Chapter 5

BASKETMAKER II (1000 B.C.–A.D. 500)

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BASKETMAKER II RESEARCH

Richard Wetherill's recognition that the physical and cultural remains of what he initially called the "Basket People" underlay those of the "Cliff Dwellers" (McNitt 1957:64-66) was one of the signal events of early Southwestern archaeology, because it indicated that significant cultural change had occurred in the past and that such changes could be recognized and documented by archaeological study. Excavations by Kidder and Guernsey in the rockshelters of northeastern Arizona demonstrated the validity of Wetherill's observations (Kidder and Guernsey 1919; Guernsey and Kidder 1921). At the Pecos Conference in 1927, Basket Maker II was proposed as a widespread period or stage of Southwestern culture. This period was characterized as "the agricultural, atlatl-using, non-pottery-making stage..." and was distinguished from "Basket Maker I...a postulated (and perhaps recently discovered) stage, preagricultural, yet adumbrating later developments" (Kidder 1927:490). Basket Maker II was also distinguished from "Late Basket Maker, Basketmaker III, or Post-Basket Maker" which was characterized as "...the pit or slab-house-building, pottery-making stage..." (Kidder 1927:490).

By the 1930s, it had become clear that the Pecos sequence applied only to the Anasazi or San Juan tradition of the northern Southwest, rather than being pan-Southwestern. In two influential papers published in the 1930s, Frank H. H. Roberts suggested dropping the numerical designators of the Pecos stage scheme, with Basket Maker II becoming simply "Basket Maker" and Basket Maker III becoming "Modified Basket Maker" (Roberts 1935, 1937). In addition, Pueblo I and II were combined into "Developmental Pueblo"; Pueblo III became "Great Pueblo"; and Pueblo IV, "Regressive Pueblo" (Roberts 1937:11-12). This scheme was popular for some years, but in recent decades, Southwestern archaeologists have increasingly returned to the original Pecos Conference labels, and have shifted from "Basket Maker II" to the simpler "Basketmaker II." In the 1950s, archaeological evidence of preagricultural foragers in the Southwest came to be subsumed under the term "Desert Culture" (Jennings and Norbeck 1955; Jennings, ed. 1956), and then under the even more general "Archaic stage" (Willey and Phillips 1958). Hence, the need for a postulated Basket Maker I stage disappeared (see Chapter 4 for a discussion of the Archaic in the study area and adjacent parts of the Four Corners area).

Early workers recognized that the Basketmakers (both II and III) typically had relatively long (or dolichocephalic) skulls, and the later Puebloans, shorter (brachycephalic) ones (Brew 1946:68). It was commonly recognized that the later skulls were shortened by artificial flattening of the occipital region, probably by the type of cradleboard used in infancy. However, numerous Southwesternists thought that differences in head form reflected more than the appearance of artificial deformation in the later populations. In an era when the cephalic index was accorded almost mystical status, this presumed physical difference, when combined with the associated cultural differences, was often taken as evidence that the Basketmakers had been replaced or absorbed by a different population—the Puebloans (Brew 1946:67-68). For example, Roberts (1935) notes in this context that a "new racial strain then invaded the region...with the infusion of new blood there was an acceleration in the unfolding of the cultural pattern." It was not until

Seltzer's (1944) systematic morphological analysis and Brew's (1946:67-73) systematic cultural analysis showed the extensive physical and cultural continuities across the Basketmaker-Pueblo transition that the notion of a widespread "Pueblo invasion" was put to rest.

From its beginnings as a recognized cultural and time-stratigraphic entity, Basketmaker II has been defined by the absence (or near-absence) of pottery and the presence of at least some evidence of maize. Hence, archaeologists working in the Four Corners area tend to apply the term Basket Maker II to pre-Puebloan archaeological complexes meeting both criteria. In other parts of the greater Southwest, archaeologists are more likely to characterize broadly similar complexes as Late Archaic or "Archaic-with-maize" (see Huckell 1996).

Since the late 1930s, Basketmaker II in the Four Corners area has been thought to date predominantly if not entirely to the period A.D. 1-500. This chronological assignment relied on the large number of dendrochronological dates associated with Basketmaker II materials in the Durango area (Morris and Burgh 1954; Dean 1975), as well as on dates from a few other sites. Consequently, archaeologists in the northern Southwest have tended to interpret archaeological materials that dated to the last millennium B.C. as Late Archaic. As discussed below, however, in the last 10 years or so, accelerator mass spectrometry (AMS) dating of archaeological maize samples has pushed the occurrence of maize in the Four Corners area back to at least 3000 B.P. and possibly earlier (Smiley 1994; Gilpin 1994). Many of these early dates are associated with "classic" Basketmaker II assemblages from rockshelter sites.

If the standard Pecos Conference definition is followed, and the term "Basketmaker II" is applied to any preceramic assemblages which include evidence of maize, then this period lasted a long time, quite likely 1,500 years or more. Archaeologists have been used to treating Basketmaker II as a more or less unitary phenomenon that can be characterized by a single, composite trait-list derived from both sheltered and open sites. The implications of the new "long chronology" have yet to be fully digested (Lipe 1994a), but surely this period is ripe for improved analysis of spatial, temporal, and adaptive variation along the lines initiated by Matson (1991) and Smiley (1994).

At the least, a new systematics is needed. Huckell (1996:343-344) suggests that the period between about 3500 B.P. and 2000 or 1500 B.P. in the Southwest be termed the "Late Archaic/Early Agricultural period." He proposes that in areas where agriculture became established, "Early Agricultural Period" could be used, while "Late Archaic" would be reserved for regions where hunting and gathering continued to be the basis for subsistence. Huckell's "Early Agricultural Period" thus appears equivalent to the original definition of Basketmaker II as "agricultural, atlatl-using, non-pottery-making" (Kidder 1927). Adoption of Huckell's terminology would be beneficial in that it would recognize that a long "pre-pottery Neolithic" (to throw in yet another term) existed across much of both the Desert and Upland Southwest. This would help reduce the confusion currently generated by the use of "Basketmaker II" in the Four Corners area and "Late Archaic with agriculture" elsewhere. Alternatively, Basketmaker II might be redefined on the basis of a larger set of diagnostic traits, and hence be applied as a kind of supraphase-level cultural taxon for certain Early Agricultural period assemblages in the northern Southwest. In either case, more refined local phase sequences or chronologies are needed to recognize the spatial and temporal variation in archaeological manifestations in the northern Southwest, including the study area, between about 3500 and 1500 B.P. For the purpose of this context document, Basketmaker II is defined to include Early Agricultural period manifestations in the Four Corners area, including southwestern Colorado. Thus, the Basketmaker II period extends from the

appearance of maize in the region to the first widespread occurrence of pottery at about A.D. 500. The date of 1000 B.C. is rather arbitrarily assigned to the beginnings of Basketmaker II in the study area. This way of defining Basketmaker II leaves open the question of whether it would be useful in the future to develop a more restrictive definition, based on additional cultural diagnostics.

The question of the origins of Basketmaker II has been of interest since the time of Kidder and Morris, and is discussed below in more depth. Matson (1991) has presented a thorough analysis of this problem. He argues that the classic Basketmaker II manifestations of the Marsh Pass and Grand Gulch regions in northeastern Arizona and Utah, respectively, are likely to represent migrations of groups from the growing agricultural villages of the San Pedro Cochise cultural tradition in the Sonoran Desert. On the other hand, he thinks that Durango Basketmaker II (Morris and Burgh 1954) and the Los Pinos phase sites (Eddy 1961, 1966, 1972) may represent indigenous hunter-gatherers who acculturated to a more sedentary, farming-based adaptation through contact with San Pedro migrants. Matson (1991) also posits an evolutionary shift in land-use patterns from an initial dependence on flood water farming in valley and canyon settings to a later expansion into dry-farming areas.

New evidence from southern Arizona now documents abundant evidence of maize agriculture in what was long termed the San Pedro stage of the Cochise Archaic tradition (Huckell 1995, 1996; Mabry et al. 1997; Mabry, ed. 1998; Muro 1998a, 1998b). Huckell (1995:16) separates the old San Pedro stage into two sequent phases of the Early Agricultural period—the San Pedro and the Cienega. The San Pedro phase currently is dated from about 3500-3200 to 2800 B.P. (800 B.C.) and the Cienega phase from about 800 B.C. to A.D. 150 (Mabry 1998b:18; Muro 1998b:15). Recent excavations at the Las Capas site in the middle Santa Cruz valley have produced evidence of pre-San Pedro phase maize dating earlier than 3500 B.P. in storage pits perhaps associated with mobile populations (Muro 1998b).

Pithouses with associated evidence of maize farming are clearly present in southern Arizona throughout the San Pedro phase. By the beginning of the Cienega phase, large pithouse villages were well established in flood plain settings in the middle Santa Cruz valley. Agricultural intensification is indicated by evidence of fairly extensive canal construction; pottery was also manufactured in small quantities during the phase (Mabry 1998a; Mabry et al. 1997).

Hard and Roney (1998) have recently reported a massive terraced village (Cerro de Trincheras) in the Casas Grande valley of northern Chihuahua that has yielded maize specimens dating as early as 3300 B.P. Combined with the evidence from southern Arizona, this indicates that maize agriculture was well established in favorable valley flood plain settings in the Sonoran Desert and that it supported large sedentary or semisedentary populations by at least 3000 B.P. These findings lend support to the hypothesis that the Sonoran Desert would have been a likely source of migrants pushing north in search of new farming opportunities. Also demonstrated is the heavy dependence of early Southwestern agriculture on flood plain farming. This supports the hypothesis that the first maize to reach the Four Corners region is likely to have been better adapted initially to flood water farming on valley flood plains, rather than to upland to dry-farming.

CHRONOLOGY

Mabry (1998a:765-766) has recently compiled Southwestern radiocarbon dates made directly on cultigens that are earlier than 2500 B.P. in the Southwest. Direct dating of cultigens avoids the "old wood" problem (Smiley 1994, 1985). According to Mabry, five sites on the Colorado Plateau have yielded dates of >2500 B.P. on cultigen samples: Three Fir Shelter at the northern edge of Black Mesa in northeastern Arizona (Smiley 1994); Lukachukai and Salina Springs in the Chinle Valley of northeastern Arizona (Gilpin 1994); and Sheep Camp Shelter and LA 18091 in the Chaco region of northwestern New Mexico (Simmons 1986). The earliest ages are 3610 ± 170 B.P. from Three Fir Shelter, and three dates older than 3000 B.P. from the Lukachukai Site. All of Mabry's very early cultigen occurrences on the Colorado Plateau are from the Four Corners area, within the area of occurrence of sites commonly assigned to Basketmaker II. Early direct cultigen dates from the Southern Basin and Range province, the Mountain Transition zone, and the upper Rio Grande valley are not consistently earlier, suggesting that the spread of maize cultivation through the Southwest was quite rapid, a point also made by Smiley (1994). After reviewing the dating evidence, Mabry (1998a:770) concludes: "Maize may have been cultivated in the Southern Basin and Range Province by 4000 B.P., in the Mountain Transition Zone by 3700 B.P., and on the Colorado Plateau and in the Upper Rio Grande Valley by 3400 B.P."

These dates suggest that it is not unreasonable to expect that cultigens were being grown in southwestern Colorado by perhaps 3000 B.P. At present, however, maize has not been dated this early in the study area, either by direct dates or by dating of associated materials. Lister (1997:134) has recently reported direct AMS dates of 181 B.C., 368 B.C., and 377 B.C. for maize samples from the North Shelter (Morris and Burgh 1954) near Durango. It appears that these are reported in calibrated calendric years, not radiocarbon years (Lister 1997:158). Stiger and Larson (1992:31) report a conventional radiocarbon age of 2220 ± 80 B.P. for a sample of maize kernels from Cottonwood Cave, north of the study area on the Uncompahgre Plateau in Montrose County (Hurst and Anderson 1949). These results indicate that a program of dating samples of potentially early maize from the study area that are preserved in museum collections would be most productive.

Smiley (1994) compared dates of preceramic agricultural sites from three latitudinally defined zones of the Southwest. The southern zone was separated from the middle zone by a latitudinal line drawn just north of the Salt River; the middle and northern zones were separated by a latitudinal line passing just south of the Four Corners point. Smiley found that dates from wood were consistently several hundred years older than those from cultigens or wild annuals; he termed the latter "sensitive dates." The southern and middle zones had very similar frequency distributions by age (Smiley 1994:177) with the mode at about 2300 calendar years B.P. Although dates earlier than about 3000 B.P. were rare in both zones, they were slightly more abundant in the southern zone. In the northern zone, however, the mode appears to be at about 1700 B.P. and the earliest dates are at about 2000-2300 B.P. This suggests that agriculture may have become established about the same time in the southern deserts and the southern Colorado Plateau, but extended into Colorado and Utah somewhat later. On the other hand, the northern zone data are based on a small sample of dates, primarily from Basketmaker II sites on Cedar Mesa (Matson et al. 1988) and Cowboy Cave (Jennings 1980); both locations are in Utah. They do not take into account the dates from the Falls Creek North Shelter reported by Lister (1997). Furthermore, some of the earliest middle zone dates (from Three Fir Shelter and the Marsh Pass shelters) are located just south of the boundary between the middle and northern zones.

