involvement in highway construction and maintenance. Transportation within Colorado evolved along with the increasing immigrant population, and these trails and roads were a primary facilitator in that process.

### **IMPORTANT TRAILS AND ROADS RESEARCH AVENUES**

- How do linear features connect sites and resources?
- How do specific linear resources contribute to the development of agrarian production, industry, market economy, community growth, government, and recreation?
- What are the dynamic interactions between linear features and technologies?
- What were the social and economic impacts of new or expanded linear features?
- What demographic shifts resulted from the completion of major linear features, including but not limited to transportation, water management, communication, and energy features?
- What kinds of sites are associated with linear corridors?
- What trails and roads were significant in the history and development of the project area?
- What site types and periods were these major transportation corridors associated with?
- How many of these corridors were within or close to the project area?
- What later developments may have preserved or destroyed these important pathways?
- What technologies of the periods of significance may be preserved in these pathways?

- What named routes are still important in the historic identity of the region?
- What branches, laterals, cutoffs, or spurs of primary routes are important in local history?
- What trails or roads contributed to the historic emergence of regional centers or industries?
- What trails or roads were important to the emergence or identity of local industries or communities?
- How did the popularity of particular trails or improvement of roads affect the emergence or survival of particular industries and communities?
- How was the effective development of particular routes affected by available technologies?

## **Railroads**

Railroads are created as a formal route incorporating rails, a far more complicated process than just preparing a roadbed. Labor investment and expense were significant risks required for their construction. Gentle grades were usually needed, thus requiring far more extensive modification of the terrain (e.g., tunnels, trestles, palisades). The advantage of the railroad was its ability to transport large and heavy loads, as were needed for mining, timbering, and livestock ventures. Small lines were constructed to service local mining communities, along with the major undertaking of transcontinental routes. Much of the settling of the American West, including Colorado, developed in the wake of newly laid rails.

Economic hardships led to most of the early railroad companies to either going out of business or being folded into another company. However, their presence today is still quite identifiable. Unlike trails, even the most minor abandoned rail line will likely still have visible remnants on the ground.

### **IMPORTANT RAILROAD RESEARCH AVENUES**

- Consult compiled railroad maps and regional railroad histories before survey.
- Look for patterned linear spacing of small communities on project area maps.
- Look for cuts and linear patterning in the topography.
- What is the availability of water, wood, and coal?
- What valued resources would benefit from bulk or rapid transport?
- What was the dynamic interaction between resource markets, capital investment, industrial technology, population, and railroad development?
- How did available technology affect the potential for railroad development?
- How did distance and terrain between resources and markets affect capital investment?
- How did competition between railroad companies affect local and regional history?
- What effects did completion of railroad segments have on population and site distribution?
- What kinds of sites could not expand until the completion of railroad connections?
- What changes took place in the patterns and structure of the railroad over time (widening, straightening, cutting, filling, tunneling)?
- What branches, laterals, bypasses, or spurs were important in the regional development of railroads?

## **Water Canals and Pipelines**

The topic of water canals and pipelines includes all forms of conduits used to transport water. Included in this topic are also the associated water tanks and reservoirs. Such linear features include flumes for mining, canals for irrigation water, or pipelines for domestic water consumption. From the time of the first inhabitants until the present day in the arid West, no commodity is more important than water. Once populations grew to immense proportions and agriculture became an important livelihood in Colorado, these cultural features allowed humans to remain in otherwise uninhabitable land.

### **IMPORTANT WATER CANAL AND PIPELINE RESEARCH AVENUES**

- What major water control systems exist in the project area?
- How critical is the availability of water in the region?
- What was the primary economic driver for water control in the region?
- What are the most important areas of water consumption in the project area – agriculture, industry, power generation, domestic consumption?
- What named water control systems are important in the history and identity of the area?
- What was the critical role of water in local and regional agrarian production, industry, and settlement?
- What technologies were available when the water was needed?
- What level of water control was achieved by local initiative?
- What was the role of government in regional water control projects?
- What industries and communities would not have emerged without water control projects?

## **Oil and Gas Pipelines**

Euroamerican immigrants first recognized oil in Colorado by 1860, with the first well drilled in 1881. Pipelines were first used to deliver the liquid crude oil later in that century, although archaeologists have not generally recognized the antiquity of these early conduits. Although technology has improved considerably since then, the same basic extraction and delivery process continues to this day. As a result, there remains a need to efficiently move raw petroleum products from their sources to the refinery and then to consumers.

### **IMPORTANT OIL AND GAS PIPELINE RESEARCH AVENUES**

- What is the chronology of energy development for the general area?
- Where are the early oil and gas fields in relation to the project area?
- Are there known early pipelines in the area?
- Where are the nearest product markets for the period?
- What role has the region played historically in energy development?
- How important is energy development in the emergence and identity of the region?
- How critical are pipelines to reaching major markets?
- What technologies were available in the period of development of this region?

## Utility Lines

Utility lines include three types of linear features: telegraph lines, telephone lines, and power transmission lines. They exist either to transmit electric power or facilitate communications.

The earliest attempt at electronic transcontinental communications came with the Western Union telegraph in the early 1860s. It eliminated the Pony Express as a competitor, but communication still lacked high efficiency. What followed was the telephone, invented in 1877.

The earliest generation and transmission of electricity in Colorado was to support a mine near Telluride in 1890. Within a decade or so, electrical generation in Colorado had begun to spread, and soon large communities were being supplied with electricity. Rural areas followed more slowly, starting with windmill generation, and then they began to be supplied under the banner of the Rural Electrification Act (REA) beginning in 1939.

The physical manifestations of these linear systems generally are the pole alignments intended to support transmission wires. More recently lines have been buried, or, in the case of telephone, portions were replaced by wireless systems.

### IMPORTANT UTILITY LINE RESEARCH AVENUES

- Are power transmission or communication corridors known to be important in local or regional development?
- Are there named systems that played a significant role in local or regional history or identity?
- What were the important power delivery or communications technologies in the early history of the project area?
- Were important local industries dependent on power generation or time critical communication?
- Did the completion of particular systems correspond to a major period of growth?
- What was the role of power generation or communication in local or regional history?
- How critical was the available technology to the period of growth of industry or communities?
- How did changes in technology over time enhance or inhibit local development?

## SUMMARY CHAPTER 9: RECREATION

Colorado has long been a magnet for tourism, and its abundant recreational opportunities also continue to draw new permanent residents from outside the state. The primary attraction has always been the mountains, a region occupying more than a third of the state. Spectacular landscapes, hunting, fishing, water sports, snow sports, and cooler summer days are among the primary interests of both visitors and residents alike.

Beyond personal satisfaction gained by the visitors, recreation is significantly linked to the economy. Myriad businesses have arisen to meet the demands of the public, and state services are funded by the tax revenues that were generated by these entrepreneurs.

Categories related to recreation in Colorado include government-managed recreational facilities, health resorts, entertainment, organizational (including clubs), developed sport, and auto and railroad tourism. It appears from the OAHF site database that, although a number of early recreational sites are

encountered during cultural resource work, they are often not considered for their archaeological values. Themes linked to recreation include settlements, government, linear resources, and industry.

## **Government-Managed Recreational Facilities**

Government-managed recreation can be found primarily within national forests, managed by the U.S. Forest Service, and national parks, managed by the National Park Service. These properties bring people to Colorado from around the world. To a lesser extent, the state of Colorado also has smaller holdings of forests and parks that generally attract in-state residents. Beyond the common community park facilities found in towns and cities throughout the state, Denver and Colorado Springs have been quite active in developing park systems located far outside their city limits.

Recreational opportunities available on land managed by these governmental agencies include camping, fishing, hunting, and sightseeing. Most ski areas in Colorado today are located on U.S. Forest Service land but are managed privately.

## **Health Resorts**

Starting in the 1800s, Colorado was recognized as an ideal climate for people with respiratory diseases (especially tuberculosis and asthma). Hot springs were thought to have curative properties, and the numerous springs throughout the mountainous portion of the state formed the basis for establishing some communities, such as Glenwood Springs and Pagosa Springs. These springs remain as popular destinations for tourists today, though less for health reasons and more for relaxation.

## **Entertainment**

Entertainment is primarily focused on urban areas and includes such early forms as opera and other musical venues. Concerts in city parks remain popular today. Also included under this umbrella would be swimming pools, city parks, and playgrounds.

“Seedy” entertainment has a long history in Colorado as well, primarily focusing on red-light districts, especially in mining settlements. Historically associated with this activity were saloons and opium dens.

## **Organizational Recreation: Social and Industrial**

Organizational recreation includes those pursuits fostered within private voluntary clubs and within businesses or social welfare organizations. These kinds of recreation are difficult to separate in the archaeological record from that undertaken on the family or individual level.

## **Developed Sport**

The most recognized developed sport in Colorado is snow skiing. It has a heritage starting in the 1880s in the mining towns of Gunnison and Crested Butte, eventually spreading throughout the mountains. It didn't begin as a form of mass recreation until 1937, when a rope tow was first built below Pike's Peak. That trend diffused across the mountains over the following decades. The remains of defunct ski areas dot the high country today.

## **Auto and Railroad Tourism**

Early tourism in the state was facilitated by the construction of rail lines penetrating the mountains. The railroads certainly had other purposes there, but tourists took advantage of the routes and were able to travel to remote portions of the state. Luxury hotels and lodges were constructed at places of interest to lure and retain visitors.

Following the development of rail traffic in the late 1800s was the twentieth-century expansion of highways. Auto campgrounds were developed in places like Denver, and hordes of tourists flocked to high mountain attractions in places such as Estes Park and the adjoining Rocky Mountain National Park.

Recreation has played a vital part of Colorado's economy for well over a century. The state government has established a tourism agency to continue encouraging this vital source of revenue. Remnants of the early recreational activities in sites across the state provide proof of the continuum of these practices.

### **IMPORTANT RECREATION RESEARCH AVENUES**

- Identification and analysis of material cultural items associated with recreation over time and across space (e.g., comparisons between early "wealthy" recreation versus subsequent increase in middle-class recreational activities).
- Investigation of the effects that increased recreation and tourist-related activities has had on local economies, such as changes in patterns of consumption.
- Documentation of the growth of the recreation and tourism industry by placing a site or district within a temporal framework of development, such as explaining the changing standards of unique tourist and recreational facilities.
- Examination of the impact of the automobile and railroads on tourism and investigating how material evidence of those impacts is represented.
- Identification of resources that can substantiate the role of the automobile in a socioeconomic revolution in lifestyles of residents in various towns and communities, how recreation affected the spatial arrangements of towns, and the growth of local tourism.
- Examination of the social and economic activities of "tourist" towns.
- Investigation of temporal patterns of tourism or fluctuations linked to regional or national events.
- Investigation of the role of recreation-related sites in documenting changing social values over time, including social attitudes toward work (changing labor and work situations) and the environment.
- Documentation of the changing, physical manifestation of land-use systems and cultural landscapes with the growth of the leisure industry, such as the transition of a mining district to a ski resort.