Although only a few radiocarbon ages from the study area are confidently associated with early agricultural sites, the situation is much different when we turn to tree-ring dates. The Basketmaker II sites near Durango that were reported by Morris and Burgh (1954)—Talus Village and the North and South Falls Creek Shelters—yielded numerous datable pieces of charcoal and wood. In addition, there are tree-ring dates from several other Basketmaker II sites in the Durango region. Lister (1997) and Dean (1975) chronicle the long, complex history of collection of tree-ring samples in the Durango area by the amateur archaeologist I. F. "Zeke" Flora, as well as by professionals such as Earl Morris. Dean (1975:7) credits Flora for saving numerous dendrochronological samples from his own and others' excavations for many years, making possible the development of a much more comprehensive early chronology for the Durango area than could otherwise have been achieved. In summarizing the contributions of the Durango collections to the Southwestern tree-ring chronology, Dean notes:

> Despite the deficiencies of the Durango tree-ring collections, the archaeological and dendrochronological importance of this material cannot be overemphasized. The Falls Creek Rockshelters, Talus Village, and Ignacio 12:46 are the earliest tree-ring dated sites in the Southwest. Genuine Basketmaker II habitation structures at these sites are firmly dated to the third and fourth centuries A.D., while long B.C.-period occupations of the rockshelters have been demonstrated. This material has permitted the extension of the Southwest tree-ring record more than 260 years further back into the past, from 59 B.C.,where it stood for 20 years, to 322 B.C. [Dean 1975:7].

Smiley (1994) suggests that before about 2000 B.P., rockshelters were the favored location for Basketmaker II habitation sites, with open pithouse habitation sites becoming more common after that date. The best-known complexes of Basketmaker II pithouse sites are on Black Mesa in northeastern Arizona (Bearden 1984), Cedar Mesa in southeastern Utah (Matson et al. 1988; Matson 1991), at several locations in the Durango area (Morris and Burgh 1954; Fuller 1988a), and in the Navajo Reservoir area on the Colorado-New Mexico border (Eddy 1961, 1966, 1972). The houses reported from these areas all date to the first 500 years A.D., and primarily to the period A.D. 100-400. Most of the B.C. dates are from rockshelter locations, or at least they were at the time that Smiley's 1994 article was written.

More recent work suggests that Basketmaker II open pithouse sites may appear somewhat earlier in some areas than Smiley had proposed. Gilpin (1994) reports evidence of open pithouse habitation sites in the Chinle drainage of northeastern Arizona that date significantly before 2000 B.P. In fact, the Lukachukai site appears to date to 3000-3400 B.P., making it one of the earliest agricultural settlements on the Colorado Plateau if not in the Southwest. As summarized later in this chapter, Site 5MT10525 from the Ute drainage unit includes a probable Basketmaker II pit structure that dates to late B.C. times, as does Site 5MT5376 in the Monument-McElmo drainage unit. Recently, Woods Canyon Archaeological Associates have excavated a shallow probably Basketmaker II pit structure at Site 5MT13632, also in the Monument-McElmo area. Radiocarbon dates from this structure indicate a calendar-calibrated date of B.C. 200–A.D. 65 (Linda Honeycutt, personal communication, 1999).

Pithouse structures in open settings are a common feature of the Early Agricultural Period San Pedro and Cienega phase sites in the southern desert area of the Southwest, and have been documented in Archaic contexts in the Great Basin and in western Colorado (Mabry 1998a:762-763; Metcalf and Reed 1999). Hence, the apparent correlation of rockshelter

habitations with early Basketmaker II and open pithouse settlements with late Basketmaker II in the Four Corners area may be either in part or entirely a product of sampling error.

The general absence of pottery at most Basketmaker II sites in the study area clearly distinguishes them from later Basketmaker III and Pueblo period sites. Some of the Los Pinos phase sites have small quantities of pottery in apparent late Basketmaker II contexts, but this is a brown ware that also contrasts with later Basketmaker III gray ware. Wilson and Blinman (1994) note that similar pottery occurs fairly widely in the Mogollon area between about A.D. 250 or 300 and 500, but that such occurrences are rarer in Anasazi sites of this same time period. About A.D. 500, the appearance of a complex of traits ushers in the Basketmaker III period. This complex includes gray ware pottery in a variety of vessel forms, deep pithouses with antechanbers and troughed metates with associated two-hand manos (LeBlanc 1982).

Because most Basketmaker II sites in the study area have little or no pottery, they often are difficult to distinguish from aceramic sites dating to the Archaic or from some post-Pueblo Ute sites. The overall pattern of Basketmaker II in the Durango area, however, is quite distinctive. This includes corner-notched, expanding stem dart points; "T" shaped drills; trough and oval basin metates, often with deep grinding depressions; a mix of one- and two-hand cobble manos; distinctive very shallow circular pithouses with walls of coursed or cribbed logs and mud mortar; and a variety of large storage pits: jar-shaped, basin-shaped, and slab-lined. Matson (1991:45-46) also notes that the majority of close-coiled basketry from the Durango rockshelter sites is of half-rod-bundle foundation, with noninterlocking stitches. This differs from the standard Anasazi pattern of two-rod-and-bundle foundation with noninterlocking stitches (Matson 1991:45).

Matson (1991) suggests that the Late Basketmaker II material from the general Durango area be assigned to the Los Pinos phase, which he dates from about A.D. 200 to 400. This phase was originally recognized by Eddy (1961) in the Navajo Reservoir area, but Matson extends it to include Talus Village and the late Basketmaker II occupations of the Durango rockshelters (Morris and Burgh 1954) and the Tamarron site in the Animas Valley north of Durango (Reed and Kainer 1978). Although there is evidence of earlier occupation of rockshelter sites in the Durango area, the associations of artifacts, features, and dates were evidently not secure enough to permit Matson to develop a phase classification for this material. He believes that the Durango-area Basketmaker II materials overall are different enough from the classic western Basketmaker II of the Marsh Pass and Grand Gulch/Cedar Mesa areas to warrant considering them as representing two related but different cultural traditions (Matson 1991:122-123). Matson suggests that in the west, a cultural sequence can be recognized. Early rockshelter occupations in the Marsh Pass area of northeastern Arizona provide the basis for defining the White Dog Cave phase (ca. 500 B.C. to A.D. 1), followed by the Lolomai phase (ca. A.D. 1-200) based on open pithouse sites on Black Mesa; followed by the Grand Gulch phase (A.D. 200-400), based on survey and excavations on Cedar Mesa. It is only this terminal Basketmaker II phase that is contemporaneous with the Los Pinos phase to the east.

Irwin-Williams (1973, 1979) has argued on the basis of work in northwestern New Mexico that a widespread Oshara tradition was present on the southern Colorado Plateau in the Archaic, and that the Anasazi tradition developed in place from this base. She defines the En Medio phase, dated 800 B.C. to A.D. 400, as including Basketmaker II in its latest manifestations (Irwin-Williams 1973; Irwin-Williams and Tompkins 1968). Irwin-Williams and Tompkins (1968) recognize some similarities between the En Medio point styles and those of the Durango-area Basketmaker II sites and note differences between the artifact complex at En Medio and that of the

classic western Basketmaker II. Matson (1991:311) questions whether the En Medio complex might not be a mixture of Archaic and Basketmaker II materials, but does agree that it differs from western Basketmaker II. At this point, it is not clear that En Medio is a well-defined cultural complex, and in any case, the contexts of the pre-Los Pinos materials from the Durango area are not understood well enough to permit them to be assigned to En Medio or to a locally defined phase.

EXCAVATED BASKETMAKER II SITES IN THE STUDY AREA

Compared to sites of later periods, relatively few Basketmaker II sites have been excavated in the study area. The best-reported excavated sites are briefly described below. Several are from the Animas drainage unit (Talus Village, Falls Creek Shelters, Tamarron site, and Bodo Canyon sites). Excavations at sites in the Navajo Reservoir District just south of the Upper San Juan-Piedra drainage unit are also reviewed. Finally, work at Cougar Springs Cave in the Dolores drainage unit, at site 5MT10525 in the Ute drainage unit, and at 5MT5376 in the Monument-McElmo drainage unit is summarized. Figure 5-1 shows the location of these sites and also of some additional Basketmaker II sites and localities outside the study area.

Talus Village and the Falls Creek Shelters

The best-reported Basketmaker II sites in the study area remain those excavated by Flora and Morris in the Durango area in the late 1930s and in 1940. The excavation report by Morris and Burgh (1954) remains one of the best in Southwestern archaeology.

Talus Village is situated on a steep east-southeast–facing slope on the west margin of the Animas Valley at an elevation of 2070 m. The extensive excavation there revealed 35 often superimposed saucer-shaped oval to circular house floors on terraces dug into the slope. They ranged from 2.5 to 9 m in diameter, with about 5 m appearing to be the norm. Extensive superimposed trash midden layers were excavated on the slopes below the house terraces; midden layers also overlay house floors in some cases. Robinson and Cameron (1991:15) report that there are 36 tree-ring dates from Talus Village; the earliest cutting date is A.D. 171 and the latest date of any sort is 327. The elevation of the Animas Valley flood plain east of Talus Village is about 1980 m.

The North and South Shelters are located close together at about 2285 m in the western wall of Hidden Valley, a glacially cut bench located above the Animas Valley. Falls Creek runs through Hidden Valley near the shelters. Several late Basketmaker III-early Pueblo I pithouse sites on the floor of Hidden Valley upstream from the shelters were also excavated by Morris (Carlson 1963), and the shelters have light evidence of Basketmaker III occupation (Dean 1975:26). Both shelters are shallow and east facing, with narrow floors, giving way in front to steep slopes. Excavations revealed several Basketmaker II house floors built on terraces dug into the shelter deposits; portions of 9 house floors were identified in the North Shelter, and 4 in the South (Morris and Burgh 1954:51). Midden deposits occurred over and under house floors, and on the slopes in front of the shelters. In the North Shelter, an area termed the "Burial Crevice" was excavated by Flora prior to the work by Morris and Burgh; it yielded numerous perishable artifacts and several human remains, including a complete desiccated body of a young female (Morris and Burgh 1954; Lister 1997). There are 161 tree-ring dates from the two shelters that are thought to relate to the Basketmaker II component; the earliest cutting date is 147 B.C. and the latest Basketmaker II date of any sort is A.D. 413 (Robinson and Cameron 1991:15).

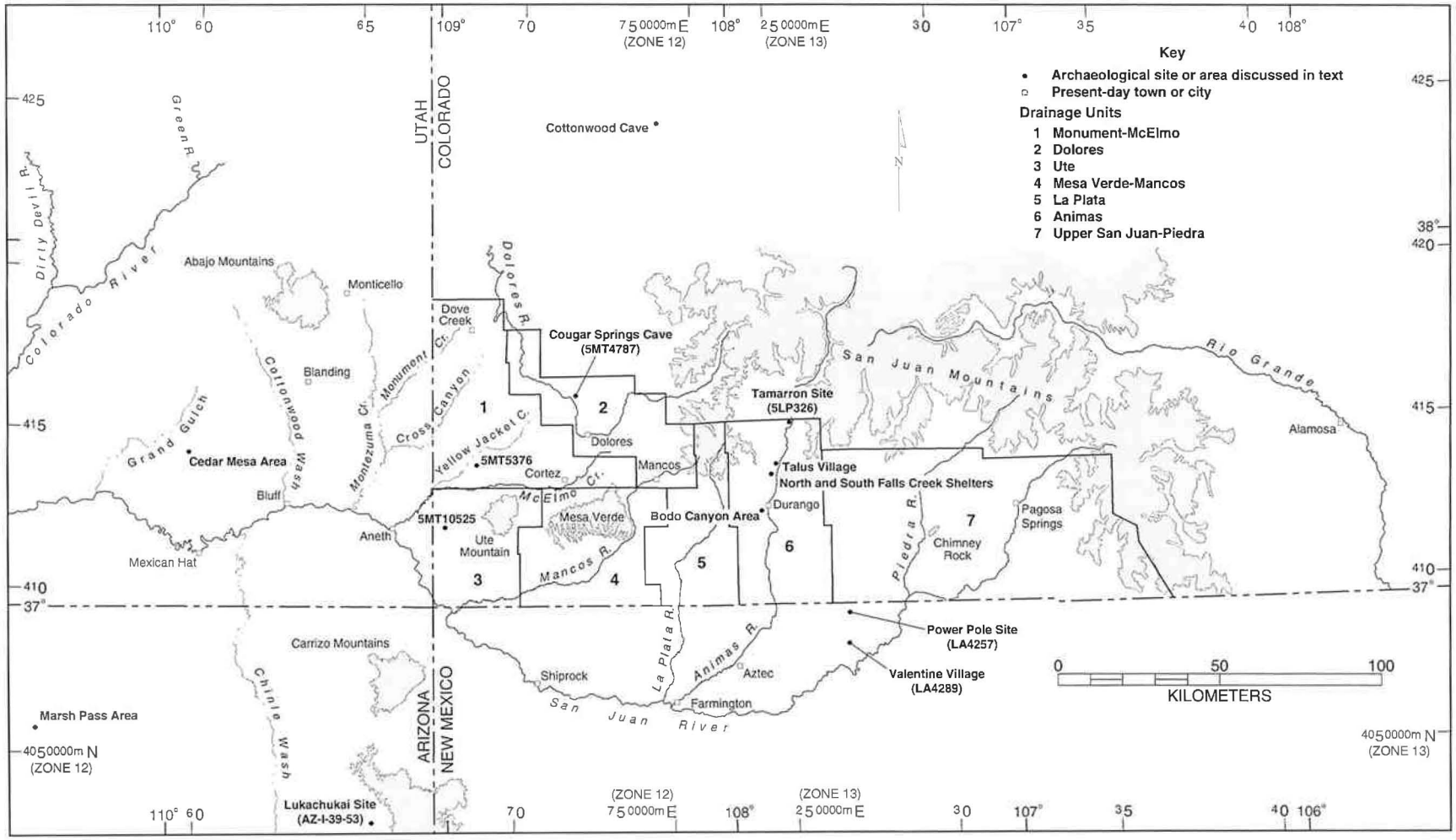

Figure 5-1. Locations of Basketmaker II sites and areas discussed in the text. (Reprinted with permission of Crow Canyon Archaeological Center.)

The oval to circular houses encountered in these sites were pithouses only in the sense that terraces had to be excavated into the slopes so their floors could be level (Figure 5-2). Because the "fronts" of the houses are missing due to erosion, it could not be determined whether there were antechambers or crawlway entrances, but it seems unlikely that such features were ever present, given site topography. Based on evidence from the position of charred timbers and the preserved impressions of timbers, the house walls were built of pieces of wood set in mud, "...a sort of masonry in which timbers were used in place of stones" (Morris and Burgh 1954:50). The first course of timbers was set in a shallow trough at the edge of the house floor. Only one house at Talus Village had evidence of how the roof had been constructed. Here "...it would appear that the roof had been cribbed after the basic plan used more formally in kiva roofs in much later times" (Morris and Burgh 1954:50). Floor features were numerous and consisted of heating pits and a variety of storage features, including jar-shaped subfloor cists, and slab-lined cists, some with above-floor beehive-shaped mud domes (Morris and Burgh 1954:51). Most of the storage at the site seems to have been in features located inside houses. The heating pits were called this because their sides lacked evidence of burning. Although ash and charcoal admixed with sand were found in some of them, Morris and Burgh (1954:51) argue that they were used as receptacles for hot stones that had been heated in fires built outside the house.

Some of the other notable characteristics of the archaeological materials from the three sites (Morris and Burgh 1954:75-78) include:

- Expanding-stem, corner-notched dart points (Figure 5-3) that contrast with the side-notched "San Juan dart points" of the Marsh Pass Basketmaker II sites; Matson (1991) sees the latter as similar to San Pedro Cochise types.
- "Horseshoe" shaped metates, with deep grinding basins, often open at one end.
- One-hand and two-hand manos made of river cobbles.
- Abundant cores, choppers, and hammerstones.
- Expanding-stem drills and "spindle" drills.
- Tubular stone pipes.
- Remains of maize and squash, but no beans.
- Sandals that are variously cross-woven of yucca leaf strips, plaited of rush stems, and made of leather. The twined, decorated sandals made of fine cordage that are common in western Basketmaker II contexts do not appear in the Durango assemblages.
- Close-coiled basketry with half-rod-and-bundle foundation, stacked, with uninterlocked stitches. This technology is shared with the Late Archaic of Cowboy Cave in the central and northern Colorado Plateau (Matson 1991:275) and is the dominant type in Fremont contexts (Adovasio 1980:37). This technology contrasts with the two-rod-and-bundle interlocked stitch construction that is common in western Basketmaker II and later Anasazi contexts (Matson 1991:274-275).

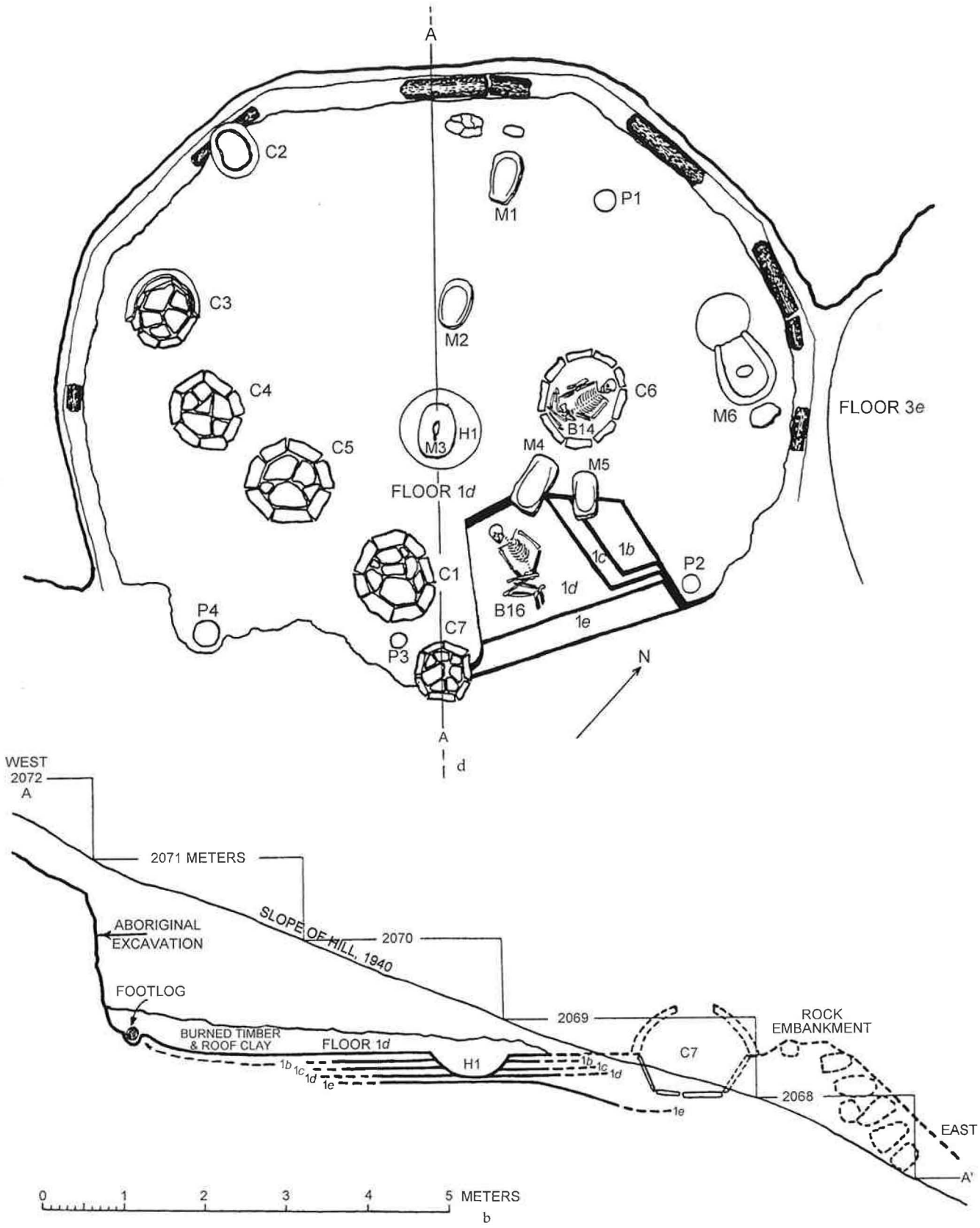

Figure 5-2. Plan and section of Area 1, Talus Village, showing house floors (from Morris and Burgh 1954:Figure 5). (Reprinted with permission of Carnegie Institution.)

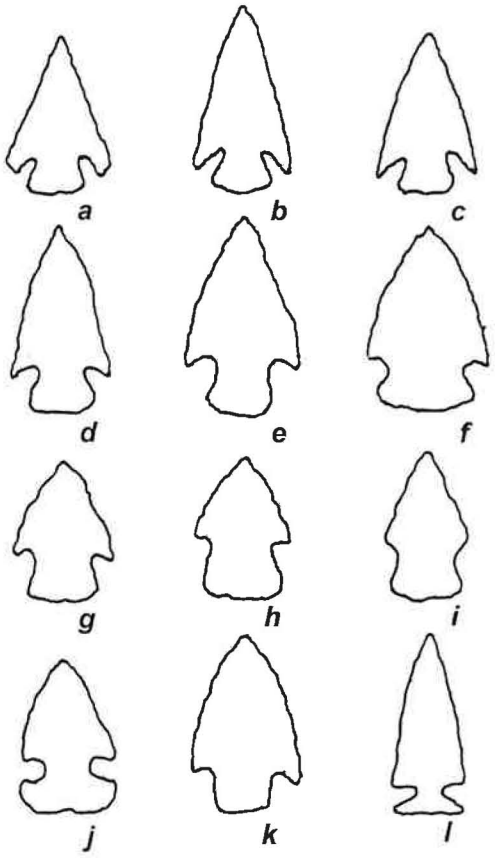

Figure 5-3. Outlines of principal forms of notched and stemmed projectile points and knives from Durango-area sites (a-k). Outline of typical western Basketmaker II dart point for comparison (l). (from Morris and Burgh 1954:Figure 29) (Reprinted with permission of Carnegie Institution.)

- Notched artiodactyl scapulae and ribs. Morris and Burgh (1954:61-62) did some experiments that suggested that the distinctive wear that produced the observed notching could have been produced by using the scapulae and ribs to scrape the tissue from pounded yucca leaves in order to clean the fiber, which could then be used to make cordage.

- Simple pictographs depicting birds, humans, animals, possible "masks," and geometric motifs (Daniels 1954). These contrast stylistically with the "San Juan Anthropomorphic" style pictographs (Schaafsma 1980; Cole 1990) thought to be associated with Basketmaker II contexts in northeastern Arizona and southeastern Utah.

Tamarron Site (5LP326)

This site is located in the Animas River valley approximately 24 km north of Durango, at an elevation of 2355 m. It was excavated in 1977 by archaeologists from the Colorado Department of Highways in conjunction with widening of U.S. Highway 550, and was reported by Reed and Kainer (1978). A partial saucer-shaped house floor with interior jar-shaped and slab-lined storage pits was excavated. Portions of plaster molding at the edge of the floor resembled a similar characteristic of the Basketmaker II houses excavated by Morris and Burgh. Artifactual similarities to the Durango-area sites included horseshoe-shaped metates and both one-hand and two-hand cobble manos. A flotation analysis of samples taken from features yielded no maize or squash remains (Bell 1978), but a number of examples of nondomesticated, potentially economic plants were recovered, including *Amaranthus* sp., *Chenopodium* sp., *Helianthus* sp., *Polygonum* sp., *Trifolium* sp., and *Opuntia* sp. (Bell 1978:61). Several grains of *Zea* (maize) pollen were found in samples from a cist and a burial (Short 1978). Since maize is not wind pollinated, it is likely that these pollen occurrences reflect human introduction of maize into the site. Given the high elevation, it seems unlikely that it was grown close to the site, however. Short (1978) notes that *Zea* pollen is much more widespread in samples from late Basketmaker sites located south of Durango, at elevations where maize could have been grown (see also Short 1980).

Although no chronometric dates were obtained at the Tamarron site, Reed and Kainer (1978) argue that it is close in age to Talus Village, on the basis of similarities in house construction and artifact assemblage, and the absence of pottery. One of the striking differences between Tamarron and Talus Village, however, is that at the former site, small corner-notched points that Reed and Kainer (1978) interpret as probable arrow points were present and dart points were absent. The authors suggest that this may indicate that Tamarron is slightly later than Talus Village, and estimate a date of A.D. 250 to 500 (Reed and Kainer 1978:45). The introduction of the bow and arrow to the Four Corners area has traditionally been thought to have occurred in the Basketmaker III period; if Reed and Kainer's dating estimate is correct, it would indicate that the introduction occurred slightly earlier.

More recently, Geib and Bungart (1989; also see Geib 1990) have reported Rose Spring corner-notched arrow points from nonceramic "proto-Fremont" sites in southeastern Utah dating as early as A.D. 100. In response to Geib and Bungart's article, Reed (1990) discusses the probable arrow points from the Tamarron site and notes that they resemble the Rose Spring corner-notched type. Reed (1990:140) also mentions similar points recovered from a nonceramic, nonarchitectural site (5DL896) in Dolores County, associated with radiocarbon dates having a calendar-calibrated range A.D. 233 to 394 at one standard deviation and A.D. 130 to 430 at two standard deviations. The context is reported more fully in Reed and McDonald (1988).

Bodo Canyon Sites

In 1985 and 1986, CASA excavated portions of several likely Basketmaker II and Late Archaic sites as part of a data recovery plan to mitigate the effects of disposal of uranium mill tailings in Bodo Canyon, located just south of Durango (Fuller 1988a). Several of these sites had later components as well. The sites were located at elevations between about 2135 and 2200 m.