## **SUMMARY CHAPTER 10: GOVERNMENT**

Themes associated with government in Colorado include exploration, land survey and land distribution, Indian agencies, U.S. and state military, land management, public works and public service, and transportation.



## **Exploration**

The topic of government covers a wide range of subjects with the commonality involving decision-making bureaucracies from the local to national level. The earliest governmental involvement in the state came in the form of government-sponsored exploration, such as the expeditions of Pike and Long. From exploring the new Louisiana Purchase to the evaluation of suitable transcontinental railroad routes, their work led to the opening of the state. Sites related to early exploration have low potential for identification but high research values.

### **IMPORTANT EXPLORATION RESEARCH AVENUES**

- Identification of all sites resulting from government exploration expeditions should be considered a high priority, but the likelihood of their identification is low.
- Archaeological work at Pike's Stockade (5CN75) should be conducted to verify if it is, indeed, the location occupied by Pike in 1807.

## **Land Survey and Distribution**

Exploration was followed by land surveying. Territorial and ultimately state boundaries were established, and then homestead allotments were surveyed and disbursed to settlers. Sites of this type have low potential for identification and low research value.

## **Indian Agencies**

As immigrants from the East increased in numbers, tensions and conflicts ensued with Native American groups. Attempts to quell conflicts were undertaken by government mediators through treaties. With the subsequent displacement and consolidation of Native Americans, Indian agencies were established to govern and manage the groups. Sites of this type have high potential for identification and high research value.

### **IMPORTANT INDIAN AGENCY RESEARCH AVENUES**

- Additional archaeological work at the 1<sup>st</sup> and 2<sup>nd</sup> Los Pinos Indian Agency and surrounding Ute Indian components should be supported.
- The site of the original White River Agency should be better recorded and its archaeological values ascertained.
- Several other Indian Agency locales remain to be identified and assessed, including the Uintah Ute agency at Breckenridge, the Middle Park Agency at Steamboat Springs, the Special Ute Agency at Denver, and the agencies for the Cheyenne and Arapaho at Bent's New Fort and Point of Rocks.
- Continue to investigate the impact of federal involvement with Native American populations and their settlement systems.

## **U.S. and State Military**

The U.S. and state military also played a part in Indian relations in Colorado, but other activities by the military in Colorado included monitoring the southern border following the Mexican-American War, and then limited service during the Civil War in New Mexico. The volunteer state militia engaged in Civil War patrol duties but are best known for their part in the tragic Sand Creek Massacre near Bent's Fort in southeastern Colorado. The state militia eventually became the Colorado National Guard, and it

has maintained a presence ever since. Later came the establishment of many U.S. military bases, primarily in the eastern half of the state. A number of these are still active. Along with them came WW II prisoner of war camps and one Japanese-American internment camp. Potential for site identification varies, with the greatest difficulty identifying pre-WW I sites. Depending on the activity, many will have high research value.

### **IMPORTANT MILITARY RESEARCH AVENUES**

- Data recovered from Fort Massachusetts should be reexamined, adequately reported upon, and an evaluation made of the site as to the potential for additional important archaeological materials.
- Archaeological deposits at Fort Wise (Old Fort Lyon) should be more completely characterized and examined.
- Cantonment at Pagosa Springs and cantonment on the La Plata should be better recorded and their historical archaeological values evaluated.
- Fort Crawford (cantonment on the Uncompahgre) should be better recorded and its archaeological values examined before it is completely destroyed by looters and development.
- Determine if any archaeological values remain at Fort Logan.
- Seek and document early Colorado volunteer military camps and National Guard camps.
- The National Guard rifle range and training facility at Camp George West near Golden should be evaluated for historical archaeological values.
- Further archaeological work at Camp Amache is warranted.
- The prisoner of war camp at Las Animas should be assessed for its archaeological values.
- The prisoner of war camp in Weld County should be reexamined to reconsider its potential for historical archaeological values.
- The Pfeifer Battle site, the site of the Battle of Cumbres Pass, the Milk Creek Battle site, the Meeker Massacre site, and the Beecher Island Battleground should all be revisited and their historical archaeological values ascertained. The wholesale looting of the Milk Creek Battle site should be roundly condemned and action to mitigate the loss of data there should be a high priority. Additional archaeological work at the Sand Creek Massacre site and the Ludlow Tent Colony/Monument/Memorial/Massacre site should be supported.

## **Land Management**

Forests in Colorado began being managed by the federal government (U.S. Forest Service) in the late 1800s to control excessive timbering related to mining and other industrial development, with protection of the watershed also an interest. As a result of overgrazing in the 1930s, the Taylor Grazing Act was then implemented. The National Park Service also had interests in Colorado, starting with the establishment of Mesa Verde and later Rocky Mountain National Park, followed with other smaller properties. Sites related to these activities have moderate potential for identification and moderate research value.

## **Public Works and Public Service**

Depression-era relief programs were implemented across the nation, including Colorado. The Civilian Conservation Corps and Works Progress Administration were among the more successful programs in the state, assisting with hundreds of projects for the USFS, NPS, and other federal and state

agencies. Associated with the actual construction projects undertaken by the workers are the camps built to house them while they were undertaking the projects.

In the early 1900s, the Bureau of Reclamation began building dams here to control water resources. These were done primarily to support agricultural needs and assist in flood control. Public works sites have moderate potential for identification and moderate research value.

### **IMPORTANT PUBLIC WORKS RESEARCH AVENUES**

- Archaeological values for camp facilities associated with public works projects under the Reclamation Service/Bureau of Reclamation and for government road construction projects should be sought and evaluated for historical archaeological values.
- Archaeological values for all CCC camps in the state should be ascertained.

## **Transportation**

Roads began to increase in importance with the development of automobiles. In 1902 the U.S. Bureau of Roads was formed, followed in 1909 by the Colorado Highway Commission. Concerning the material culture associated with this theme, in addition to the routes themselves (covered in the Linear Features chapter), are the work camps, construction facilities, and maintenance facilities. Sites related to transportation have low potential for identification and moderate research value.

## **TYING IT ALL UP**

This volume is primarily intended to assist archaeologists in conducting historical archaeological investigations in Colorado. Problems have been encountered in the past when historic resources were inadequately recorded and evaluated by some professional archaeologists who were not completely prepared for the task. There are distinctions between these related disciplines that have yet to be bridged by all practitioners in the various fields, including the appropriate use of terminology and acceptable methodological approaches. There have been those who did not follow standard historical, architectural, and historical archaeological approaches to the investigation and evaluation of historical properties. The authors who have invested their time and energy in producing this volume hope their efforts will result in a worthwhile contribution toward bridging these gaps that currently exist between the disciplines of prehistory, history, architecture, and historical archaeology.

One of the principal hallmarks of anthropology since its inception as a discipline in the 1800s has been its holistic approach to the study of humanity. Anthropologists have, over the years, demonstrated the complexity in the web of culture and the interrelatedness of its components.

Using the holistic approach with the nine themes covered in this volume (protohistoric and historic Native Americans, industry, government, linear resources, rural agriculture, recreation, settlements, ethnicity, and Victorian mining settlements), I will attempt to show how they are bound together under the same human umbrella and contribute to each other and to the entire cultural fabric of the state.

Not all of the themes in this volume can be considered equivalent topics. Some fall under the heading of social institutions and these are the standardized ways a society is organized to meet particular human needs. The social institutions include the themes of industry, government, recreation, and rural agriculture. Many linear resources can be considered a part of the industrial (economic) social institution, as some forms do link industrial activities. Two other themes, settlements and Victorian mining

settlements, are subjects related to social organization. The final two themes, ethnicity and protohistoric and historic Native Americans, incorporate a number of broader cultural topics, including, but not limited to, social institutions. Instead, they incorporate many different aspects of culture.

It is possible to view each of these themes as one puzzle piece in the big picture of Colorado's past. Early government exploration and the fur trade opened the West initially, revealing the possibilities of the region to an eager audience in the East. This beginning led to the inexorable influx of miners and affiliated settlers. Many communities, including Denver and Colorado Springs, owe their origins to the initial mining era.

These settlements had to be governed, even in their earliest days, and local, territorial, and eventually state government arose to make decisions and keep the peace. Along with the governing of communities, there was a need to provide food to support the burgeoning population. Agriculture became the foundation of the sedentary lifestyle in Colorado. Farms and ranches provided the meat and vegetables demanded by the urban dwellers. In some cases, especially east and west of the mountains, irrigation systems needed to be established in order to sustain long-term food production in the semiarid flatlands. Other linear resources also connected the communities, starting with roads, railroads, and eventually telephone communication links.

Additional industrialization in the state grew to meet demands for fuel, construction materials, and the processing and distribution of foodstuffs. Though the state's initial population was drawn here because of mineral resources, it was soon apparent that the climate and topography were quite attractive, leading to the rise of a tourism industry to accommodate the demand. Many private entrepreneurs took advantage of the lure of Colorado and began capitalistic enterprises to capture a share of the incoming wealth. Government became involved in enhancing recreational opportunities at places like Rocky Mountain National Park and other properties.

Throughout this long pageant of the human experience in Colorado, there have always been varying cultures competing and coexisting on the landscape. Initially, there were clashes of European and Euroamericans from the south and the east with indigenous Native Americans. These groups included Plains Indians, such as Arapaho and Cheyenne, and the mountain and Great Basin Indians known as the Utes. Eventually the Native Americans were forced into subjugation on government reservations, ending the era of aboriginal freedom in the state and opening a new era of government-managed ethnic groups. The subsequent settlement of other ethnic groups in Colorado included the Hispanic movement in from the south, African-Americans from the east following emancipation, as well as a succession of eastern European immigrants and Asians, mostly drawn here by economic opportunities. Often, the prolonged contact and interaction of various ethnic groups is viewed in the social sciences through the prism of Marxism or Conflict theory. This theory, originating with Karl Marx, involves seeing the social context as one in which those in power get to make the rules, as well as generally benefit from the labors of the less powerful groups. In Colorado, in addition to the typical economic and political interactions of ethnic groups, there have also been the extraordinary events of World War II involving the internment of Japanese-Americans in southeastern Colorado.

In all these examples of the early Native American presence and the ethnic groups that followed, all of the themes of industry, government, linear resources, agriculture, and all the others, have played a role in their survival and even their destruction.

All of these nine themes are bound together in myriad ways. None of them stands alone. By understanding the intricacies of each theme, one can better understand how they influence each other and contribute to the success of the overall culture. Those archaeologists who choose to become involved in their study face a great challenge, but one that has great potential for revealing far more about ourselves than we yet know.

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## ANNOTATED BIBLIOGRAPHY

The annotated bibliography provides brief summaries of a variety of reference materials that may be of use to the researcher in historical archaeology in Colorado. This list is not intended to be exhaustive but to provide the interested reader with some further direction. The reference materials listed here range from broad, synthetic discussions of method and theory in historical archaeology to focused and detailed artifact identification guides, and from widely available published works to contract reports from large projects where significant effort was directed to historical archaeology and historical archaeological sites. The following table provides a categorized listing of these annotated works by general category or subject matter.

TOPIC	REFERENCE	
<b>REFERENCES PARTICULAR TO INDIVIDUAL CHAPTERS IN THE <i>HISTORICAL ARCHAEOLOGY</i> CONTEXT</b>		
Historical archaeology (Chapter 1)	Binford 1962 Carrillo 1977 Deetz 1983, 1996 [1977] Gilchrist 2005 Hardesty 1991 Hardesty et al. 1995 Jennings 2005	Lees 1988 Lightfoot 1995 Schuyler 1988 South 1977, 1993 Trigger 1989 Wilkie 2005 Wylie 1993
Protohistory (Chapter 2)	Bolton 1950 COLORADO PREHISTORIC CONTEXTS (Gilmore et al. 1999, Lipe et al. 1999, Martorano et al. 1999, Reed and Metcalf 1999, Zier and Kalasz 1999) Russell 1967 Thomas 1935	
Settlements (Chapter 3)	Baker 1999 Barth 1988 Buckles 1998 Carrillo et al. 1993 Horn et al. 2003 Horning 2000 Kutsche et al. 1976	Praetzellis and Praetzellis 2004 Ringhoff 2002 Rogge et al. 1995 Sagstetter and Sagstetter 1998 Smith 1967 Tucker et al. 2001
Victorian mining settlements (Chapter 4)	Baker 1978, 1983, 1999 Howe 1976 Praetzellis and Praetzellis 1992	Smith 1967 Stoehr 1975
Ethnicity (Chapter 5)	Andrefsky 1990 Carrillo 1977 Carrillo et al. 2003 Church 2001 Clark 2003 Jones 1997	Kutsche et al. 1976 McGuire 1982 Reed and Horn 1995 Schuyler 1980 Weber 1982
Rural agriculture (Chapter 6)	Andrefsky 1990 Baker 1999 Carrillo et al. 2003 Church 2001 Clark 2003 Fontana 1967 Horning 2000	Kutsche et al. 1976 Limerick 1987 Peake 1937 Reed and Horn 1995 Reed et al. 2001 Stewart-Abernathy 1992 Wendel 1997
Industry (Chapter 7)	Armstrong 1976 Chappel 1971 Clint 1976 Henderson 1926 Horn 2002 Horn et al. 2003	Reed et al. 2001 Rogge et al. 1995 Sagstetter and Sagstetter 1998 Twitty 2002 Wyckoff 1999

Linear resources (Chapter 8)	Associated Cultural Resource Experts 2002 Birnbaum and Peters 1996 Chappel 1971 Fraser and Strand 1997 Holleran 2005 JRP Historical Consulting Services and California Department of Transportation 2000 Ormes 1980 Schweigert 1998 USGS MAPS OF HISTORIC ROADS AND TRAILS (Scott 1975, 1976, 1986, 1989, 1994, 1995, 1999, 2001, 2004; Scott and Schwayder 1993)
Government (Chapter 10)	Armstrong 1976 Rogge et al. 1995
<b>REFERENCES PERTAINING TO VARIOUS ASPECTS OF HISTORICAL ARCHAEOLOGY</b>	
Artifact identification and classification	Barnes 1993 Blackaby and Greeno 1988 Clint 1976 Fike 1987 Gates and Ormerod 1984 Godden 1991 Lehner 1988 Maxwell 1993 Rock 1984 Russell 1967 Toulouse 1971, 1977 Twitty 2002 Wendel 1997 Zumwalt 1980
Assessing National Register eligibility	Hardesty and Little 2000 National Park Service 1996
Historical archaeology and Cultural Resource Management	Reed et al. 2001
Ethnohistorical research	Wood 1990
American Indians	HANDBOOK OF NORTH AMERICAN INDIANS (D'Azevedo 1986; DeMallie 2001; Ortiz 1979, 1983; Washburn 1988) Leacock and Lurie 1971;
Western U. S. history	Limerick 1987 West 1995
Ute history and Ute archaeology	Baker 2004 Baker 2005 Nickens 1988 Sánchez 1997
Colorado historical archaeology	Buckles and Buckles 1984 Horn 2004
Colorado historical geography	Wyckoff 1999
Early Euroamerican explorers	Bolton 1950 Chavez and Warner 1976 Thomas 1935



**Andrefsky, William, Jr.**

**1990** *An Introduction to the Archaeology of Pinon Canyon, Southeastern Colorado*. 6 Vols. Prepared by Larson-Tibesar Associates, Inc., and Centennial Archaeology, Inc., Laramie and Fort Collins. Submitted to National Park Service, Rocky Mountain Regional Office (Contract No. CX 1200-7-B054), Denver. Copies available from the Colorado Historical Society, Office of Archaeology and Historic Preservation, Denver.

This study represents a compilation of the preliminary archaeological research conducted of a major portion the Purgatoire River Valley and its tributaries. It constitutes one of the few times in Colorado where the historical archaeology played a major role in a very large project, resulting in significant contributions to the archaeological record of Colorado. This study represents the initial ethnohistorical and historical archaeological study of the Hispanic populations that settled the Purgatoire Valley region beginning in the 1860s. It also speaks to the general settlement, both Hispanic and non-Hispanic, of the southeastern Colorado region.

**Armstrong, Ellis L. (editor)**

**1976** *History of Public Works in the United States 1776-1976*. American Public Works Association, Chicago.

Armstrong divides public works into various categories and puts them in historical context. He explains the growth of infrastructure developments from their emergence to federal programs. This discussion includes technological advancements, societal benefits, and legislative mandates.

**Associated Cultural Resource Experts (ACRE)**

**2002** *Highways to the Sky: A Context and History of Colorado's Highway System*. Prepared by Associated Cultural Resource Experts, Littleton, Colorado. Prepared for Colorado Department of Transportation. Copies available from the Colorado Historical Society, Office of Archaeology and Historic Preservation, Denver.

*Highways to the Sky* provides a general history of Colorado highways, examples of the study and evaluation of portions of specific highways, and guidance for finding maps and other resources to research historic highways. It is a useful source document for research materials on state and federal roads and highways.

**Baker, Steven G.**

**1978** *Historical Archaeology for Colorado and the Victorian Mining Frontier: Review, Discussion, and Suggestions*. *Southwestern Lore*, 44(3):11-31.

This work introduces the subject of American Victorian culture to historical archaeology in the United States from a Colorado perspective. It also summarizes the historical archaeological work that had been completed in Colorado up to that time and made recommendations for how to evaluate and study Victorian archaeological sites.

**Baker, Steven G.**

**1983** *The Railroad and the American Victorian Cultural Horizon: An Archaeological Perspective from Colorado*. In *Forgotten Places and Things*, edited by Albert Ward, pp. 239-249. *Contributions to Anthropological Studies*, No. 3. Center for Anthropological Studies, Albuquerque.

This work advances the concept of Victorian culture in Colorado's historical archaeological resource base and introduces the concept of the Victorian cultural horizon and its relationship to railroads.

**Baker, Steven G.**

**1999** *The Railroad and the American Victorian Cultural Horizon: An Archaeological Perspective from Colorado.* *Southwestern Lore* 65(3):1-10.

Baker describes a Victorian cultural horizon that appears across Colorado, but particularly in mining settlements, with the advent of the railroad. The abstract explains that “the goal is to present tangible evidence of cultural change caused by the arrival of the railroad and its Victorian baggage in the mining camps of the Rocky Mountains.” Although the focus here is on mining camps, the cultural material record reflects the same types of goods available (albeit perhaps less affordable) in agricultural settings as well.

**Baker, Steven G.**

**2004** *2002-2003 Old Agency Initiative of the Uncompahgre Valley Ute Project, Vol. I, Historical Archaeology Exploration and Assessment of the 2<sup>nd</sup> Los Pinos Indian Agency on the Uncompahgre (SOR139).* Uncompahgre Valley Ute Project, Report No. 5. Prepared by Centuries Research, Inc., Montrose, Colorado. Prepared for the Colorado Historical Society, State Historical Fund, Denver, and the Montrose Youth and Community Foundation, Montrose, Colorado. Copies available from the Colorado Historical Society, Office of Archaeology and Historic Preservation, Denver.

Although this volume focuses on the Tabeguache and Uncompahgre Ute bands, it summarizes the political history of the Colorado's Ute people. It draws upon many source materials to explain Late Contact Period Ute history and culture in relation to the 2<sup>nd</sup> Los Pinos Agency. It provides up-to-date detail and perspective on the Utes of Colorado.

**Baker, Steven G.**

**2005** *2002-2003 Old Agency Initiative of the Uncompahgre Valley Ute in prep Project, Vol. II, Late Contact Phase Ute Ethnohistory and Archaeology in Association with the 2<sup>nd</sup> Los Pinos Indian Agency on the Uncompahgre (SOR139).* Uncompahgre Valley Ute Project, Report No. 6. Prepared by Centuries Research, Inc., Montrose, Colorado. Prepared for the Colorado Historical Society, State Historical Fund, Denver, and the Montrose Youth and Community Foundation, Montrose, Colorado. Copies available from the Colorado Historical Society, Office of Archaeology and Historic Preservation, Denver.

This volume builds on Volume I (above) and details the Late Contact Phase Ute ethnohistory and archaeology with particular emphasis on the Tabeguache and Uncompahgre Ute Bands. Like Volume I, it draws upon and summarizes a wide array of source materials on the Ute people.

**Barnes, Frank C.**

**1993** *Cartridges of the World.* DBI Books, Northbrook, Illinois.

Barnes provides the standard reference for identifying centerfire and rimfire cartridges. The book includes tables of measurements by which virtually any cartridge can be identified. It provides short but helpful histories that include when each cartridge was introduced and when each may have been discontinued, which guns the cartridges were suited for, and their best function, such as hunting of small game or self protection. Unfortunately, it does not include basic histories of companies or information about deciphering headstamps.

**Barth, Gunther**

**1988** *Instant Cities: Urbanization and the Rise of San Francisco and Denver.* University of New Mexico Press, Albuquerque.

Historian Gunther Barth's concept of “instant cities” – i.e., settlements that grow from wilderness to city in the span of a single generation – is extremely useful for understanding how Denver came about and can also shed light on the formation of many urban areas in Colorado. This book not only examines Denver as a type of settlement critical to the formation of the cultural landscape of the American West but it also places its

topic cities in a much larger context, outlining parallels and comparisons to urbanization in Europe in antiquity and the Middle Ages.

**Binford, Lewis R.**

**1962** *Archaeology as Anthropology. American Antiquity 28:127-225.*

Binford provides one of the foundation perspectives on how to use archaeology to reach anthropology. He states that artifacts that had their “primary functional context in different operational sub-systems of the total cultural system will exhibit differences and similarities differently, in terms of the structure of the cultural system of which they were a part” (p. 218). He goes on to explain that the structure of the systematic relationships between sociocultural systems “will vary both within the temporal and spatial spans within and between broad functional categories” (pp. 218-219).