The largest Basketmaker II site was 5LP478A (Fuller 1988a:41-75). Fuller's (1988a:350) summary of the excavation results is as follows:

> ...this multicomponent site contained a large Basketmaker II component consisting of up to four shallow, dish-shaped houses. Radiocarbon dates indicate that the site was occupied between the A.D. 100s and 400s, but the contemporaneity of the individual structures cannot be determined. Structures 1, 2, and 3 contained cylindrical or bell–shaped storage features common to this period. Subsistence data reflect a mixed horticultural and hunting-and-gathering strategy. Corn pollen and macrofossils were found in numerous proveniences. Few artifacts were found within definite Basketmaker II contexts, but those that were resembled assemblages recovered from Falls Creek (Morris and Burgh 1954) and the Navajo Reservoir District (Eddy 1961).

Fuller reports that the round to oval, basin-shaped house floors ranged in diameter from 5 to 8 m. Concentrations of cracked igneous cobbles and lithic artifacts were found immediately south and southeast of the house structures (Fuller 1988a:72-73).

Locus A of site 5LP1104 (Fuller 1988a:283-304) yielded evidence of a Basketmaker II pithouse and associated midden. The pithouse was a shallow, more-or-less oval basin, approximately 5 m in diameter. A series of postholes defined the perimeter of the floor, and a thin layer of probable burned roof fall, including charcoal and burned adobe fragments, lay on the floor. A deep storage cist and two superimposed hearths were associated with the floor. The midden lay southeast of the pit structure and included a definite cultural deposit up to 30 cm thick. Fuller (1988a:304) estimates midden volume at over 75 m^3. Radiocarbon dates from charcoal thought to represent burned roofing or posts were reported as A.D. 280 ± 80 and A.D. 270 ± 80 (Fuller 1988a:304); it is not clear whether these dates represent calibrations to the calendar or are just a reporting of radiocarbon years in A.D–B.C. terms rather than as B.P. dates. A sediment sample from the central hearth area of the pithouse was subjected to flotation analysis, but the only identifiable botanical materials were fragments of pinyon and juniper wood and a single stem of a dicotyledonous plant (Fuller 1988a:303).

Fuller also reports on probable Late Archaic components from two other excavated sites in the Bodo Canyon area—5LP1102 and 5LP1114. Excavations at 5LP1102 (Fuller 1988a:269-281) encountered a possible structure consisting of a shallow, basin-shaped pit 2 or 3 m in diameter that had been partially destroyed by an arroyo. The walls of the pit structure were nearly vertical where preserved. Radiocarbon-derived dates from the fill were 440 ± 70 B.C. and 140 ± 70 B.C. (Fuller 1988a:276). No burned cobble midden was observed. At site 5LP1114 (Fuller 1988a:305-315), interpreted as a Late Archaic campsite, the floor of a small, poorly preserved room was excavated. The diameter of the more-or-less oval, slightly basin-shaped floor ranged from 3.25 to 3.4 m. The only floor features recorded were one definite and two possible postholes on the perimeter. A single radiocarbon-derived date of A.D. 30 ± 60 was obtained from

charcoal in a stratum of burned roof fall overlying the floor (Fuller 1988a:312). There was no evidence of cultigens or of a burned cobble midden at the site.

At the time Fuller wrote, it was still generally accepted that the Basketmaker II period did not date before A.D. 1. It is possible that 5LP1102 and 5LP1114 represent Basketmaker II occupations that are somewhat earlier than the more clearly residential sites 5LP478A and 5LP1104.

Navajo Reservoir Area

Between 1956 and 1963, personnel from the Museum of New Mexico conducted surveys and excavations in the area that was to be flooded by construction of the Navajo Reservoir. Located on the upper San Juan River, Navajo Dam now impounds a reservoir that extends a few kilometers into southern Colorado and that floods lower portions of the Piedra and Pine rivers, tributaries of the Upper San Juan (Eddy 1966:11).

The Los Pinos phase was established to include Basketmaker II materials encountered in the reservoir surveys (Dittert et al. 1961:213-221). According to Eddy (1972:18), 24 Los Pinos phase sites were recorded and five were excavated. Only two—the Power Pole site and Valentine Village—were reported in detail (Eddy 1961); the others are briefly described in the project summary report (Eddy 1966). The densest cluster of Los Pinos sites was located on the Pine River just south of the Colorado-New Mexico border. Eddy (1972:18) thought that the center of distribution of Los Pinos sites was likely to be somewhat farther north, in Colorado, outside the reservoir area. He notes that Fenenga and Wendorf (1956) briefly report on the excavation of a likely Los Pinos site near Ignacio, Colorado (also see Dittert et al. 1961:213). Green (1954:5-7) describes nonceramic sites that appear to have Basketmaker II characteristics in the area "west of Bayfield and continuing through the area beyond Ignacio."

The Power Pole site (LA4257) and Valentine Village (LA4289) are located on Pleistocene terraces above the present-day Pine River flood plain. This type of setting is typical for the Los Pinos sites in the Navajo Reservoir District. The Power Pole site, located approximately 2 km south of the Colorado-New Mexico border, is on a second terrace nearly 50 m above the riverbed and about 1935 m in elevation. Valentine Village, approximately 9 km farther downstream, is on a terrace 18 m above the present flood plain and about 1830 m in elevation.

A number of circular to oval, shallow, basin-shaped house floors were excavated in Los Pinos phase sites (Figure 5-4). Eddy (1972:18-19) describes the distinctive architecture of the houses that were encountered:

> One form has an encircling apron of cobbles laid around its base to serve as a walkway and to buttress the house walls. The other style of house is termed non-ring since the cobble base is missing or much attenuated. Both house styles are generally oval to circular in plan view with a minor variety consisting of two linked rooms—antechamber and main room—in a figure-eight layout. The interior floor surface is dish-shaped, ranging in size between 180 and 1540 square feet [16.7 and 143.1 m^2]. Interior floor features may consist of a centrally placed fire basin, subfloor pits for storage (some with mud-dome superstructures), benches, and upright posts. Commonly the walls were horizontally laid log cribbing termed "log masonry" (Morris and Burgh 1954) or, more rarely, upright leaner posts supported by an interior-post and cross-member frame.

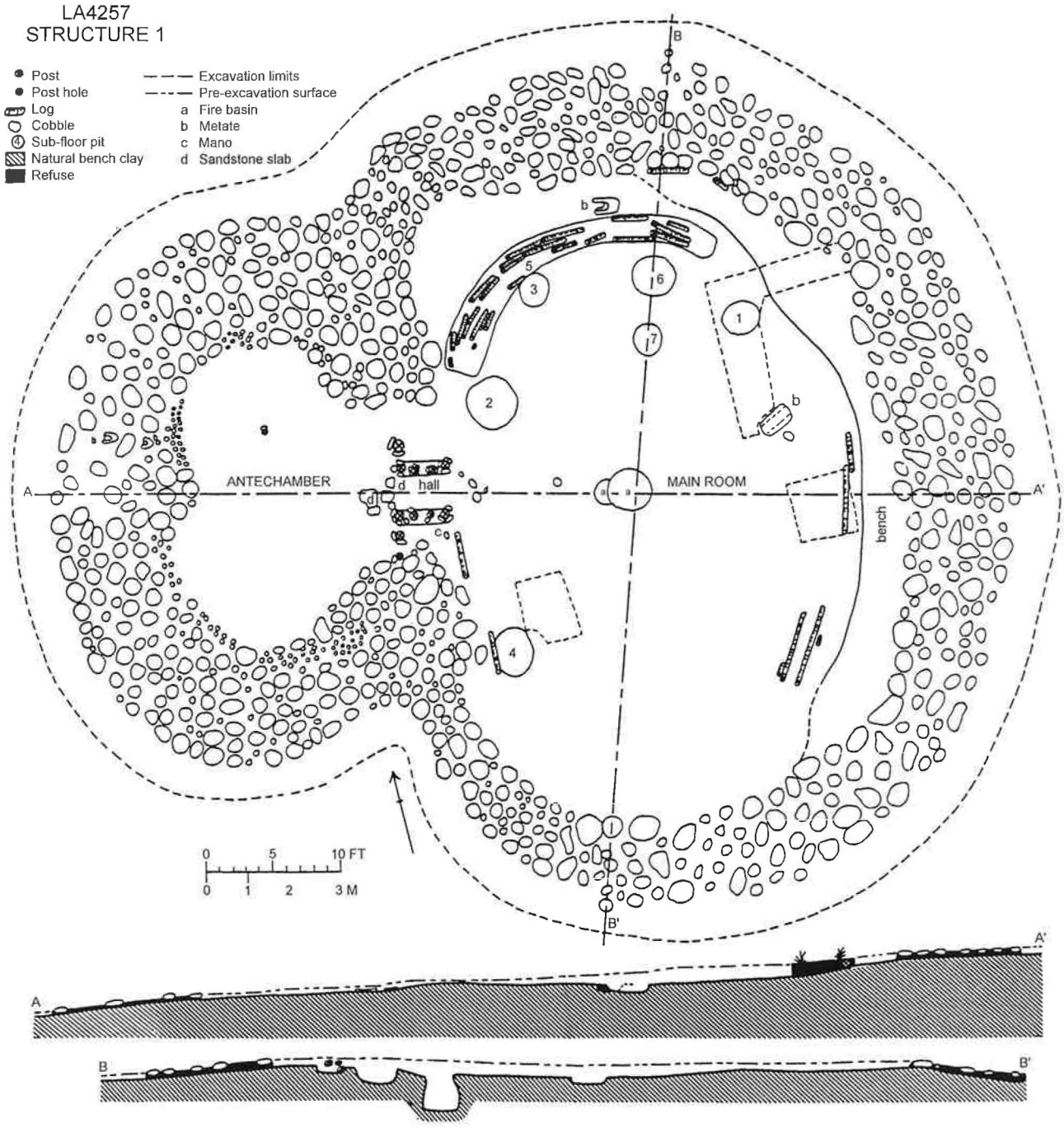

Figure 5-4. Plan and profiles of Structure 1, Power Pole site (LA4257) (Eddy 1961:Figure 9). (Illustration © 1961, Frank W. Eddy. Reprinted with permission of the Museum of New Mexico Press.)

Eddy (1972:19) notes that residences occur singly or in groups. He categorizes as "villages" habitation sites with 4 to 11 houses, but elsewhere notes that it cannot be determined whether all the houses at such "villages" were in use contemporaneously. He describes the layout of Los Pinos habitation sites as follows: "The houses are arranged in an open, random fashion on Pleistocene benches overlooking the mainstream drainages. Between the houses are found sheets of black refuse, outdoor work areas, fire hearths, deep straight-sided storage pits, deep undercut pit ovens, and an occasional cairn of cobbles. Upslope from village site LA4269, two large pit clusters were used for steam baking and storage" (Eddy 1972:19).

Structure 3 at Valentine Village lacks an antechamber, and its oval floor is approximately 11.5 x 13 m. Floor features include a central hearth and a number of large storage pits. Located on a low ridge, it is "situated to command a view of the entire bench" (Eddy 1961:32). This structure appears likely to have played a role in community organization, perhaps as a locus for ritual activities conducted by individuals from multiple households.

Eddy (1972) assigned the Los Pinos phase a date range of A.D. 1-400, based on radiocarbon ages from the Power Pole site and Valentine Village, and on the general similarity of Los Pinos material culture with that from the Durango rockshelters and Talus Village. Three radiocarbon ages from the Power Pole site (Eddy 1961: 106) were 1830 ± 150, 1740 ± 150 and 1690 ± 150 (all B.P., uncalibrated). Two ages from Valentine Village (Eddy 1961:103) were 1640 ± 90 and 1420 ± 80 B.P. Berry (1982:50) notes that this last age is the only one of the five that is not based on a sample of structural wood, but appears to have been a composite sample from pit structure fill. Like Eddy, he questions whether it applies to the Los Pinos context.

Small quantities of brown ware pottery are reported by Eddy (1961, 1966) from Los Pinos contexts. He argues that Los Pinos Brown appears late in the phase of the same name, and that its rare and discontinuous distribution indicates that "this may represent the first appearance of true, fired pottery along this section of the San Juan River" (Eddy 1966:384).

Eddy (1966, 1972) also recognizes the Sambrito phase, which he dates from A.D. 400 to 700. Five of the seven Sambrito sites that were identified (from excavations, not from survey) were from the San Juan River portion of the Navajo Reservoir District, rather than from the Pine River area. Sites of this phase have pithouses which, though shallow, are deeper than the Los Pinos houses, which are essentially surface structures. They also generally lack the surrounding cobble ring found at a number of the Los Pinos sites, and most Sambrito houses appear to have been constructed with interior post-and-beam frameworks and exterior leaner poles, rather than with "log masonry." Several houses of the latter type do occur, however, which Eddy (1972:25) interprets as evidence of both cultural lag and continuity between Los Pinos and Sambrito.

Brown ware pottery is more common at Sambrito phase sites, and "nearly every Sambrito Phase structure contained a handful of Sambrito Brown potsherds" (Eddy 1966:480). This pottery contrasts with Los Pinos Brown in having a different surface finish, somewhat different vessel forms, and smaller and more uniform temper grains (Eddy 1966:384). Eddy (1966:478-484) suggests that the increased use of brown pottery, plus the presence of deeper pithouses and of large houses with ramp entries may indicate that influence from the Mogollon tradition, which began in late Los Pinos times, intensified in the Sambrito phase.