**Birnbaum, Charles A., and Christine Capella Peters (editors)**

**1996** *The Secretary of the Interior’s Standards for the Treatment of Historic Properties with Guidelines for the Treatment of Cultural Landscapes.* U.S. Department of the Interior, National Park Service, Cultural Resource Stewardship and Partnerships, Heritage Preservation Services, and Heritage Landscape Initiative, Washington, D.C.

One of several of the secretary of the interior’s standards publications, this is an important source document for understanding the concept of cultural landscapes as the National Park Service treats landscape districts. Applying the broader concept of cultural landscapes assists and enhances the assessment of small segments of larger linear networks.

**Blackaby, James R., and Patricia Greeno**

**1995** *The Revised Nomenclature for Museum Cataloging: A Revised and Expanded Version of Robert G. Chenhall’s System for Classifying Man-Made Objects.* AltaMira Press, Walnut Creek, California.

As the name implies, this is a basic reference for classifying any man-made item, which makes it ideal for organizing historical artifacts. It is the system used by the National Park Service and many other museums for organizing their collections. It enables consistent terminology to be used in describing artifacts and facilitates their placement into distinct categories in accordance with their functions. It can be easily adapted to historic artifact analysis for computer retrieval and data manipulation.

**Bolton, Herbert E.**

**1950** *Pageant in the Wilderness: The Story of the Escalante Expedition to the Interior Basin, 1776.* Utah State Historical Society, Salt Lake City.

Bolton provides an excellent account of the Dominguez and Escalante expedition and the priests’ accounts of the Ute Indians of Colorado and Utah. It contains useful maps and important supplementary documents. Unfortunately, it is unclear in the exact routing of the expedition.

**Buckles, William G.**

**1998** *The Search for El Pueblo: Through Pueblo to El Pueblo, an Archaeological Summary.* El Pueblo Archaeological Project, Pueblo.

Buckles was one of the pioneers of historical archaeology in Colorado. His work at El Pueblo is a testament to determination, historical sleuthing, and the important role history can play in urban revitalization. This slim volume is the synthesis of his (and other investigators’) many years of work at El Pueblo.

**Buckles, William G., and Nancy B. Buckles**

**1984 *Colorado Historical Archaeology Context*. Colorado Historical Society, Denver.**

The 1984 *Colorado Historical Archaeology Context* is the excellent first context document for historical archaeology in Colorado, with sections on a wide range of site types and ages. Overall, the Buckles organized this context more temporally than thematically (although there are elements of both) and divided temporal periods largely according to political eras. It provides some examples of what still stands as excellent work and is a good reflection of the state of research and research gaps in 1984, as well as what were considered relevant archaeological research agendas in the early 1980s.

**Carrillo, Richard F.**

**1977 *Archaeological Variability-Sociocultural Variability*. In *Research Strategies in Historical Archaeology*, edited by Stanley South, pp. 73-89. Academic Press, New York.**

The Institute of Archaeology and Anthropology at the University of South Carolina undertook excavations at the sites of two houses, the Bratton House and the Howser House, built and occupied by representatives of British and Germans traditions, respectively. This study provides an excellent example of how archaeological information, in concert with architectural and historical data, can illuminate different behavioral patterns in different sociocultural systems.

**Carrillo, Richard F., Sarah J. Pearce, Stephen M. Kalasz, and Daniel A. Jepson**

**1993 *The Tremont House (5DV2954): Historical Archaeological Investigations of an Early Hotel in Denver, Colorado*. Archaeological Research Series 1. Colorado Department of Transportation, Archaeological Unit, Denver, Colorado.**

The investigations at the Tremont House set a high standard for urban archaeology in Colorado. A thorough analysis of historic documents (especially maps and newspapers) provides important context for the rich artifactual remains recovered from the site. Together they lead to a greater understanding of how this commercial establishment serves as a barometer for change in the city of Denver. This report is the technical document, but those interested in the public presentation of Colorado Archaeology should also refer to the popular volume *Exploring the Colorado Frontier: A Study in Historical Archaeology at the Tremont House Hotel, Lower Downtown Denver*, by Richard F. Carrillo and Daniel A. Jepson (1995), available from the Colorado Department of Transportation.

**Carrillo, Richard F., William J. Convery, III, Barbara J. Zook, Dorothy J. Best, Bonnie J. Clark, Constance La Lena, and Diane Benevides Mason**

**2003 *Context Study of the Hispanic Cultural Landscape of the Purgatoire/Apishapa, Las Animas County, Colorado: An Interdisciplinary Approach to the History, Architecture, Oral History and Historical Archaeology*. Prepared for Trinidad Historical Society and the Colorado Historical Society, State Historical Fund (Grant No. 99-M2-061), Denver. Copies available from the Colorado Historical Society, Office of Archaeology and Historic Preservation, Denver.**

This report illustrates the power of several researchers with disparate expertise working together to bring together a strongly synthetic report on an entire cultural landscape. It works at multiple scales, from single sites to entire valleys; outlines research gaps; and gives pragmatic suggestions and models for addressing those gaps. In particular, there are research expectations drawn from documents and oral tradition about what some so-far unrecognized early Hispanic sites might look like on the ground.

**Chappel, Gordon S.**

**1971 *Logging Along the Denver & Rio Grande: Narrow Gauge Logging Railroads of Southwestern Colorado and Northern New Mexico.* Colorado Railroad Museum, Golden.**

Chappel presents a full history of logging with railroad systems in the ponderosa pine forests from Dolores to Alamosa. He includes extensive maps showing logging railroad networks and provides detailed histories of logging companies.

**Chavez, Angelico (translator), and Ted J. Warner (editor)**

**1976 *The Domínguez-Escalante Journal: Their Expedition Through Colorado, Utah, Arizona, and New Mexico in 1776.* Brigham Young University Press, Provo, Utah.**

This edited journal is an excellent account of the Domínguez and Escalante expedition. Some researchers question some of the translation, but the trail route research is excellent. When used with Bolton (1950), it provides good information about the Ute people in the eighteenth century.

**Church, Minette C.**

**2001 *Homesteads on the Purgatoire: Frontiers of Culture Contact in 19<sup>th</sup> Century Colorado.* Unpublished Ph.D. dissertation, Department of American Civilization, University of Pennsylvania, Philadelphia.**

Church conducted research in the Pinon Canyon Maneuver site (PCMS) in southeastern Colorado that provides a detailed study of two historically documented culturally distinct homesteads. Her study serves to more clearly define archaeological variability on sites for which there is some documented control over sociocultural variability in order to more firmly establish causal links.

**Clark, Bonnie J.**

**2003 *On the Edge of Purgatory: An Archaeology of Ethnicity and Gender in Hispanic Colorado.* Unpublished Ph.D. dissertation, Department of Anthropology, University of California, Berkeley.**

Clark's dissertation research focused on researching two sites in the Pinon Canyon Maneuver Site. These were La Placita and the Wild Plum Site. The residents of the sites put into practice a philosophy expressed in Hispanic folk culture concerning the nurturing nature of land and the need to keep it natural. This view contrasts with the Anglo-American practice in the region, which ignored or vastly modified the natural resources. This excellent study, along with Church's dissertation, above, has served to further reveal and enhance the cultural landscapes of Hispanic Colorado and represent texts in which the important histories of the region can be read.

**Clint, David K.**

**1976 *Colorado Historical Bottles & ETC., 1859-1915.* Johnson Publishing Company, Boulder, Colorado.**

Clint provides an illustrated history of bottles, bottlers, and beverage distributors in Colorado up to 1915. He illustrates embossed and lettered bottles, insulators, and jugs; profiles many companies; and describes technological innovations. Companies are also indexed by town or city in gazetteer style with owners and proprietors identified and date ranges of operation included.

## COLORADO PREHISTORIC CONTEXTS

Gilmore, Kevin P., Marcia Tate, Mark L. Chenault, Bonnie Clark, Terry McBride, and Margaret Wood  
1999 *Colorado Prehistory: A Context for the Platte River Basin*. Colorado Council of Professional Archaeologists, Denver.

Lipe, William D., Mark D. Varien, and Richard H. Wilshusen  
1999 *Colorado Prehistory: A Context for the Southern Colorado River Basin*. Colorado Council of Professional Archaeologists, Denver.

Martorano, Marilyn A., Ted Hofer, III, Margaret (Pegi) A. Jodry, Vince Spero, and Melissa L Taylor  
1999 *Colorado Prehistory: A Context for the Rio Grande Basin*. Colorado Council of Professional Archaeologists, Denver.

Reed, Alan D., and Michael D. Metcalf  
1999 *Colorado Prehistory: A Context for the Northern Colorado River Basin*. Colorado Council of Professional Archaeologists, Denver.

Zier, Christian J., and Steven M. Kalasz  
1999 *Colorado Prehistory: A Context for the Arkansas River Basin*. Colorado Council of Professional Archaeologists, Denver.

The historic and protohistoric Native American landscape of all of Colorado was very diverse, and the five volumes of this important set of contexts covers it all, organized by the major drainage basins of Colorado. Understanding and treatment of post-contact archaeology is uneven, but these reports are a critical set of works for studying and understanding Colorado's Native Americans.

### **Deetz, James**

**1983 Scientific Humanism and Humanistic Science: A Plea for Paradigmatic Pluralism in Historical Archaeology.** In *Historical Archaeology of the Eastern United States: Papers from the R. J. Russell Symposium*, edited by Robert W. Neuman. *Geosciences and Man*, XXIII (April 29, 1983).

This is one of Jim Deetz's most salient essays, in which he offers an approach to historical archaeology based on a more humanistic view of material culture that contrasts with both the particularistic and heavily scientific approaches advocated by Stanley South.

### **Deetz, James**

**1996[1977] *In Small Things Forgotten: an Archaeology of Early American Life (expanded and revised)*. Doubleday, New York.**

One of the earlier works in “cognitive archaeology,” this basic and readable account of using material culture, excavated and above-ground, is actually a quite sophisticated interpretation of transformations in English colonial U.S. culture. Among other things, Deetz introduces the concept of the Georgian cultural horizon to American history and historical archaeology. His emphasis is on how things that early colonists rarely recorded, and historians rarely write about, can tell us fundamental things about how colonists saw and organized their world. Archaeologists often think of historical archaeology as being especially useful when applied to the record left by those who left no records. However, in this work Deetz nicely demonstrates the usefulness of this research on well-documented peoples and places.

**Fike, Richard E.**

**1987** *The Bottle Book: A Comprehensive Guide to Historic, Embossed Medicine Bottles.* Peregrine Smith Books, Salt Lake City.

Fike's book has become the basic reference for identifying patent medicine bottles. Information at the beginning of the volume provides descriptive terminology for bottle shapes, types, and finishes. The text is organized by the type of medication or key words in the embossing and then alphabetically by company name within each group using the wording found on the bottles as the heading for each. Indexes at the back of the book are particularly helpful for identifying bottles when only fragments have been found. Only a few of the bottles are illustrated with drawings. To identify fragmentary bottles it may be necessary to confirm identifications with other illustrated sources, but researchers will always come back to this reference because it is usually the only place where historical information can be found. The book has recently been reprinted with updates and revisions.

**Fontana, Bernard L.**

**1967** The Archaeology of Post-18th Century Ranches in the United States. *Historical Archaeology* 1:60-63.

This article, paired with Fontana's 1962 work *Johnny Ward's Ranch: A Study in Historic Archaeology* (*Kiva* 28[1]), constitutes some of the earliest archaeological work on historic period ranching in the western United States. The studies have held up through time. The 1962 work provides a good example of the initial research on the manufacture and history of some common materials such as nails and tin cans, and the 1967 work suggests some larger, regional, continental, and global frameworks and research questions for the archaeology of livestock ranching.

**Fraser, Clayton B., and Jennifer H. Strand**

**1997** Railroads in Colorado, 1858-1948. National Register of Historic Places Multiple Property Documentation Form. Fraserdesign, Loveland, Colorado. Prepared for the Foundation for the Colorado State Parks, Inc., and the Colorado Historical Society, State Historical Fund, Denver. Copies available from the Colorado Historical Society, Office of Archaeology and Historic Preservation, Denver.

This multiple property listing presents a basic history and context for railroads in Colorado through the Second World War. The document also includes maps of the names and extent of principal railroad lines in Colorado at several watershed periods; a listing of key railroad names, years of operation, and the other companies that these railroads acquired or were acquired by; a discussion of railroad property types and significance criteria; and references to major historical sources for Colorado railroads. This listing is a useful initial source for identifying traces of historic railroads and finding basic source material on individual railroads.

**Gates, William C., Jr., and Dana E. Ormerod**

**1984** The East Liverpool Pottery District: Identification of Manufacturers and Marks. *Historical Archaeology* 16(1-2).

Gates and Ormerod provide an excellent guide to marks and manufacturers' histories for the most productive pottery manufacturing areas of the United States. Marks are illustrated photographically with text explaining company histories and date ranges for the marks. An index at the end of the text provides an opportunity to identify partial marks through their motifs.

**Gilchrist, Roberta**

**2005 Introduction: Scales and Voices in World Historical Archaeology. *World Archaeology* 37(3):329-336.**

ABSTRACT: This paper...[introduces] some key debates that have characterized the recent practice of historical archaeology. The definition of historical archaeology is explored according to parameters of chronology and methodology, drawing a distinction between New World traditions that define the subject as 'post-Columbian' and Old World approaches that establish broader connections with the 'documentary archaeology' of all literate societies. Current issues in European and American historical archaeology are highlighted, including the gradual breakdown of the medieval/post-medieval divide and the call for a global 'modern-world archaeology' to address the 'grand historical narratives' of the period, such as capitalism, economic improvement, and consumerism. The resistance to this global research agenda is explored with reference to archaeologies of diaspora and postcolonialism, which demand local perspectives to explore diversity and meaning. Finally, the innovative use of community archaeology and multi-vocality is introduced, with particular reference to the experimental narratives pursued by American historical archaeologists, in their new role as 'storytellers'.

**Godden, Geoffrey A.**

**1991 *Encyclopaedia of British Pottery and Porcelain Marks*. Barrie & Jenkins, London.**

Pottery from England is commonly found on historical sites in America. Godden has long been the standard reference for identifying the marks found on British pottery. The volume is organized alphabetically by manufacturer and includes line drawings of most of the marks with variations and date ranges indicated.

## **HANDBOOK OF NORTH AMERICAN INDIANS**

D'Azevedo, Warren L. (editor)

1986 *Great Basin*. Handbook of North American Indians, Volume 11, William C. Sturtevant, general editor. Smithsonian Institution, Washington, D.C.

DeMallie, Raymond J. (editor)

2001 *Plains*. Handbook of North American Indians, Volume 13 (2 parts), William C. Sturtevant, general editor. Smithsonian Institution, Washington, D.C.

Ortiz, Alfonso (editor)

1979 *Southwest*. Handbook of North American Indians, Volume 9, William C. Sturtevant, general editor. Smithsonian Institution, Washington, D.C.

1983 *Southwest*. Handbook of North American Indians, Volume 10, William C. Sturtevant, general editor. Smithsonian Institution, Washington, D.C.

Washburn, Wilcomb E. (editor)

1988 *History of Indian-White Relations*. Handbook of North American Indians, Volume 4, William C. Sturtevant, general editor. Smithsonian Institution, Washington, D.C.

The twenty volume set *Handbook of North American Indians* is an immense and encyclopedic reference covering an extraordinary range of Indian tribes and topics in the United States and beyond. The four regional volumes noted above include chapters on individual tribes, regional prehistory, linguistics, American history as it pertains to tribes and tribal relations, social organizations, customs, ceremonies, arts, and the history of research in the region, among others. Volume 4 provides comprehensive discussions of the important and often difficult relationship between tribes and the United States. Together, these five volumes are most germane to Colorado's American Indian history, protohistory, and prehistory.



**Hardesty, Donald L.**

**1991** *Toward an Historical Archaeology of the American West. Historical Archaeology 25(3):29-35.*

In this article, Hardesty sets the stage for historical archaeologists in the western United States to start addressing larger historical and anthropological questions with their data. It is certainly not an exhaustive list of questions but provides examples of possible research trajectories.

**ABSTRACT:** Since the 1970s, the amount of historic sites research in the Intermountain West has increased dramatically on a wave of mining and exploration for gas and oil. The conduct of historical archaeology in the region, however, continues to be site-specific and serendipitous without the benefit of regional research strategies. Several interpretive themes that might provide a regional framework are considered in this paper, including the evolution of hydraulic society, uncertain enterprises and boom-bust cycles, the legacy of conquest, frontier urbanism, and dependency upon the federal government.

**Hardesty, Donald L., and Barbara J. Little**

**2000** *Assessing Site Significance: A Guide for Archaeologists and Historians. AltaMira Press, Walnut Creek, California.*

*Assessing Site Significance* is an approachable guide to understanding the complexities of site significance vis-à-vis historical resources. It begins with a coherent step-by-step guide to determining eligibility. This guide is followed by useful case studies in which they apply their approach to a range of site types including mining districts and townsites.

**Hardesty, Donald L., Richard F. Carrillo, Steven F. Mehls, Jane L. Anderson and Thomas J. Lennon**

**1995** *Data Recovery Report of Lockwood Stage Station at the Pinon Canyon Maneuver Site, Las Animas County, Colorado. Prepared by Western Cultural Resource Management, Inc., Reno, Nevada. Prepared for USDI National Park Service, Rocky Mountain Regional Office, Denver. Copies available from the the Colorado Historical Society, Office of Archaeology and Historic Preservation, Denver.*

Hardesty argues for the examination of households as a unit of study from an ecological perspective in order to examine and understand similar adaptive processes in a frontier region. He states that the household is important on the frontier because it represents the fundamental unit of human biocultural evolution. It acts as an interface between biological and cultural processes. It is a dynamic changing system representing a set of rules and strategies. The household's visibility makes it a useful unit for study using both the documentary and archaeological sources: transformations can be recognized, for example, by architectural modifications or other changes in patterns of material culture. The excavation of the Lockwood Stage Station in the PCMS utilized these concepts and served to explain and appreciate the complexity of nineteenth century sites containing varied cultural components.

**Henderson, Charles W.**

**1926** *Mining in Colorado: A History of Discovery, Development and Production. U.S. Geological Survey, Professional Paper 138. Government Printing Office, Washington, D.C.*

Henderson provides detailed information about the mining of precious metals in Colorado through 1923. Much of the information is provided by county, but overall production of different minerals by year is also presented. Data are compiled primarily from annual reports of the U.S. Mint or Colorado Bureau of Mines, but considerable text is about particular mines and trends in production that considers economics and technological innovations.

**Holleran, Michael**

**2005 *Historic Context for Irrigation and Water Supply Ditches and Canals in Colorado.* Prepared by Center for Preservation Research, University of Colorado at Denver. Prepared for Colorado Historical Society, State Historical Fund (Grant No. 2001-02-068), Denver. Copies available from the Colorado Historical Society, State Historical Fund, Denver.**

This study presents a historic context for water ditches and canals in Colorado. It provides sources of information for various regions of Colorado and a foundation for documenting and evaluating particular water conveyance systems.

**Horn, Jonathon C.**

**2002 *A Cultural Resource Inventory of Select Historic Mining Sites, San Miguel County, Colorado.* Prepared by Alpine Archaeological Consultants, Inc., Montrose, Colorado. Prepared for San Miguel County, Telluride, Colorado. Copies available from the Colorado Historical Society, Office of Archaeology and Historic Preservation, Denver.**

Horn records and reports on 43 historic sites in the upper basins above Telluride, mostly associated with mining in the area. Included are 13 aerial tramways and an isolated tram tower, the Alta townsite, three isolated powder houses, four isolated log cabins, an electrical transformer house, a maintenance section house for the Western Colorado Power Company, Fort Peabody (used during the 1904 miner's strike), and 11 mine complexes. Features and structures in the mine complexes include stamp mills, tram houses, ore bins, hoist houses, shops, offices, and living quarters. A detailed history of the area is included, as are histories specific to the recorded mines and mills.

**Horn, Jonathon C.**

**2004 *Landscape-Level History of the Canyons of the Ancients National Monument, Montezuma and Dolores Counties, Colorado.* Prepared by Alpine Archaeological Consultants, Inc., Montrose, Colorado. Prepared for Canyons of the Ancients National Monument, Bureau of Land Management, Dolores, Colorado. Copies available from the Bureau of Land Management, Canyons of the Ancients National Monument, Dolores, Colorado.**

This report is a comprehensive history of the Canyons of the Ancients National Monument and the surrounding area in southwestern Colorado. The history was prepared as a context for management of historic sites in the monument and is organized chronologically and topically. The potential for certain site types to be present in the monument is discussed, and known historic sites in the monument are considered relative to the historical context. Recommendations are made for future management of historic sites on the monument.

**Horn, Jonathon C., Jerry Fetterman, and Linda Honeycutt (compilers)**

**2003 *The Mid-America Pipeline Company/Williams Rocky Mountain Expansion Loop Pipeline Archaeological Data Recovery Project, Northwestern New Mexico, Western Colorado and Eastern Utah.* Prepared by Alpine Archaeological Consultants, Inc., Montrose, Colorado, and Woods Canyon Archaeological Consultants, Inc., Yellow Jacket, Colorado. Prepared for Williams Energy Services, Tulsa, Oklahoma. Copies available from the Bureau of Land Management, Utah State Office, Salt Lake City**

This data recovery report includes the results of excavations at two homesteads (5DL318 and 5GF1561), a stage station (42UN2558), the coal mining town of Carbonera (5GF1562), an 1890 construction camp on the Rio Grande Southern (RGS) Railroad (5LP1915), an RGS maintenance siding camp (5LP1920), and an RGS Section House (5LP1921).