Berry (1982:48-50) questions the existence of the Sambrito phase and points out that three of the six radiocarbon determinations from presumed Sambrito contexts yield dates as early

or earlier than the Los Pinos dates, and that one Sambrito date probably is from a Piedra phase context. He suggests that all or some of the contexts assigned to Sambrito by Eddy may in fact be referable to the Los Pinos phase. Matson (1991:56) suggests that Sambrito may be a spatial variant of Los Pinos, i.e., that the two pit structure styles are contemporaneous. This seems unlikely, given the short distance between the two clusters, and the number of differences between the two complexes. It is possible, of course, that some of the sites Eddy assigned to the Sambrito phase may also have had some occupation in the Los Pinos phase.

During a drawdown of the Navajo Reservoir in 1987, Hammack (1992b) did additional work at the Oven site, one of Eddy's Sambrito phase components. She obtained tree-ring dates and other evidence that lend support to Eddy's original interpretation. Wilson and Blinman (1994:204) also accept the validity of the Sambrito phase. On the basis of a reexamination of sherds from the Navajo Reservoir Project, Wilson and Blinman (1994:202) suggest that the distinction between Los Pinos Brown and Sambrito Brown be dropped, and that these types be combined into a new type, Sambrito Utility.

Cougar Springs Cave (5MT4797)

This site is in the Dolores drainage unit, in a "small rockshelter located on the northwest-facing slope of Dry Canyon, approximately 650 m from where the canyon joins the Dolores River" (Gross 1988). It was excavated in 1982 as part of the DAP (see Breternitz et al. 1986), and is the only Basketmaker II site that was recognized in the project area (Gross 1988:271). Four radiocarbon ages were obtained on charcoal: 1400 ± 60 B.P., 910 ± 70 B.P., 1785 ± 60 B.P., and 1490 ± 60 B.P. The last two were considered most reliable, because they were collected from clear cultural contexts where the possibility of mixture with charcoal from wildfires was minimized (Gross 1988:296). Seven obsidian hydration dates were also obtained, with variable results. If the most obvious outlier is discarded, the remaining six dates average 1408 B.P. Projectile points from the site are corner-notched, and resemble those from the Durango-area Basketmaker II sites more than those from Cedar Mesa or northeastern Arizona.

Two concentrations of flaked lithic debitage, with accompanying hammerstones and cores, were noted. The area between the two concentrations yielded quantities of bone and utilized flakes. Two burned pits were also encountered, each with a nearby metate and manos. Economic plant remains recovered from sediment samples included charred maize (small numbers of kernels, cob fragments, cupules, and inflorescences), and charred *Amaranthus* and *Chenopodium* seeds.

Gross interprets the activities represented at the site as follows:

> The major activity represented in the shelter is the reduction of one specific type of lithic raw material. This material, a white to buff quartzite from the Burro Canyon Formation or Dakota Sandstone, was probably collected at an outcrop located in the vicinity of the shelter. The material appears to have been transported to the shelter in the form of rough, bifacially worked blanks, which were further reduced to a thin biface stage at the site. While camping in the shelter, the inhabitants appear to have fed themselves primarily through a combination of expedient hunting and plant gathering. Charred corn was recovered from the site in small quantities and was probably transported to the site from a base camp. [Gross 1988:271]

Site 5MT10525

This site was investigated in 1992 and 1993 as part of the Ute Mountain Ute Irrigated Lands Archaeological Project, carried out by Soils Systems Inc. (Billman et al. 1997:3.186-3.265). The site "consisted of two artifact concentrations surrounded by a diffuse scatter of artifacts" (Billman et al. 1997:3.186). More than 16,000 artifacts were recovered as a result of various investigative techniques, which included surface collection, mechanical stripping, and excavation. Excavations in one of the artifact concentrations revealed "...a dense subsurface deposit of debitage and stone tools associated with a pit structure and all six of the extramural features" (Billman et al. 1997:3.261). The pit structure was circular and very shallow, with a central basin-shaped hearth, a possible deflector slab on the southeastern perimeter of the hearth, and several internal, basin-shaped and bell-shaped pits (Figure 5-5). It was approximately 4.5 m x 4.2 m in diameter (Billman et al. 1997:3.212). Numerous postholes were found, as well as some carbonized remains of the superstructure, which had burned. Billman et al. (1997:3.217) inferred that the roof of the structure "was supported by 5 primary posts...located around the hearth and 15 smaller secondary posts...along the interior wall of the structure." They also report data from flotation samples indicating that "...the roof was constructed from brush and juniper posts. The walls of the structure were probably also post and brush construction. No adobe or masonry construction material was found in the fill" (Billman et al. 1997:3.218).

Two radiocarbon samples from the pit structure were dated by Beta Analytic, Inc. One sample was a small fragment of "ring-porous shrub" from the hearth; it dated "between 390 and 75 B.C. (calibrated, two-sigma)." The other sample consisted of small fragments of juniper charcoal collected from the floor, which "yielded a calibrated two-sigma date of 405 B.C. to 180 B.C." (Billman et al. 1997:3.259). The latter date may reflect the "old-wood" problem (Smiley 1985), but the former seems more likely to be from a relatively short-lived plant that was used as firewood. Hence, this date is more likely to reflect the actual date of use of the structure.

Although some pollen and macrobotanical samples from the excavations were analyzed and a small number of plant remains identified, these did not include evidence of cultigens. The artifact assemblage consisted primarily of flaked lithic tools and debitage, but also included a two-hand mano, a pestle, and two basin metates, the latter from the floor of the pit structure. The projectile points at the site included both side- and corner-notched forms; the illustrations indicate that side-notched forms are more common, with at least one "western San Juan dart" form (Morris and Burgh 1954:Figure 29). Although the projectile point assemblage is small, it appears generally different from those found at late Basketmaker II sites in the Durango area and to have some resemblances to assemblages from Cedar Mesa in southeastern Utah and the Marsh Pass area in northeastern Arizona. The pit structure found at this site clearly differs from those found farther east in the Durango and Navajo Reservoir areas, although these are probably several hundred years younger.

Site 5MT5376

This site was excavated by CASA in 1989 as part of archaeological studies done in advance of the construction of the Sand Canyon CO_2 facility complex north of McElmo Canyon in Montezuma County (Hammack 1991; Hammack and Walkenhorst 1991). Site 5MT5376 was found to be "a Basketmaker II habitation with evidence of later Anasazi use of the area" (Hammack and Walkenhorst 1991:28). The Basketmaker II component included a well-defined

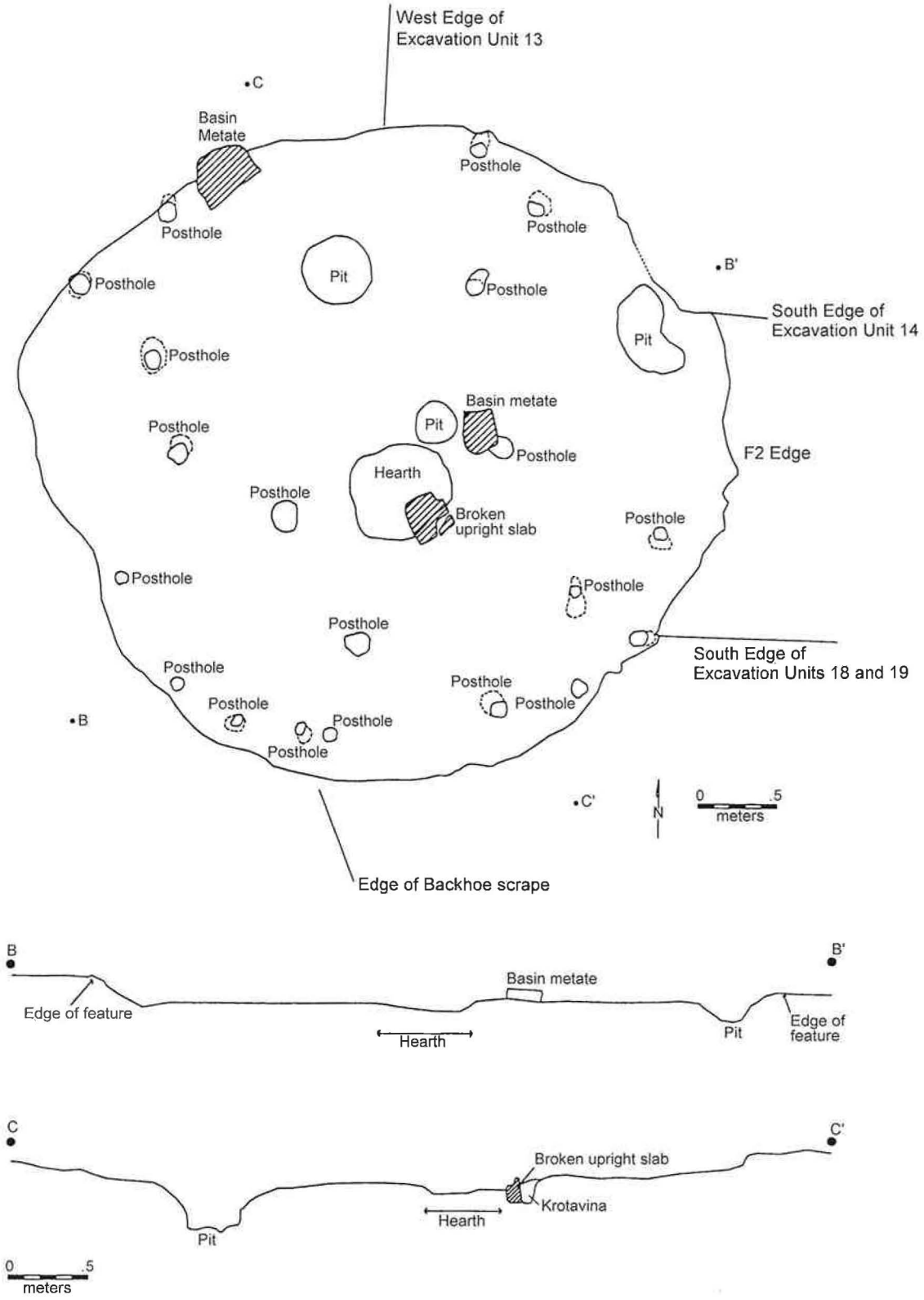

Figure 5-5. Plan and profiles of structure (Feature 2) at site 5MT10525 (after Billman et al. 1997:Figures 3.44 and 3.45).

circular pit structure, a smaller probable ramada structure with a hearth, and several extramural pit features.

The pit structure (Structure 1) was a shallow, basin-shaped depression approximately 4.5 x 4.7 m in diameter with a central hearth, sandstone deflector, and pit. The perimeter of the structure was well defined. It had partially burned. Hammack and Walkenhorst (1991:33) describe the structure as follows: "The superstructure appears to have been supported by a four-post system. Ten additional posts, set at an angle, provided additional support. A stringer trench is also present along the western edge of the floor. There is no direct evidence of a superstructure and [it] is hypothesized that it was composed primarily of brush and/or hides covering a framework of posts....Entry into the structure may have been through a short ramp entry...in the south wall. This is the only wall segment where no stringer trench or wall height is present." The "stringer trench" looks superficially like the shallow floor perimeter trenches associated with the "log masonry" structures of the Durango and Navajo Reservoir areas. No postholes were found in the trench; instead, the additional support posts were set around the periphery of the floor just inside the stringer trench.

A slab metate was found on the floor of the structure, and several other fragments of ground stone were encountered at the site, but no manos or mano fragments were found. No evidence of cultigens was found in the several pollen and flotation samples that were analyzed.

Six charcoal samples from Structure 1 were submitted for dating. Hammack and Walkenhorst (1991:40) note that the calendar-year calibration of these dates suggest that there are two date clusters, and that "the oldest set of dates...range between 360 and 410 B.C., while the more recent set...ranges between 80 and 140 B.C." They suggest that if "old wood" was used in construction, the actual date of Structure 1 may have been between 100 B.C. and A.D. 100 (Hammack and Walkenhorst 1991:40).

In their conclusions, Hammack and Walkenhorst (1991) note the similarities of the structures at 5MT5376 to those at sites in the Glen Canyon (Sharrock et al. 1963), Cedar Mesa (Berry 1982), and Moab (Richens and Talbot 1989) areas of southeastern Utah, as well as Lolomai phase sites on Black Mesa (Olszewski 1983). Several side- and corner-notched projectile points are reported, including one classic "western San Juan dart" form (Elstien 1991:105). Hammack and Walkenhorst (1991:50) remark on the similarities between the stone tool kit at 5MT5376 and those from Lolomai sites on Black Mesa, including the dominant use of flaked siltstone in both assemblages. They also note that certain of the projectile points from 5MT5376 resemble forms recovered from Durango Basketmaker II sites.

Recent Excavations at 5MT13632

At site 5MT13632, located in the Monument-McElmo drainage unit, Woods Canyon Archaeological Consultants has recently excavated a shallow pit structure that appears to be a Basketmaker II period house. The structure is approximately 20 cm deep, has an interior hearth, and is 5.2 m in east-west diameter, and 4.8 m north-south. A dating sample from the structure has yielded a radiocarbon age of 2060 ± 60 B.P., calibrated to 200 B.C.–A.D. 65. There was no surface evidence of the structure; it was discovered during monitoring of a pipeline trench. A report is being prepared on the excavations but was not complete as of late 1999 (personal communication, Linda Honeycutt 1999).