**Horning, Audrey J.**

**2000** *Archaeological Considerations of "Appalachian" Identity.* In *The Archaeology of Communities: A New World Perspective*, edited by Marcello A. Canuto and Jason Yaeger, pp. 210-230. Routledge, New York.

Horning's article presents a case study with the pros and cons of working with earlier sociological or historical data. She also works very productively with an initially hostile descendant community, and is instrumental in changing public interpretation of these rural communities and dispersed farmsteads in Shenandoah National Park. This case highlights the complexities of presenting past and present identities of those who lived there and Appalachian identities and stereotypes (generally rural and agricultural) imposed from without. The study works at multiple scales, from farmstead to "hollow" to region, in terms of choices made by individuals, kin groups, and communities.

**Howe, Daniel Walker**

**1976** *Victorian Culture in America.* In *Victorian America*, edited by Daniel Walker Howe, pp. 3-28. University of Pennsylvania Press, Philadelphia.

In this essay Howe explains and defines the concept of Victorian culture in America. This seminal work on the subject provides the intellectual base upon which much of the discussion of Victorianism in Colorado is founded.

**Jennings, Justin**

**2005** *Reviews of A Marxist Archaeology*, by Randall R. McGuire; *Behavioral Archaeology* by Michael Brian Schiffer; *Method and Theory in Historical Archaeology* by Stanley South; and *The Recovery of Meaning: Historical Archaeology in the Eastern United States*, edited by Mark P. Leone and Parker B. Potter, Jr. Percheron Press/Eliot Werner Publications, Clinton Corners, New York. *American Antiquity* 70(2):389-392.

This multibook review very capably summarizes four leading works on the various interpretive approaches taken in historical archaeology over the years. It lends perspective to how one might go about studying the historical archaeology record and is an excellent resource for both students and practicing professional historical archaeologists.

**Jones, Sian**

**1997** *The Archaeology of Ethnicity: Constructing Identities in the Past and Present.* Routledge, London.

The most recent overview of ethnicity and archaeology is provided by Jones in this influential book. She offers a reassessment of the ways in which past cultural groups are reconstructed from archaeological evidence by using a comprehensive and critical synthesis of recent theories of ethnicity in the human sciences. Jones undertakes an analysis and summary of anthropological and archaeological theories that concern ethnicity and its application to archaeology. The results are used to determine how the subject of ethnicity has been investigated in the past. Her examination also provides a background for conducting future research. She develops a new framework for the analysis of ethnicity in archaeology. The framework includes important methodological, interpretive, and political implications to address the dynamic and situational nature of ethnic identification.

**JRP Historical Consulting Services, and California Department of Transportation**

**2000** *Water Conveyance Systems in California. Historic Context Development and Evaluation Procedures.* JRP Historical Consulting Services, Davis, California, and California Department of Transportation, Environmental Program/Cultural Studies Office, Sacramento, California.

This document presents a perspective and context for documenting and evaluating water conveyance systems in California. It is particularly useful for its discussion of how to deal with small segments of water conveyance systems crossed by linear (highway) projects. The history of water conveyance systems between

California and Colorado has many differences but also many similarities and this context document provides useful insights applicable to Colorado water conveyance resources.

**Kutsche, Paul, John R. Van Ness, and Andrew T. Smith**

**1976 A Unified Approach to the Anthropology of Hispanic Northern New Mexico: Historical Archaeology, Ethnohistory, and Ethnography. *Historical Archaeology* (10):1-16.**

Ethnographers Kutsche and his coauthors suggest ways to recognize Hispanic versus non-Hispanic sites based on patterns of architecture, artifacts, and settlement at a larger scale. These suggestions apply to both communities and also individual farms and ranches in land grant settings.

ABSTRACT: Archaeology, ethnohistory, ethnography – three methodologies within the same body of theory – can be used cooperatively to reconstruct the cultural history of Hispanic Northern New Mexico. The leads suggested for the investigation of Hispanic culture are discussed under the interrelated headings of ecology, social organization, and trade. Other benefits of intensive joint work include distinguishing ideal from real culture and testing theories of culture change. The approach outlined could serve as a model for the investigation of other historical traditions in the same or other parts of the world.

**Leacock, Eleanor Burk, and Nancy O. Lurie (editors)**

**1971 *North American Indians in Historical Perspective*. Random House, New York.**

Leacock and Lurie compiled what is still an excellent source on American Indian history and culture, which very clearly illuminates the repetitive patterns of culture change that American Indian peoples witnessed. The Introduction in particular is still quite useful although some of the articles are now somewhat dated.

**Lees, William B.**

**1988 *Kansas Preservation Plan Section on Historical Archaeology*. Archaeology Department, Kansas State Historical Society, Topeka.**

This well-written and well-organized work deals explicitly with the history, logistics, and practice of historical archaeology in Colorado's neighboring state of Kansas. Many of the critiques Lees makes and his suggestions for change are applicable to Colorado as well. These suggestions for change are laid out in lists and bullet points that make them easy to find in the text, and they are grounded enough that they will have practical application in any research setting, be it cultural resource management, academia, or government agency work.

**Lehner, Lois**

**1988 *Lehner's Encyclopedia of U.S. Marks on Pottery, Porcelain & Clay*. Collector Books, Paducah, Kentucky.**

This encyclopedia is the most complete reference for marks on American-made ceramics. Most of the marks are hand drawn and many could be better rendered. However, they are mostly serviceable and recognizable when compared with the actual pottery marks. Histories are generally good but sometimes briefer than what would be desired, and it is often difficult to ferret out the actual date range of a particular mark with the reference style that is used. The indexes at the back of the book are very good, particularly the index of marks for electrical porcelain insulator manufacturers.

**Lightfoot, Kent G.**

**1995 *Culture Contact Studies: Redefining the Relationship Between Prehistoric and Historical Archaeology*. *American Antiquity* 60(2):199-217.**

ABSTRACT: Archaeology is poised to play a pivotal role in the reconfiguration of historical anthropology. Archaeology provides not only a temporal baseline that spans both prehistory and history but the

means to study the material remains of ethnic laborers in pluralistic colonial communities who are poorly represented in written accounts. Taken together, archaeology is ideally suited for examining the multicultural roots of modern America. But before archaeology's full potential to contribute to culture contact studies can be realized, we must address several systemic problems resulting from the separation of "prehistoric" and "historical" archaeology into distinct subfields. In this paper, I examine the implications of increasing temporal/regional specialization in archaeology on (1) the use of historical documents in archaeological research, (2) the study of long-term culture change, and (3) the implementation of pan-regional comparative analyses.

**Limerick, Patricia Nelson**

**1987** *The Legacy of Conquest: The Unbroken Past of the American West.* W. W. Norton, New York.

Limerick's historical work was groundbreaking in the early days of what has come to be called the "New Western History." She called into question what had been the basic model for western U.S. history as proposed by Frederick Jackson Turner, although she does not reject every aspect of his work. For such early scholars, the U.S. West was, by definition, rural. In their models, agriculture was one of the early stages of "civilizing" the Prairie and a step towards the end of "the frontier". Limerick, in contrast, breaks down the barriers between the pre- and post-frontier West, rural and urban West, as well as other stereotypes and mythologies, using social historical research. In doing so, she explicitly questions popular models and definitions of "the frontier."

**Maxwell, D. B. S.**

**1993** *Beer Cans: A Guide for the Archaeologist.* *Historical Archaeology* 27(1):95-113.

As time goes on, the need to understand changes in beer-can technology is more and more important for determining whether or not a site is of historic age or when disturbance to a site may have taken place. This article provides a chronology for technological changes with supporting photographic illustrations that enables beer cans to be dated with surprising precision.

**McGuire, Randall H.**

**1982** *The Study of Ethnicity in Historical Archaeology.* *Journal of Anthropological Archaeology* 1:159-178.

Some of the earliest work in historical archaeology that incorporated ethnicity was carried out in various parts of the southeastern, northeastern, and western United States during the 1970s and 1980s. McGuire, using examples of previous work throughout the United States and his own work in southern Arizona, was one of the first archaeologists to begin examining the broader questions of how ethnic groups form and change, and he formulated a general theory of ethnicity. Utilizing the available sociological and anthropological data, he constructed a theory that was "based on the interrelationships among three variables; competition, ethnocentrism, and power" (p. 160). He further outlines a theoretical framework that describes the functional nature of the interrelationships. The framework states that 1) the motivation for group formation is created by competition; 2) the ethnocentrism created is channeled along ethnic lines; and 3) the nature of the relationship is determined by the differential distribution of power.

**National Park Service**

**1996** *Revised Thematic Framework.* National Park Service, Washington, D.C.

This bulletin is a must-have for anyone assessing the significance of historical archaeological resources.

**Nickens, Paul R. (editor)**

**1988** *Archaeology of the Eastern Ute: A Symposium*. CCPA Occasional Papers No. 1, Colorado Council of Professional Archaeologists, Denver.

This volume clearly illustrates the status of Ute archaeology as of 1988. It contains some useful early articles on the eastern Ute and points out what the pressing data needs were at that time.

**Ormes, Robert**

**1980** *Tracking Ghost Railroads in Colorado*. Revised printing. Century One Press, Colorado Springs.

Have an unidentified railroad grade? This work might be the reference you need. The names used are the historical names and the most appropriate for identification, particularly if a line is still in use or was acquired by one of the large railroad companies, such as the Union Pacific or Burlington Northern. Maps in the text are line drawings and are sometimes hard to correlate to information in the text. Important historical information is included on the maps for construction and abandonment histories. This book is a very good reference, but it shouldn't be the only source; the *Railroads in Colorado, 1858-1948* (Fraser and Strand 1997, above) multiple properties listing should also be consulted.

**Peake, Ora Brooks**

**1937** *The Colorado Range Cattle Industry*. Arthur H. Clark, Glendale, California.

*The Colorado Range Cattle Industry* is quite dated but does have a fair amount of information specific to Colorado, including stock associations, ordinances, regulations, and laws.

**Praetzellis, Adrian, and Mary Praetzellis**

**1992** *Faces and Facades; Victorian Ideology in Early Sacramento*. In *The Art and Mystery of Historical Archeology: Essays in Honor of James Deetz*, edited by Anne Elizabeth Yentsch and Mary C. Beaudry, pp. 75-99. CRC Press, Boca Raton, Florida.

The authors provide another excellent work on Victorian culture in historical archaeology and add important new references and perspectives on the subject.

**Praetzellis, Mary, and Adrian Praetzellis**

**2004** *Putting the "There" There: Historical Archaeologies of West Oakland*. Prepared by the Anthropological Studies Center, Sonoma State University. Prepared for the California Department of Transportation. Copies available from the California Department of Transportation, District 4, Oakland.

This synthetic report presents the results of archaeological, architectural, and oral history research for 22 city blocks of West Oakland. The chapter on methodology is an excellent resource for researchers pursuing urban archaeology in the western United States.

**Reed, Alan D., and Jonathon C. Horn**

**1995** *Cultural Resource Inventory of a Portion of the Picketwire Canyonlands, Comanche National Grassland, Las Animas and Otero Counties, Colorado*. Prepared by Alpine Archaeological Consultants, Inc., Montrose, Colorado. Prepared for Comanche National Grassland, Pike-San Isabel National Forests, La Junta, Colorado. Copies available from the Colorado Historical Society, Office of Archaeology and Historic Preservation, Denver.

Reed and Horn provide history and descriptions of numerous Hispanic ranches occupied from the late 1860s to the early 1880s. These ranches include the original Rourke Ranch site and other sites associated with the Rourke family, residential components and a church associated with the Domacio Lopez family, and several other early historic ranch and residential components. The sites are considered in terms of settlement patterns, historical events, social climate, and artifact assemblage patterning.

**Reed, Alan D., Rand A. Gruebel, Stephen M. Kalasz, Jonathon C. Horn, John D. Cater, and Kimberly Redman**

**2001 *The TransColorado Natural Gas Pipeline Archaeological Data Recovery Project, Western Colorado and Northwestern New Mexico (CD version)*. Prepared by Alpine Archaeological Consultants, Inc., Montrose, Colorado. Prepared for TransColorado Gas Transmission, Lakewood, Colorado. Copies available from the Colorado Historical Society, Office of Archaeology and Historic Preservation, Denver.**

Alpine Archaeology's data recovery report for the TransColorado project is an excellent cultural resource management (CRM) report useful on a number of levels. From a CRM perspective, the authors explain and justify clearly choices they make when confronted with the usual challenges of CRM on large projects: budget, extent and amount of resources, and uneven quality of prior site recording. The diversity of rural agricultural site types examined provide good examples of how anthropological and historical research questions can be applied across varied resources and how cultural resource management can be a vehicle for testing historical and other models by reformulating them as testable hypotheses. Also, the illustration, description, and analytical treatment of artifacts are excellent. Among historic era resources, this report includes results of excavations of two homesteads (5ME6825 and LA36652), two agricultural residences (5ME6642 and 5ME6826), a country store (5ME642), and an oil and gas exploration site (5ME6822).

**Ringhoff, Mary**

**2002 *The Archaeological Study of "Little Rome": Investigation of a Historic Mining Community in Hinsdale County, Colorado*. Prepared by Department of Anthropology, University of Nevada, Reno. Prepared for the Bureau of Land Management, Gunnison Resource Area, Gunnison, Colorado. Copies available from the Colorado Historical Society, Office of Archaeology and Historic Preservation, Denver.**

Ringhoff's report is a fine example of research in a residential area of a mining district. It also serves as a case study for the careful analysis required when local history is at odds with the material record.

**Rock, James T.**

**1984 Cans in the Countryside. *Historical Archaeology* 18(2):97-111.**

This article is a very handy reference for gaining an understanding of the technology of cans of all sorts, particularly food cans. The information presented here should eliminate the term "tin can" from the archaeologists' vocabulary and replace it with more precise and meaningful terminology. Technological changes in can manufacture are explained and illustrated and corresponding chronological information is presented that should be basic knowledge to all archaeologists working on later nineteenth and early twentieth century sites. Unpublished versions of Rock's research are available that provide even more information on a wider variety of cans.

**Rogge, A. E., D. Lorne McWatters, Melissa D. Keane, and Richard P. Emanuel**

**1995 *Raising Arizona's Dams: Daily Life, Danger, and Discrimination in the Dam Construction Camps of Central Arizona, 1890s-1940s*. University of Arizona Press, Tucson.**

This published book provides a range of case studies in the archaeology of camps and company towns and is a delightful study of workers who built seven major dams in central Arizona from the 1890s to the 1940s. The work is based on archaeological investigations of workers' camps, gracefully intertwined with historical research, resulting in a very informative narrative. It is an excellent example of how archaeology can illuminate the history of a class of people for which little was known before. *Raising Arizona's Dams* is also a good example of how research derived from a cultural resources management project can be presented to the public in a way that contributes to a larger understanding of history.

**Russell, Carl P.**

**1967 *Firearms, Traps & Tools of the Mountain Men.* Alfred A. Knopf, New York.**

Although the items illustrated and discussed are considerably earlier than what is typically seen in Colorado, this is a fascinating reference that not only shows and describes the goods carried and used by fur trappers and traders of the 1820s to 1840s but gives considerable useful background information about the lives of the mountain men and how they survived. It is particularly helpful in identifying and providing background for artifacts that may be found as trade goods on Native American sites. Most of the items are not restricted to the 1820s to 1840s time period and may be found on sites of earlier and later ages.

**Sagstetter, Beth, and Bill Sagstetter**

**1998 *The Mining Camps Speak: A New Way to Explore the Ghost Towns of the American West.* Benchmark Publishing of Colorado, Denver.**

The Sagstetters provide a good basic reference for interpreting structural elements, artifacts, and equipment found at historic mining sites. The book is organized topically and is not a collector's guide, but rather promotes a preservation ethic.

**Sánchez, Joseph P.**

**1997 *Explorers, Traders, and Slavers: Forging the Old Spanish Trail, 1678-1850.* University of Utah Press, Salt Lake City.**

This important work regarding Spanish and Ute trade relations and the Old Spanish Trail contains a useful translation of Rivera's encounters with Colorado's Utes. It does not, however, contain any useful analysis of Rivera's travel route.

**Schuyler, Robert L. (editor)**

**1980 *Archaeological Perspectives on Ethnicity in America.* Baywood Publishing, Farmingdale, New York.**

This study is a compendium of a series of historical archaeological studies with a focus on black and Asian-Americans and carried out throughout the east and west coasts. It represents one of the early attempts to address the concept of ethnicity in the archaeological record.

**Schuyler, Robert L.**

**1988 *Archaeological Remains, Documents, and Anthropology: A Call for a New Culture History.* *Historical Archaeology* 22:36-42.**

Since Robert Schuyler wrote this article, many broader anthropological questions, including many he mentions in this article, have been addressed by historical archaeologists. Schuyler addresses one of the early and still extant criticisms of historical archaeology: that it is theoretically deprived. He stresses the importance of testing larger theoretical questions against the nuts and bolts of more local and regional interpretations and data gathering.

**ABSTRACT:** Historical archaeology is either a significant or superfluous endeavor, depending on the level one stands on to critique the discipline. If theoretical questions concerning the nature, dynamics and evolution of cultures are the starting point, or equally if more substantive but similarly broad questions of modern "world systems" are selected, then the results of a quarter century of excavations on historic sites are indeed weak and unconvincing. In contrast, a view grounded on "culture history" or "historic ethnography" finds historical archaeology to be potentially an impressive, productive field, equal in many ways to other data sources including written records. It is suggested that "historic ethnography," based equally on archaeology and written sources, is the future natural sphere for the archaeological investigation of the modern world (A.D. 1400-20<sup>th</sup> century).



**Schweigert, Kurt P.**

**1998** *Electrical Development in the United States Emphasizing Activities in Colorado, Wyoming, Nebraska, and Utah*. Historic context document abstracted from **Historic Evaluation of Western Area Power Administration Facilities, Colorado, Wyoming, Nebraska, Utah**. Prepared for **Western Area Power Administration, Rocky Mountain Region**. Manuscript on file, **Office of Archaeology and Historic Preservation, Denver**.

This assessment addresses the historic context of electrical generation and transmission facilities of the Western Area Power Administration in Colorado and adjacent states. It has useful historical information and provides good examples of evaluation of abandoned and operational facilities. However, reference to the histories of other generation and transmission systems is selective, and this report should not be used as a general context for generation and transmission facilities in Colorado.

**Smith, Duane A.**

**1967** *Rocky Mountain Mining Camps: The Urban Frontier*. **University of Nebraska Press, Lincoln**.

Smith utilizes a basic anthropological perspective on American history and constructs the original outline of the evolution of mining settlements from camps to towns.

**South, Stanley**

**1977** *Method and Theory in Historical Archaeology*. **Academic Press, New York**.

This book outlines the quantified approach to pattern recognition which South pioneered. It is considered to be among the most important theoretical works in historical archaeology and illustrates the empirical approach of South in contrast with the more humanistic intuitive interpretive approaches, such as advocated by James Deetz.

**South, Stanley**

**1993** *Strange Fruit: Historical Archaeology, 1972-1977*. *Historical Archaeology* 27(1):15-18.

In this thought-provoking essay South summarizes how the field of historical archaeology has evolved in the post-processual period and discusses how the empirical approaches, which he so strongly advocated, have been disregarded by modern practitioners whom he feels have no unified approaches to interpretation in historical archaeology. The article gives perspective to the past and ongoing efforts of historical archaeologists.

**Stewart-Abernathy, Leslie C.**

**1992** *Industrial Goods in the Service of Tradition: Consumption and Cognition on an Ozark Farmstead Before the Great War*. In *The Art and Mystery of Historical Archaeology: Essays in Honor of James Deetz*, edited by A. E. Yentsch and M. C. Beaudry, pp. 101-126. **CRC Press, Ann Arbor, Michigan**.

Stewart-Abernathy examines a nineteenth-century rural farmstead in northwest Arkansas and presents a symbolic or cognitive alternative to strictly economic and materialist interpretations of acquisition and consumption of the industrial goods available from the wider regional and global markets. He says,

In excavations and interviews, and then when analyzing the data from fieldwork, it became evident that more was going on than simple purchases of industrial goods – whatever the market forced upon them – by unthinking buyers. The complexity was particularly evident in the contrast between the presence of obvious industrial goods in the ground and the simultaneous presence in the informant accounts of a traditional way of life. (p.111)

The author makes the argument that the interpretation of the presence of modern, industrial goods must be balanced by oral narratives and other evidence bearing on patterns of consumer choice of those goods; occupants assimilated newly available goods into older frameworks of meaning and tradition.

**Stoehr, C. Eric**

**1975 *Bonanza Victorian: Architecture and Society in Colorado Mining Towns.* University of New Mexico Press, Albuquerque.**

Stoehr's book is an excellent architectural study and a major reference source for Colorado's mining settlements. It describes a critical part of the data base for understanding Victorian Culture and its horizon in Colorado. Architecture and the documentary historical record can be combined with the archaeological database to offer an in-depth understanding of the evolution of Colorado's Victorian mining settlements.

**Thomas, Alfred Barnaby**

**1935 *After Coronado.* University of Oklahoma Press, Norman.**

This book utilizes Juan de Ulibarri's journal to detail the Spanish explorations into the region of El Cuartelejo, which comprised present-day eastern Colorado and western Kansas. Ulibarri described the geology, topography, rivers, and the people who inhabited the region 100 years earlier, to the year, than Zebulon Pike's famous expedition into the region of southeastern Colorado. Thomas used copies of original Spanish and Mexican records supplied by Herbert Bolton, who was one of the first historians to research original Spanish documents concerning their presence in America. Prior to the publication of his book, the Spanish activities north of New Mexico were not as familiar. He found that the characteristic process of Spanish expansion in North America had included the vast area of present Utah, Colorado, Kansas, and Nebraska. He noted that the expansion had "left records of exploration, accounts of tribal rivalries, the location and range of important Indians groups, and detailed the initial steps of the international struggle between Spain and France for the trans-Mississippi West" (p. vii).