REGIONAL SITE DISTRIBUTION AND POPULATION

Basketmaker II sites are often inconspicuous, and often are difficult to distinguish from earlier Archaic sites on the basis of surface evidence. It is also not uncommon for Basketmaker II sites to be reoccupied by Basketmaker III or Pueblo groups, with the surface expression of the later, ceramic-bearing occupation masking the presence of an earlier nonceramic or largely nonceramic Basketmaker II component. Furthermore, if sites of this period are particularly rare in an area, archaeologists working there may not be tuned to recognizing them. Nonetheless, evidence of a Basketmaker II component has been reported for 150 sites in the Colorado state files (Table 5-1). However, more than 13,000 sites with more than 19,000 components have been recorded in the area, so those identified as Basketmaker II make up less than one percent of the component total.

Given that the Basketmaker II period, as defined here, starts a thousand or more years earlier than was traditionally thought, and given the difficulties of identifying sites of this period from surface evidence, it is quite possible that many Basketmaker II sites encountered on survey have been classified as Archaic. Hence, Table 5-1 also provides data from the Colorado state site files on the distribution of Archaic sites. These assignments are as they are reported in the files, and undoubtedly represent a variety of approaches to dating components. In perhaps the most systematic attempt to distinguish Basketmaker II from Archaic sites that has been undertaken in the study area, Fuller (1988a) rerecorded sites located during earlier surveys in the Bodo Canyon and Ridges Basin area. On the basis of his excavations on the Bodo Canyon project, he developed fairly detailed criteria for recognizing Basketmaker II sites (Fuller 1988a:351). This led to the identification of 20 site components as likely to be Basketmaker II in a survey area of approximately 30 km^2; 14 were possible habitations and 6 were possible nonhabitation sites. None of these sites had been classified as Basketmaker II by the original site recorders. This suggests that a similar approach in other areas where Basketmaker II sites occur would result in a substantial increase in the numbers of these sites recognized on survey.

The distributional pattern of Archaic sites among the drainage units is different enough to suggest that two different populations of sites are represented by the data. The Archaic numerical data suggest a relatively even distribution of sites over the study area, except for the Mesa Verde-Mancos drainage unit, where these sites are quite rare (as are Basketmaker II sites). The largest numerical disparity between Basketmaker II and Archaic is in the Ute drainage unit. Billman (ed. 1997) has recently reported on data recovery studies at aceramic sites from the Ute Mountain Piedmont area in the Ute Mountain Ute Reservation. Of 16 aceramic sites, 7 yielded projectile points. Of these, En Medio points were found on 2 sites and Armijo points on 1 (Berg et al.1997:5.55-5.59). Most of the En Medio style points were found at site 5MT10525, described above. On the basis of the artifacts encountered, as well as the date, the site appears referable to Basketmaker II. This suggests that at least some of the other Ute drainage unit "Archaic" sites might also be Basketmaker II.

Table 5-1. Distribution of Basketmaker II and Archaic Components in the Study Area by Drainage Unit.

	USJ - Piedra	Animas	La Plata	M.V. - Mancos	Ute	Monu.- McElmo	Dolores
BMII Habitations	12	20	0	1	0	20	2
BMII Nonhabitations	8	38	9	1	2	27	10
BMII Totals	20	58	9	2	2	47	12
% of Sites in Drainage Unit	1.7	10.2	2.5	0.05	0.2	1.0	0.8
Archaic Sites	47	51	31	8	137	80	59
% of Sites in Drainage Unit	3.9	9.0	8.8	0.2	12.6	1.7	3.9

The observations made in the previous paragraph indicate that intensive surface collection or testing may be needed in the future to separate Basketmaker II period sites from other aceramic sites. Some of the existing inventory reports may also contain information that would enable this kind of discrimination to be made. Although the site file data undoubtedly underestimate the actual occurrence of Basketmaker II sites in the study area, the search for distributional patterning in the state site file data must at this point depend only on the sites that have been assigned to Basketmaker II (see Table 5-1). It is suspected that the majority of the sites recorded as Basketmaker II reflect the late part of the period (A.D. 1-500), which probably had more and larger habitation sites than did early Basketmaker II. The latter would be more likely to be missed, or classed as Archaic or "unknown."

If the late part of the Basketmaker II period lasted 300 to 500 years, it seems clear that researchers are dealing with a rather small population at any one time. Even if all 55 Basketmaker II habitation sites represented in the state site files were confined to say, a 300-year period, and each had an unusually long use life of 20 years (e.g., Matson et al. [1988] estimate 5 to 10 years for Basketmaker II habitations on Cedar Mesa, Utah), only about 3.7 habitations would have been in use at any one time in the entire study area.

The site file data make clear that there are significant regional differences in the distribution of sites identified as Basketmaker II. Not surprisingly, the Animas drainage unit has by far the most sites, and the highest proportion of total sites, assigned to this period. In addition to early surveys done in the Durango area, there have been relatively recent surveys south of Durango that are associated with energy exploration (Kearns 1992), with the removal of uranium tailings to Bodo Canyon (Fuller 1988a), and with the proposed construction of a reservoir in Ridges Basin, which is adjacent to the Bodo Canyon area (Winter et al. 1986; Smiley 1995a).

Additional fieldwork in Ridges Basin in 1992 and 1993 involved detailed mapping and intensive surface collecting of 42 prehistoric sites (Gregg et al. 1995), including several single- and multiple-component Basketmaker II sites (Smiley 1995a). Smiley (1995a) and Smiley and Gregg (1995) also consider problems associated with using surface evidence to recognize and assess the functions of sites of this period. The intensive surface recording accomplished by Gregg et al. (1995) in Ridges Basin will be extremely useful in calibrating Basketmaker II site signatures if excavations can be carried out at some of these sites.

The relatively small number of Basketmaker II sites identified for the Upper San Juan-Piedra area is somewhat surprising, given that Eddy (1966:472-473) hypothesized that the Los Pinos phase sites in the Navajo Reservoir area are the southern part of a larger distribution of similar sites centered in the Pine River drainage basin in Colorado. On the other hand, the Pine River is in the extreme western part of the Upper San Juan-Piedra drainage unit, close to the border with the Animas drainage unit. It may be that the density of Basketmaker II sites is very low over the majority of the Upper San Juan-Piedra drainage unit.

Kearns (1992) recently summarized the preceramic archaeology of the Upper San Juan River region in both New Mexico and Colorado. His study area covers approximately 16,000 km^2 with somewhat over two-thirds of the area in Colorado, including most or all of the La Plata, Animas, and Upper San Juan-Piedra drainage units as defined for the context study. Using the New Mexico and Colorado state site files and other sources, Kearns identified 498 preceramic components in his Upper San Juan area—232 in New Mexico and 266 in Colorado. About 38 percent of the preceramic sites were characterized as Basketmaker II, with virtually no difference in percentages between Colorado and New Mexico. In addition, 17.7 percent of the Colorado sites were classified as Late Archaic. Kearns' compilation of the site records indicate a slightly higher frequency of Basketmaker II sites in the eastern part of the study area than did the current compilation. Kearns also suggests that in his study area, there are four discrete clusters of Basketmaker II sites that include both habitations and temporary camps. These areas are 1) the lower Los Pinos River and adjacent San Juan in the Navajo Reservoir District, 2) the upper Gobernador Canyon and La Jara Canyon uplands southeast of Navajo Reservoir in New Mexico, 3) the middle La Plata River valley, just south of the Colorado-New Mexico border, and 4) the Animas-La Plata divide, including the Durango and Ridges Basin area (Kearns 1992:26).

Returning to this compilation of the Colorado site file data, the Monument-McElmo drainage unit has the second-highest totals of Basketmaker II sites, although these sites make up only about one percent of the total recorded components in that unit. Reporting a block survey of 26 km^2 west of Cortez in the uplands around the heads of Sand and Goodman Point Canyons, Adler (1992) documents 696 components (from 429 sites), but identifies none as Basketmaker II. In a survey of Lower Sand Canyon, Gleichman and Gleichman (1992) assign 7 of the 55 components identified to a "Basketmaker II-III" category. Three of the 7 were habitation sites, all assignable to Basketmaker III. Farther west in the drainage unit, Fetterman and Honeycutt (1987) report on the survey of 684 sites from Mockingbird Mesa, which lies between Negro and Sandstone canyons. They recognize 834 temporal components, of which 4 are considered Late Archaic or Basketmaker II. Three of these are considered limited activity/campsites, and one, a temporary habitation (Fetterman and Honeycutt 1987:29-35). As noted above, Hammack and Walkenhorst (1991) and Fetterman and Honeycutt (Linda Honeycutt, personal communication 1999) have excavated Basketmaker II house structures in the Monument-McElmo drainage unit.

Even farther west, on the Utah-Colorado border, 372 sites were recorded in a survey of 4,090 acres surrounding four small parcels of land comprising Hovenweep National Monument (Greubel 1991). In the report of this survey, the Basketmaker II period was considered part of the Archaic. Four sites were assigned to the Late Archaic, and three to Late Archaic/Basketmaker II. One of these three was considered a long-term habitation, one a temporary habitation, and one a cave with storage cists (Greubel 1991:72). Potentially, the four Late Archaic sites might also be assignable to Basketmaker II, based on the current "long chronology" for this period. In a tabulation of "Archaic" projectile points from the survey, Greubel (1991:70) notes that 43 percent of the points are large and medium corner-notched styles, and fall into the Basketmaker II portion of the En Medio complex.

Winter (1975, 1976) conducted sampling surveys on Cajon Mesa in both Colorado and Utah. Winter's survey was in part focused on providing an interpretive context for Hovenweep National Monument, but it covered a much larger area than did Greubel's block survey. Winter (1976:284) identified 18 Basketmaker II sites (out of a total of 405 sites [Whitten et al. 1986:24]) during the two seasons of survey. Whitten et al. (1986) also conducted survey and testing on Cajon Mesa in both Colorado and Utah; they report 2 Late Archaic/Basketmaker II and 7 possible Late Archaic/Basketmaker II components out of a total of 206 components from 162 sites (Whitten et al. 1986:36).

Despite their problems, the survey data can be read to indicate that the heaviest Basketmaker II occupation of the study area was in the Animas drainage unit, with a secondary concentration in the western part of the Monument-McElmo and perhaps in the Ute drainage unit, with a virtual absence of occupation in the eastern McElmo drainage and in the Mesa Verde-Mancos drainage unit. If the western Basketmaker II sites in the study area represent the eastern edge of a distribution of Basketmaker II sites that extends into southeastern Utah and northeastern Arizona, it would tend to support Matson's (1991) contention that eastern (Durango-Navajo Reservoir) and western (Grand Gulch-Marsh Pass) Basketmaker II represent different populations and cultural traditions. Data from 5MT10525 in the Ute drainage unit and 5MT5376 in the Monument-McElmo drainage unit tend to support this interpretation. The house structures at 5MT10525 and 5MT5376 differ from houses at the Durango and Navajo Reservoir Basketmaker II sites and show general resemblances to western Basketmaker II houses in southeastern Utah. The projectile points from 5MT10525 and 5MT5376 also differ somewhat from the points from the eastern assemblages and include more forms resembling those from Utah and northeastern Arizona.

In general, the distribution of Basketmaker II sites indicates a low utilization of the fertile upland dry-farming soils in the study area's western drainage units. These areas, especially the Mesa Verde-Mancos and Monument-McElmo units, later supported very large populations, especially in the Pueblo II and III periods. This suggests that variables other than good farming soils were influencing site locations during the Basketmaker II period. Presumably, access to arable soil was a concern, given the evidence for the importance of maize in Basketmaker II subsistence. However, farmlands may have been chosen primarily in locations where there also was good access to a variety of wild plant and animal resources. Given the apparent low population density of the period, this type of settlement pattern may have allowed foraging to be used as a buffer against crop failure. On the other hand, in Chapter 2, Adams rates the foraging potential of the Upper San Juan-Piedra, Animas, and La Plata drainage units as low, and that of the Mesa Verde-Mancos and Monument-McElmo units as high. It may well be that Basketmaker II settlement patterns were responding to finer-grained variation in resource distribution than is

reflected in overall drainage unit characterizations. And given the evidently very low overall population densities, a spotty rather than uniform distribution of settlements is not surprising.

SITE TYPES

Several functional typologies have been proposed for Basketmaker II sites (e.g., Eddy 1972; Fuller 1988a; Matson et al. 1988; Matson 1991; Smiley and Gregg 1995). The one proposed by Matson and colleagues was developed for the Cedar Mesa area, but appears generalizable to other areas of the northern Southwest as well. This is the starting point for the discussions below. The proposed site types clearly apply to late Basketmaker II sites (post–A.D. 1). Whether all of them apply to earlier settlement systems remains an open question.

Habitations

Although Basketmaker II sites generally are not easy to identify as such, habitations generally provide the clearest signature. On Cedar Mesa in southeastern Utah, the criteria listed by Matson et al. (1988) for Basketmaker II sites in general in fact apply most clearly to habitation sites. "Criteria...included absence of ceramics; presence of abundant fire-fractured limestone (thought probably to have been used in cooking); presence of large side- or corner-notched projectile points; relative abundance of one-hand manos; and the presence of shallow pit-structures with long, narrow, slab-lined entryways" (Matson et al. 1988:248). Of these characteristics, the presence of a parallel row of upright entryway slabs is the most diagnostic of the presence of a pithouse. Cedar Mesa pit structures often have the remains of a few slab-lined surface features to the north or northwest, and generally have a discernible trash disposal area south or southeast of the structure. Such areas have relative concentrations of fire-cracked limestone and small fragments of sandstone, as well as flakes, lithic shatter, cores, hammerstones, and occasionally other artifacts. The soil may be ashy if the midden is not too eroded.

Fuller, working in the Bodo Canyon-Ridges Basin area of the Animas drainage unit, suggests a "Basketmaker II signature" that would apply most fully to habitation sites:

> 1. An absence of ceramics.
> 2. A high frequency of cracked igneous cobbles in geologic situations where cobbles do not naturally exist.
> 3. The presence of popcorn-sized burned adobe from burned domestic structures.
> 4. The presence of Basketmaker II-style projectile points: broad, large corner-notched points with prominent tangs.
> 5. Magnetometer data indicating that possible structures were present on aceramic sites...[Fuller 1988a:351].

As noted above, pottery does occur in small quantities on some late Basketmaker II sites, especially in the eastern part of the study area, so the absence of ceramics is not an absolute criterion. As Eddy (1966) and Wilson and Blinman (1994) have shown, however, the pottery that does occur is a distinctive sand-tempered brown ware that differs from the later gray ware of Basketmaker III and later periods.

Most of the archaeologists who have worked with late Basketmaker II sites in the Four Corners area have also made a distinction between sites with single structures and those with multiple structures. If houses have a clear signature (e.g., as in the Cedar Mesa structures with

well-preserved slab entryways, or in Eddy's "cobble ring" houses of the Los Pinos phase) this will often be possible. It is difficult, however, for the investigator to be able to tell whether multiple houses were occupied contemporaneously on the basis of surface evidence. Dohm (1994:257) suggests that contemporaneity of multiple residences is indicated in some of the Cedar Mesa Basketmaker II sites: "Contemporaneity of dwellings...offers a good explanation for the similarity in spatial layout of the pithouses, ancillary features, and artifact scatters, including the similar sizes of the habitation areas, the similar cardinal orientation among features, and the absence of overlap among dwelling areas."

On Cedar Mesa, the late Basketmaker II habitations are dispersed, so that the survey generally found evidence of only one and occasionally two houses per site. Dohm did additional surface mapping and excavations in 1984 and 1991 and has reanalyzed portions of the earlier Cedar Mesa project survey data. She recognizes loosely structured "dwelling clusters" of several houses each, as well as a "neighborhood" that has at least 14 to 20 houses (Dohm 1994:271-272). This neighborhood extends for at least 1.5 km. As is typical in the analysis of the settlement pattern of dispersed communities, the "site" often corresponds to only a part of the local community pattern. Hence, the distinction between "single-habitation" and "multiple-habitation" sites is likely to reflect primarily the degree of dispersion-aggregation in the local community pattern.

In general, the Cedar Mesa habitation sites appear to have been rather briefly occupied. This inference is supported not only by the kinds of arguments made by Dohm, but by the lack of remodeling evidenced in the few structures that have been excavated, and also by the lack of midden buildup at the sites. Typically, uneroded midden deposits are only a few centimeters thick. The pit structures are lightly built, and it seems unlikely that they were in use for any more than 5 to 10 years (Matson et al. 1988:250). The possibility cannot be excluded that some were used for only one or two seasons. On the other hand, many of the house structures from the Durango and Navajo Reservoir areas appear to represent a greater investment of time and materials. Talus Village, the Durango rockshelters, and Valentine Village all have evidence of house remodeling, superimposed structures, and relatively thick midden deposits, indicating continuous or multiple occupations that might span a number of decades.

Eddy (1961, 1966, 1972) recognized that some of the village sites in the Navajo Reservoir District had extra-large structures that may have played a role at the community, rather than the household, level. Identifying sites that have such structures as a separate functional type from inventory-level data would be desirable where surface indications permit it, but this may not be possible in most cases.

Campsites and Limited Activity Sites

Matson et al. (1988) and Matson (1991:73-101) recognize a distinction between habitation sites, campsites and limited activity sites that may be useful in other areas. Habitation sites were found predominantly in the elevation zones and with soil types that were optimal for farming. Campsites and limited activity sites were also found in these areas but also in a much wider range of environments, including areas not at all suitable for agriculture. Campsites and limited activity sites differed in a number of artifactual characteristics, and also in the frequency of features such as slab and ash hearths, slab cists, and presence of limestone and midden debris (Matson 1991:80-81). In general, campsites showed indications of residential activity, but lacked evidence of formal houses. Although limited activity sites were generally small, both in terms of

area and of numbers of surface artifacts, campsites ranged widely in size, and the largest Cedar Mesa sites belonged to this class.

Matson (1991:82) suggests that most Cedar Mesa single-house habitation sites were likely to have been the product of a single episode of habitation, probably lasting less than a dozen years. Campsites, on the other hand, may have been used repeatedly over the entire 200-year length of the late Basketmaker II (Grand Gulch phase) occupation of Cedar Mesa. He suggests that campsites represent short-term residential stays for Indian ricegrass harvesting, pinyon nut collecting, low- elevation sand dune agriculture, and hunting (Matson 1991:89). Many of the limited activity sites, on the other hand, are likely to represent field stations associated with tending fields near habitation sites, although there also are a number of limited activity sites in environmental settings where farming would not have been possible (Matson 1991:88). Since campsites are also common in good agricultural areas, some of these may represent seasonal occupation of an area for farming purposes, with winter house sites located elsewhere on the mesa. In any case, the campsite category does not appear as a separate site type in the later Basketmaker III and Pueblo occupations of Cedar Mesa.

The campsite category is likely to be useful in analyzing Basketmaker II settlement systems in the study area. In his study of preceramic occupations in the Upper San Juan drainage, Kearns (1992) makes a distinction between camps and lithic scatters that parallels Matson's (1991) distinction between campsites and limited activity sites. Kearns' lithic scatters are "characterized by flaked stone artifacts only" while camps are "characterized by flaked stone artifacts and ground stone, fire-cracked rock, or hearth features" (Kearns 1992:34).

Other Site Types

Rockshelters are not a functional site type in and of themselves; habitations, campsites, and limited activity sites may occur in either open or sheltered settings. However, certain kinds of artifacts and features may be better preserved in sheltered sites, and if dry deposits are present, these sites can yield information almost never obtainable from open sites. Consequently, it is useful to recognize shelters as a site type, though the kind of occupation(s) represented there also need to be characterized so the role of particular shelters in particular settlement systems can be assessed.

Rock art, whether isolated or occurring in conjunction with other types of archaeological material, has potential to contribute to an understanding of Basketmaker II culture in the study area. One question of interest is the extent to which the rock art of the eastern part of the study area resembles or differs from that in the better known Basketmaker II panels in southeastern Utah and northeastern Arizona.

Lithic procurement and processing sites comprise a special class of limited activity sites. Although often difficult to date, they have the potential to contribute information about Basketmaker II lithic technological organization and mobility patterns.

SUBSISTENCE, SETTLEMENT, AND MOBILITY PATTERNS

Subsistence and Settlement Patterns

Interpretations of Basketmaker II subsistence and mobility patterns have been diverse, to say the least. At the extremes, Irwin-Williams (1973), Plog (1968), and Bearden (1984) interpret late Basketmaker II populations as foragers who sporadically raised a modest amount of corn, while Matson (1991) argues that at least late Basketmaker II groups were highly dependent on maize. In recent years, the "farming dependent" model for late Basketmaker II appears to be gaining ground on the basis of the evidence. Part of the difficulty of interpretation may be due to the tendency of researchers to treat the Early Agricultural Period in the Four Corners area as a unit, even though it now appears to be as much as 1,500 years long.

In establishing the importance of maize in Basketmaker II diets, most telling has been the analysis of the stable carbon isotope relationships in human bone from various contexts. This technique allows researchers to estimate the proportion of an individual's diet that has been based on plants that utilize a ^{3}C versus a ^{4}C metabolic pathway (if the inidividual has been eating meat, the kinds of plants consumed by the animal will also contribute to the human's isotope profile). Maize and some goosefoots (*Chenopodium*) and pigweeds (*Amaranthus*) utilize a ^{4}C pathway, although most flowering trees and shrubs, and most temperate zone grasses, follow a ^{3}C pathway (Chisholm and Matson 1994:241-242). A relatively low delta ^{13}C value in human bone can be argued to indicate a substantial dependence on maize.

Matson and Chisholm (1991) and Chisholm and Matson (1994) analyzed carbon isotopes from human bone from several individuals from Pueblo II-Pueblo III, late Basketmaker II, and Archaic contexts. They show that delta ^{13}C values for several late Basketmaker II individuals from the Cedar Mesa-Grand Gulch area of southeastern Utah are much closer to those for later Pueblo II and III individuals than they are to an individual from a clear-cut early Archaic context. Chisholm and Matson (1994: 248) argue that these data indicate a ^{4}C plant intake of about "83 to 87 percent for the Pueblo II/III individuals, of about 79 to 84 percent for the Grand Gulch Basketmaker II individuals, and of between 60 to 80 percent for the Old Man Cave individuals." The individuals from Old Man Cave, located on the eastern margin of Cedar Mesa, are from late Basketmaker II contexts.

Aasen's (1984) analysis of 28 late Basketmaker II coprolites from the Turkey Pen site in Grand Gulch also showed that maize was by far the most common economic macrofossil in these samples, in terms both of frequency of occurrence in samples (ubiquity) and weight. The coprolites were screened from bulk samples of a dry midden column; four radiocarbon ages from the column ranged from 1490 ± 75 to 2065 ± B.P. Lepofsky (1986) also analyzed macrobotanical remains from the same set of 7 midden samples and the results were similar to Aasen's. Maize was present in all 7 samples and was very dominant by weight. Pinyon and cucurbits were also abundant by weight. *Cheno-Am* and *Oryzopsis* (ricegrass) seeds were present in all samples, and *Oryzopsis* contributed substantial weights in several, despite the light weight of the seeds. *Yucca*, *Helianthus* (sunflower), and *Mentzelia* were present in most of the samples.

Matson (1991) argues that the earliest Basketmaker II settlements in the Four Corners area should be associated with flood plain farming, but that by late Basketmaker II, varieties of maize had been developed that permitted upland dry-farming as well. The Cedar Mesa settlement pattern data support the inference of a primary dependence on upland dry-farming for late

Basketmaker II (Grand Gulch phase) groups in that area (Matson et al. 1988; Matson 1991). Habitation sites of the Grand Gulch phase occupy the soils and elevations most favorable to farming, and their locations in association with the deepest upland soils do not contrast with later Basketmaker III and late Pueblo II-Pueblo III occupations of the area. The Grand Gulch phase dates to about A.D. 200-400 (Matson et al. 1988) and is thus more or less contemporaneous with sites of the Los Pinos phase in the Navajo Reservoir and Durango areas. Late Basketmaker II habitation sites in the Durango, Navajo Reservoir, and Dolores areas appear to be oriented to flood plain settings in valleys with perennial streams, although upland farming might also be possible. The Bodo-Ridges Basin sites appear to be located in an upland farming area with good southern and eastern exposures.

Hard et al. (1996) cast some doubt on Matson's contention that Late Basketmaker II groups were approximately as dependent on maize as were later Puebloans.. They use mano surface area and the proportion of manos that are of "two-hand" length to estimate dependence on maize. Using this approach, they estimate that maize dependency increased fairly substantially from Basketmaker II to Pueblo times in both the Black Mesa and Cedar Mesa areas. They also note, however, that "in the Black Mesa and Cedar Mesa regions, maize had clearly become important by Basketmaker II times" (Hard et al. 1996:301).

On balance, however, the evidence seems increasingly good that late Basketmaker II groups in the northern part of the Four Corners area depended heavily on maize. Squash was also grown, and a number of wild foods were regularly obtained, including pinyon nuts, grass seeds, and a seeds from a variety of weedy annuals. Deer, cottontail rabbit, jack rabbit, and where available, bighorn sheep were the principal animal foods. The Merriam's turkey was evidently available to late Basketmaker II groups, but was probably not domesticated. Although domesticated beans are known from the central and southern portions of the American Southwest by 2000-2400 B.P. (Mabry 1998a:765), they have not been reported from Basketmaker II contexts in the northern Four Corners area. Beans do not preserve well in archaeological contexts, so a complete absence is hard to prove. However, remains of a variety of well-preserved cultigens and wild plants have been recovered from numerous Basketmaker II contexts, including both dry shelters and open sites, and no good associations of beans have been found. It is very probable that they were not part of the diet. In general, projectile points comprise a larger fraction of the lithic assemblage in Basketmaker II contexts than in later sites. It seems likely that hunting was a more important part of the subsistence pattern at this time, and that the protein contributed by beans would not have been as valuable as it probably was later.