**Toulouse, Julian Harrison**

**1971 *Bottle Makers and Their Marks.* Thomas Nelson, New York.**

This book is the most comprehensive source for the identification of bottle manufacturers' marks and the history of those manufacturers. The information has proven to be quite accurate, and only minor refinement of some of the histories has taken place through the years. For instance, better information is now known about the Owens Illinois Glass Company date marks; the FHGW, C&I, and DOC marks; the American Bottle Company; the various marks in keystones; and the date ranges of the Illinois Glass Co., Illinois Pacific Glass Co., and Whitall-Tatum marks. Many of the companies discussed in the volume have since gone out of business, so care should be taken to research the later histories of some of the marks that Toulouse indicates were still in use at the time the book was published.

**Toulouse, Julian Harrison**

**1977 *Fruit Jars: A Collector's Manual with Prices.* Thomas Nelson, Nashville, Tennessee.**

Of all the books available about canning jars, this provides the most complete information about manufacturers and the time periods when certain styles were made. Embossing found on jars is illustrated in line drawings, usually showing variations that are helpful in refining date ranges. Of particular help is information at the back of the book about patents for the wide variety of ways that the jars were sealed. Not only is this useful when patent dates or numbers are found on jars or lids, but it often enables an unusual closure type to be identified and dated.

**Trigger, Bruce G.**

**1989** *A History of Archaeological Thought*. Cambridge University Press, Cambridge, England.

Trigger presents a wonderful treatment of the history of archaeological method and theory in general and, unlike other such histories, includes perspectives from archaeological practice all over the world, not just the United States., Canada, and Britain. It is useful as a reference book and treats issues such as the relationship of anthropology and history in depth (again, including countries where archaeology is seen primarily as a humanity rather than a social science).

**Tucker, Gordon C., Jr., Sandra A. Chesrown, and Juston Fariello**

**2001** *The Historic Mill Street Dump (5EP3946), El Paso County, Colorado*. Prepared by URS Corporation, Denver. Prepared for Colorado Springs Utilities, City of Colorado Springs, Colorado. Copies available from the Colorado Historical Society, Office of Archaeology and Historic Preservation, Denver.

Tucker and his coauthors provide a useful example of research at an urban dump. The analysis of recovered artifacts is contextualized by the history of public sanitation in Colorado Springs and the neighborhood in which the dump was found.

**Twitty, Eric**

**2002** *Riches to Rust: A Guide to Mining in the Old West*. Western Reflections Publishing, Montrose, Colorado.

*Riches to Rust* is a comprehensive guide to the equipment that was used at mines in the West that goes beyond simply illustrating and describing the equipment, to provide important information about how one can interpret what equipment was once present at a mine, even when the equipment has been dismantled or completely removed. Also included is information about historic mining and mine development and how evidence remaining at mines can be used to interpret the level of development and the manner in which they were worked.

## **USGS MAPS OF HISTORIC ROADS AND TRAILS**

Scott, Glenn R.

1975 *Historic Trail Maps of the Pueblo 1° X 2° Quadrangle, Colorado*. Miscellaneous Investigations Series I-930. U.S. Department of the Interior, U.S. Geological Survey. U.S. Government Printing Office, Washington, D.C.

1976 *Historic Trail Map of the Greater Denver Area, Colorado*. Miscellaneous Investigations Series I-856-G. U.S. Department of the Interior, U.S. Geological Survey. U.S. Government Printing Office, Washington, D.C.

1986 *Historic Trail Maps of the Raton and Springer 30' x 60' Quadrangles, New Mexico and Colorado*. Miscellaneous Investigations Series I-1641. U.S. Department of the Interior, U.S. Geological Survey. U.S. Government Printing Office, Washington, D.C.

1989 *Historic Trail Maps of the Sterling 1° X 2° Quadrangle, Northeastern Colorado*. Miscellaneous Investigations Series I-1894. U.S. Department of the Interior, U.S. Geological Survey. U.S. Government Printing Office, Washington, D.C.

1994 *Historic Trail Map of the Limon 1° X 2° Quadrangle, Colorado and Kansas*. Miscellaneous Investigations Series I-2468. U.S. Department of the Interior, U.S. Geological Survey. U.S. Government Printing Office, Washington, D.C.

1995 *Historic Trail Map of the Lamar 1° X 2° Quadrangle, Colorado and Kansas*. Miscellaneous Investigations Series I-2469. U.S. Department of the Interior, U.S. Geological Survey. U.S. Government Printing Office, Washington, D.C.

1999 *Historic Trail Map of the Denver 1° X 2° Quadrangle, Central Colorado*. Miscellaneous Investigations Series I-2639. U.S. Department of the Interior, U.S. Geological Survey. U.S. Government Printing Office, Washington, D.C.

2001 *Historic Trail Map of the Trinidad 1° X 2° Quadrangle, Southern Colorado*. Miscellaneous Investigations Series I-2745. U.S. Department of the Interior, U.S. Geological Survey. U.S. Government Printing Office, Washington, D.C.

2004 *Historic Trail Map of the Leadville 1° X 2° Quadrangle, Central Colorado*. Scientific Investigations Map 2820. U.S. Department of the Interior, U.S. Geological Survey. U.S. Government Printing Office, Washington, D.C.

Scott, Glenn R., and Carol Rein Schwayder

1993 *Historic Trail Map of the Greeley 1° X 2° Quadrangle, Colorado and Wyoming*. Miscellaneous Investigations Series I-2326. U.S. Department of the Interior, U.S. Geological Survey. U.S. Government Printing Office, Washington, D.C.

These regional maps are indispensable reference sources for named trails, wagon roads, toll roads, some early motor vehicle roads, railroads, and other historic transportation corridors in major portions of Colorado. Some of the routes are approximate or averaged and should not be taken too literally, but they are good starts for looking into key literature. The accompanying narratives provide a wealth of information about potential sites, from wagon roads and railroads to forts and mining camps, and are worth a careful perusal to find alternative names, key dates, and additional sources of information. By putting names to routes, these maps also allow the interested researcher to then continue on looking at other sources of information.

**Weber, David J.**

**1982 *The Mexican Frontier, 1821-1846: The American Southwest Under Mexico*. Histories of the American Frontier. University of New Mexico Press, Albuquerque.**

This book was the first to use Mexican historical documents to view the Southwest under Mexican rule. Research on this era and on Mexico's northern frontier region had long been ignored, and the book represents a significant contribution in the fields Mexican and Southwestern history on the frontier that had been virtually ignored. Prior to the publication of this book the period had been referred to as the "dark age" in the historiography of the Southwest. Weber views the Southwest as an integral unit, and he helped to shed new light not only on the history of the American Southwest but also on the history of northern Mexico.

**Wendel, C. H.**

**1997 *Encyclopedia of American Farm Implements & Antiques*. Krause Publications, Iola, Wisconsin.**

That old unidentifiable piece of farm equipment may not be so mysterious any more after consulting Wendel's work. Equipment is organized alphabetically by function and then by the company of manufacture. Background information is provided about each class of equipment, but company information is brief, providing a springboard from which more research can be done. The encyclopedia is nicely illustrated with cuts from catalogs or advertisements of each item.

**West, Elliott**

**1995** *The Way to the West: Essays on the Central Plains*. University of New Mexico Press, Albuquerque.

West is a historian, but in these collected essays he uses archaeology, history, botany, biology, ecology, climatology, ethnography, ethnohistory, and other richly assorted sources to talk about the nineteenth century period of contact on the belt of the Colorado Plains between the Platte and the Arkansas rivers. The book is very well written, thoroughly researched, and a wonderful example of interdisciplinary work on the past. West focuses particularly on human ecology in these areas, based on diverse economic, subsistence, and ideological agendas of different groups upon the landscape midcentury.

**Wilkie, Laurie A.**

**2005** *Inessential Archaeologies: Problems of Exclusion in Americanist Archaeological Thought*. *World Archaeology* 37(3):337-351.

ABSTRACT: This paper will present an intellectual history of Americanist historical archaeology as it developed from the 1960s onwards within the context of processual archaeology and the resulting marginalization of studies of the recent past within Americanist archaeology. The paper will explore the intellectual problems and miss-steps caused by the artificial prehistory/history dichotomy prevalent in American archaeology. While many 'prehistorians' see historical archaeologies as inessential to their research, I will discuss contributions historical archaeology has made to the discipline, and the potential contributions of the sub-discipline more broadly to archaeological interpretation (or an archaeological historiography).

**Wood, W. Raymond**

**1990** *Ethnohistory and Historical Method*. In *Archaeological Method and Theory*, Vol. 2, edited by Michael B. Schiffer, pp. 81-110. University of Arizona Press, Tucson.

This article is an excellent source regarding the process of conducting ethnohistorical research for historical archaeology. It is a critical resource for any student or practicing archaeologist wishing to work with historical documents or in the realms of protohistory or post-contact history.

**Wyckoff, William**

**1999** *Creating Colorado: The Making of a Western American Landscape, 1860-1940*. Yale University Press, New Haven, Connecticut.

Wyckoff, a historical geographer, presents a detailed study of the historical geography of Colorado. He examines the state's formation and development through an artful interweaving of historical threads of economic endeavor, settlement patterns, local and national political history, and settlers' relationships to nonhuman nature. Wyckoff organizes the book geographically, allowing the reader to focus on local patterns of landscape formation but does not neglect the more overarching national and statewide influences. In addition to being well organized, the book is well written and very readable.

**Wylie, Alison**

**1993** *Invented Lands/Discovered Pasts: The Westward Expansion of Myth and History*. *Historical Archaeology* 27(4):1-19.

This article is a published keynote address to the Society for Historical Archaeology at a meeting at which the theme was "Transportation, Industrialization, and Expansion and the Nineteenth-Century West." Wylie, who writes about the philosophy of science as it applies to archaeological research, uses her experience doing historical archaeology in the Canadian West for Parks Canada to emphasize the extraordinary richness of the evidence. She concludes that "most existing philosophical models of scientific inference, especially the "positivist" models invoked by new archaeologists in the 1960s and 1970s, were simply too crude to capture the range of considerations that enter into archaeological interpretation." She believes that historical

archaeology has been “a persistent critical check on the simplifying assumptions that often seem to thrive at the interface between philosophy and archaeology,” giving examples from western Canadian case studies.

**Zumwalt, Betty**

**1980 *Ketchup, Pickles, Sauces: 19th Century Food in Glass*. Mark West Publishers, Fulton, California.**

This book is a compendium of food bottlers that distributed their product in glass vessels with embossing. Histories of the bottlers and their products are provided along with abundant illustrations of the bottles and their embossments. The book is organized alphabetically by bottler and is not restricted to the nineteenth century, but it has an abundant amount of information about products available well into the twentieth century. The volume is also well worth checking for background information about food products found in canned packaging because some companies distributed their products in both cans and glass.



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