The subsistence pattern of early Basketmaker II (ca. 1000 B.C. to A.D. 1) is much less clear, although it certainly includes the cultivation of maize in a number of locations in the Four Corners area. It is a matter of considerable theoretical interest whether the early Basketmaker populations of this region used maize as a minor backup food source, or whether the transition to heavy maize dependence was rapid, either due to the immigration of already-committed agriculturalists, or to resident foragers recognizing that maize had a positive cost-benefit ratio relative to wild foods (see discussions in Fuller [1988a] and Matson [1991]). Evidence that can be interpreted as indicating early sedentism in association with farming comes from the the Salina Springs site near Chinle in northeastern Arizona. Here, Gilpin (1994) documented a large early Basketmaker II midden with maize that was associated with a relatively deep pithouse that had evidence of multiple occupations or remodeling. AMS dates on three maize samples dated from 2140 to 2630 B.P.

The lack of a south-to-north chronological gradient for the appearance of maize in the desert Southwest and in the southern Four Corners area suggests a very rapid spread, either by population movement or diffusion, or both. On the other hand, late Basketmaker II settlements throughout the Four Corners area seem more numerous and more sedentary than do early Basketmaker II settlements, which suggests that maize became more important through time. However, Gilpin's 1994 Chinle Valley pithouse sites appear to indicate an equivalent level of sedentism in some parts of the area by early Basketmaker II times.

Matson (1991) proposes an "evolutionary model" of maize adoption on the Colorado Plateau. He argues that maize was adapted to flood water farming in the desert Southwest, and that when it was introduced to the Plateau, it was initially confined to well-watered flood plains. Only after a period of selection and adaptation could it be used in dry-farming settings such as Cedar Mesa; hence, Basketmaker II populations did not expand into the dry uplands until the early years A.D. Settlement data from the study area are not inconsistent with this hypothesis. They suggest that late Basketmaker II maize farmers were successful in both flood plain and upland settings, and at both relatively low and warm (Navajo Reservoir) and relatively high and cold (Durango and Dolores areas) elevations.

The bigger picture of late Basketmaker II settlement patterns suggests, however, a curious avoidance of the best dry-farming areas in the Mesa Verde-Mancos and Monument-McElmo drainage units, which supported the region's largest populations in the Basketmaker III through Pueblo III periods. Given the probably low levels of Basketmaker II population, it is not surprising that many portions of the study area were not inhabited at this time.

It is also probable that Late Basketmaker II groups relied less on secure storage of maize and more on foraging as insurance against crop failure, as compared with later periods. The areas that were inhabited in the early years A.D. may be better suited to this kind of adaptation than are the ecologically less diverse areas that supported large populations later. That is, western Basketmaker II groups seem to be occupying areas on the edge of the good dry-farming zone that have adequate arable soils but that also have good access to the ecologically diverse canyonlands sector of the Colorado Plateau. The eastern groups of the upper San Juan drainage basin also have access to both upland and flood plain soils that are adequate for farming, in locations close to the ecologically diverse Rocky Mountains. Most of the eastern areas that were occupied in late Basketmaker II times also have perennial streams that would have supported riparian flora and fauna. These are mere speculations at this point, however.

Mobility Patterns

Mabry (1998a:764) recently addressed the question of whether Early Agricultural period groups in the Southwest were sedentary, which he defines as applying to settlements where at least part of the population remains at the same location throughout the year. On the basis of a survey of relevant literature, he suggests a number of attributes that are thought to be correlated with sedentism (Mabry 1998a:764-767). None is sufficient as an indicator by itself, but presumably the more that apply to a particular situation, the firmer is the inference of sedentism. Following Rafferty (1985) he lists the following:

1. Substantial structures
2. Rectilinear house shapes
3. Settlement planning

4. Communal and ceremonial structures or spaces
5. High quantities and diversities of artifacts
6. Heavy and nonportable artifacts
7. Pottery
8. Pits, surface bins, or other storage facilities
9. Thick trash mounds or middens
10. Remains of seasonally available plant and animal resources indicative of multiseasonal or year-round occupation

Relying on several other authors, he adds:

11. Presence of both intramural and extramural hearths
12. Large storage volumes
13. High ratios of ground stone milling tools and sherds to projectile points and other selected artifact types
14. Frequent superposition of structures and multiple floors within structures
15. Presence of burials

The Los Pinos phase sites of the Navajo Reservoir area, considered together, score fairly high on this list. Items 1, 4, 6, 8, 9, 11, 14, and 15 would seem to apply. Trait 7 (pottery) is present in some of the sites, and large storage pits (Trait 12) occur fairly regularly. Wilson and Blinman (1994) note that as a result of recent excavations at the Los Pinos phase Oven site, a number of features that had previously been interpreted as roasting ovens now are thought to have been storage pits. It is not clear what the proportions of milling tools and sherds are relative to projectile points (Trait 13). Subjectively, however, this trait is better developed at Los Pinos phase habitation sites than at Archaic sites in the region. The occurrence of burials in and around Los Pinos houses suggests that passing of property and rights from one generation to the next had become important. The occurrence of large structures with suprahousehold functions suggests that institutions had emerged at the level of the community to exercise social control and ensure social reproduction.

Varien (1999b; ed. 1999) recently attempted to deconstruct the concepts of mobility and sedentism as they apply to nonstate horticultural societies. He suggests that there may be different mobility patterns at the household, community, and regional population levels. The usually dispersed communities of the Pueblo II and III periods in the Monument-McElmo drainage unit remained locationally stable for a number of generations, though individual households relocated their residence every one or a few generations within the area controlled by the community. In a study of a number of small late Pueblo II and Pueblo III residential sites, Varien (1999b:96) estimated that households maintained these residences for one to four generations, with a median occupation of two generations. It seems very unlikely that the Los Pinos communities had this level of residential stability, although the chronological control is not adequate to allow for systematic comparisons with Varien's Pueblo II-Pueblo III data.

Farther west, late Basketmaker II communities appear to have a much higher level of residential mobility at the household level, as compared with both the Los Pinos phase and with later Puebloan occupations in the Monument-McElmo uplands. In the Cedar Mesa area of southeastern Utah, Matson et al. (1988) propose that a dispersed Basketmaker II community of a few hundred people occupied an area of about 800 km^2 in the central part of the mesa for a period of perhaps as much as 200 years, but that individual habitation sites were moved every 5 to 10 years, perhaps as part of a pattern of shifting cultivation. Very low investments were made in

housing and other facilities; burials have not been found with houses, nor have community-level structures been identified. Chronological control is insufficient to determine if settlement of the mesa was in fact continuous throughout the 200-year period. In general, the Cedar Mesa evidence suggests more flexible organization, with greater household autonomy, and less development of community-level institutions than is the case in the Los Pinos phase. In general, it seems likely that the Basketmaker II period in the study area and adjacent regions displays multiple patterns of settlement and mobility through both time and space.

DATA NEEDS AND RESEARCH ISSUES

Chronology-building and Historical Problems

All aspects of Basketmaker II research would be enhanced by improved chronologies. Any new excavations in possibly Basketmaker II contexts should provide for collection and dating of multiple tree-ring and/or radiocarbon samples. Particularly important is the dating of a greater variety of site types and of aceramic sites that lack clear cultural diagnostics. This would contribute to constructing better models of Basketmaker II settlement and community patterns.

Excavation of Basketmaker II pit structures has the potential to yield burned structural timbers that could be used to extend the Four Corners area tree-ring chronology back in time. In addition, hearths from such structures could be sampled to extend and refine the regional archaeomagnetic chronology.

A major problem in Basketmaker II research is when maize began to be grown in the study area. Whether or not there is a south-to-north gradient in the introduction of maize in the Four Corners area has significant theoretical implications, as discussed earlier (also see discussions in Fuller [1988a] and Mabry [1998a]). A program of dating individual kernels of maize from existing Basketmaker II museum collections would be very productive. The AMS technique of dating requires very small samples, so that other types of perishable material such as textiles could also be dated with very little sacrifice.

Matson (1991) has proposed that early Basketmaker II settlements are most likely to be associated with flood plain or runoff farming, but late Basketmaker II farmers were able to exploit a greater variety of environments. Dating Basketmaker II and "Late Archaic" components from a variety of physiographic settings would help both to determine whether Early Basketmaker sites exist in the study area, and if they do, whether their distribution supports Matson's hypothesis or not.

Because of the new long chronology for Basketmaker II in the Four Corners area, the period is now longer than the rest of the Anasazi sequence. Studies of sociocultural change and dynamics within this period are essential, but have barely begun. A gradual increase in dependence on agriculture during this long period has different implications for sociocultural dynamics than does an early dependence. Related studies of temporal and spatial changes in population size and density also depend on being able to recognize Basketmaker II sites and to place them in at least gross temporal subdivisions of the period. Pursuing such studies in the study area depends on improved chronologies.

Several workers (e.g., Berry 1982; Smiley 1995b; Wilshusen, Chapter 6 this report) have suggested that there is a hiatus between Basketmaker II and Basketmaker III, because very vew

tree-ring or radiocarbon dates have been reported from about A.D. 400 to 600. Hammack (1992b) suggests that because of the "old wood" problem, radiocarbon dates may be somewhat older than their associated contexts, and that this must be taken into account when comparing radiocarbon and tree-ring dates. She also argues, with Eddy, that the Sambrito phase fills this presumed gap and represents a transition between Basketmaker II and III. This question could use a great deal of additional investigation, however, as discussed more fully by Wilson and Blinman (1994).

Cultural Origins of Basketmaker II

Matson (1991) has proposed that classic western Basketmaker II represents primarily an intrusion of immigrants from the desert Southwest, but that eastern Basketmaker II may have developed locally, as a result of local Late Archaic foragers adopting maize farming by diffusion, and perhaps as a result of curtailment of foraging territories by the intrusion of immigrants into the Four Corners area. Basketmaker II materials in the study area (including rock art) are critical to addressing this hypothesis. New work in Early Agricultural period sites in the desert Southwest will provide better evidence of the characteristics of the presumed migrants from that area. In the upland Southwest, more systematic comparisons of Basketmaker II and Late Archaic complexes from various parts of the area are now possible and can be used to get a better characterization of Late Archaic manifestations in the region to determine the degree of similarity (or lack of similarity) with Basketmaker II materials from the same localities. Systematic comparisons of this sort will be necessary to determine if Matson's model fits the archaeological record of Basketmaker II in the study area and in nearby portions of northwestern New Mexico (see Kearns 1992). The distributional data reviewed above suggest that comparison of Basketmaker II sites from the eastern and western parts of the study area may help determine if a cultural boundary exists. Chronology is again an issue here. Matson's distinction between Basketmaker II groups derived from the local Late Archaic (e.g., Los Pinos phase) and those derived from migrants from the south (e.g., White Dog phase) depends in part on evidence from late Basketmaker II times. If the presumed migration occurred at 1000 B.C., it seems less likely that these cultural differences would have been maintained until the early centuries A.D. If the presumed migration was not until late B.C. times, then there are likely to be greater cultural differences between early and late Basketmaker II manifestations.

Basketmaker II Subsistence, Settlement Patterns, and Social Organization Through Time

Although the outlines of Late Basketmaker II subsistence and settlement patterns have been sketched for the eastern part of the study area, very little is known of patterns in the west. And as noted repeatedly, early Basketmaker II is not well understood anywhere in the Four Corners area. Of particular interest is the question of whether maize was as important in early Basketmaker II times as it evidently became after A.D. 1. If maize was introduced by San Pedro-related colonists from farther south, it is likely that these settlers were already dependent on this crop. In this scenario, populations would have remained small and scattered because initially the introduced maize was not well adapted to the Four Corners area and could be grown only in a limited number of environmental settings, as Matson (1991) has suggested. On the other hand, if maize was adopted by indigenous foragers, it could either have rapidly become important, or it could have been used for a long time as a supplemental food source, depending on cost-benefit considerations. The early Basketmaker II period thus provides an opportunity to investigate some basic questions of general theoretical interest about the spread of agriculture.

Turning to the late Basketmaker II period, researchers note that there are many continuities with the succeeding Basketmaker III period. Yet there are also some profound differences, which become especially apparent when Basketmaker II is considered in "big picture" mode as representing up to 1,500 years of "pre-pottery Neolithic." How did Basketmaker II societies work? What kinds of changes were at work in the transformation into Basketmaker III, if in fact this was an in situ process and not the result of a replacement of population? Why do Basketmaker III groups make much greater investments in housing and why do Basketmaker III populations literally explode in parts of the study area that apparently were little used in Basketmaker II times? Did population growth in late Basketmaker II times eventually force abandonment of foraging as a fallback strategy, setting in motion a greater dependence on dry-farming and long-term storage, with a cuisine increasingly built upon corn meal? Or was this cascade of technological and organizational changes set off by the introduction or development of new varieties of maize and the beginnings of successful cultivation of beans? Or did warfare or some other social process promote a reduction in foraging and a commitment to greater dependence on stored maize, new land tenure systems, and stronger communities?

Basketmaker II Trade and External Relations

One of the striking features of Basketmaker II material culture is the relative frequency (at least as compared with later Puebloan complexes) of ornaments made of exotic materials such as shell. What are the sources of these materials, and how do they make their way into Basketmaker II communities? Does this kind of trade indicate that Basketmaker II communities were more open than those of the later Basketmaker III and Puebloan peoples? Is it related to greater mobility or to dependence on foraging resources as a risk-buffering strategies; i.e., did Basketmaker II individuals and groups maintain wide networks of trading partnerships to facilitate rapid movement into different areas if crops failed and local resources were inadequate?