

## Chapter 8

### PUEBLO II (A.D. 900-1150)

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#### INTRODUCTION

For this chapter, the end of the Pueblo II period is set at A.D. 1150 rather than the frequently used date of A.D. 1100 (Roberts 1935). The mid-1100s date has the advantage of falling after construction of classic Chaco-style great houses had ceased, and during a time when population in the study area may have been relatively low (see discussion in Chapter 9). Although Erik Reed had long ago proposed that Pueblo II should be defined to coincide with the period of Chaco florescence (Reed 1958:5), a later placement for the Pueblo II-Pueblo III boundary has only gradually been accepted in the northern Southwest. For the beginning of the period, the traditional date of A.D. 900 is used. This corresponds with another probably low point in regional population, after the abandonment of the Pueblo I villages in the Dolores Valley and before a renewed population buildup in the A.D. 1000s (see discussion below and in Chapter 7). As in the other chapters in this report, the terminology of the Pecos classification is used to refer to temporal periods, rather than to particular cultural types.

In the Pecos Conference classification (Kidder 1927), Pueblo II was envisioned as one stage in a progressive continuum culminating in the large communities of the “Pueblo III, or Great Period.” In its entirety, the Pecos Conference definition of Pueblo II reads as follows: “Pueblo II—the stage marked by widespread geographical extension of life in small villages; corrugation often of elaborate technique, extended over the whole surface of cooking vessels” (Kidder 1927:490).

The notion that the Pecos sequence represented gradual, progressive change was reinforced by Roberts’ (1935, 1937) influential introduction of terminology implying a cultural “rise and fall” model for the Anasazi tradition. This scheme included “Modified Basketmaker” (for Basketmaker III of the Pecos classification), “Developmental Pueblo” (for Pueblo I and II), “Great Pueblo” (for Pueblo III), and “Regressive Pueblo” (for early Pueblo IV). Roberts equated the Pueblo II “small villages” mentioned in the Pecos classification with Prudden’s “unit-type pueblo” (Prudden 1903, 1914, 1918) as the typical site type of the period. Roberts argued that the unit-type dwelling, consisting of a kiva with associated masonry surface rooms, was fully developed by late Developmental Pueblo times (Roberts 1930, 1935, 1937), and had emerged gradually out of earlier antecedents (Roberts 1939b).

At the same time that these ideas were gaining currency, however, tree-ring dating was beginning to show that the Pueblo II period was more complex than the “developmental” model implied. At Chaco Canyon, large structures such as Pueblo Bonito and Chetro Kettle were shown to date to the late A.D. 1000s, and to be contemporaneous with some of the small-house sites such as Bc 51 (Kluckhohn and Reiter 1939). Because A.D. 1100 had by that time become accepted as the chronological boundary between Pueblo II and III (Roberts 1935), this not only meant that the “great pueblos” of Chaco Canyon and Mesa Verde had been built nearly 200 years apart but that they fell into two different stages, and that the unit-type pueblo was not the only site type present in Pueblo II.

Interpretations of the Pueblo II period in southwestern Colorado have continued to be plagued by underlying and often unrecognized assumptions of gradual, unidirectional, progressive

change. As research has continued through the years, however, the accumulating evidence has permitted and encouraged the development of more complex interpretive models.

Many of the early excavations that provided information on Pueblo II manifestations were done in Mesa Verde National Park, in the Mancos-McElmo drainage unit. These include Fewkes' (1917) poorly reported excavations in the Far View group, O'Bryan's (1950) excavation of sites on Chapin Mesa for Gila Pueblo, and an extended campaign by Lancaster et al. (1954) that resulted in the public displays of stabilized open sites on Ruins Road. Excavations of Pueblo II contexts were carried out by the Wetherill Mesa Project at Badger House (Hayes and Lancaster 1975), Big Juniper House (Swannack 1969), and Two Raven House (Hayes n.d.). As part of this project, Hayes' (1964) intensive survey of Wetherill Mesa was a pioneering study of changes in Puebloan settlement pattern and population through time. Rohn's (1966, 1977) synthesis of survey and excavation research on Chapin Mesa also represented an advance in the use of community and settlement pattern concepts in analyzing Puebloan archaeology in the study area; in addition, he documented the numerous water and soil control features constructed by Chapin Mesa communities in the Pueblo II and III periods (Rohn 1963). Excavations were also conducted by the University of Colorado in the 1950s and 1960s in conjunction with field schools, developing additional display sites for the Park, or salvaging sites that were to be impacted by development of park facilities (Lister 1964, 1965, 1966, 1967, 1968; Smith and Zubrow 1999; Breternitz 1999). Pueblo II contexts were encountered in a number of these projects.

Outside the park, early studies that yielded information about the Pueblo II period included work by Jeancon (1922; Jeancon and Roberts 1923) and Roberts (1930) at Chimney Rock Pueblo and other sites in the USJ-Piedra drainage unit, Paul Martin (1936, 1938) in the Ackmen-Lowry area of the Monument-McElmo unit, Earl Morris (1919b, 1939) in the La Plata drainage, and Erik Reed (1944, 1958) in Mancos Canyon, in the Mancos-Mesa Verde drainage unit. Fieldwork for Reed's study was done in conjunction with the construction of a road in Mancos Canyon in the early 1940s. In the early 1970s, when this road was to be further widened and developed, the University of Colorado salvaged several sites with Pueblo II components (Hallisy 1974; Nordby 1974; Gillespie 1976; Farmer 1977). The Navajo Reservoir project also resulted in studies of Pueblo II and earlier sites in the Upper San Juan and Pine River drainages in Colorado and New Mexico (Eddy 1966, 1972; Dittert and Eddy 1963).

Although Chacoan influences in the study area had been recognized by Jeancon (1922) at Chimney Rock and by Martin (1936) at Lowry, it was not until the early 1970s that researchers working at Chaco Canyon proposed that the central sites there were systemically related to the numerous "Chacoan outliers" located in and around the San Juan Basin. In the 1970s, several projects in the study area focused on Chacoan great house sites. These included Bradley's (1974, 1988) excavations at Wallace Ruin in the Monument-McElmo drainage unit and Brisbin's work at the nearby Ida Jean site (Brisbin and Brisbin n.d.). In the USJ-Piedra unit, there was the reexcavation and stabilization of the Chimney Rock site (Eddy 1977; Lister 1993), which had initially been excavated by Jeancon and Roberts (Jeancon 1922; Jeancon and Roberts 1923). And as a bicentennial project, a University of Colorado team excavated the Escalante great house now partially on display adjacent to the Anasazi Heritage Center near Dolores in the drainage unit of that name (Hallasi 1979).

The development of effective cultural resource management programs in the 1970s and their continuation to the present has resulted in an enormous increase in the number of survey records that document sites of the Pueblo II period. Numerous Pueblo II sites have also been tested or excavated in conjunction with assessing or mitigating the impacts of development projects. Notable large-scale surveys include those reported by Fetterman and Honeycutt (1987) for the Mockingbird Mesa area, the sampling survey of the BLM's Sacred Mountain Planning Unit (Chandler et al. 1980), and the survey of

the resource protection zone around the units of Hovenweep National Monument (Greubel 1991). The DAP of the late 1970s through the late 1990s was designed to identify and mitigate the impacts on archaeological and historic sites caused by the construction of McPhee Reservoir and the regional expansion of irrigation systems. Studies of the reservoir area showed that relative to earlier periods, the Pueblo II occupation of the Dolores Valley was relatively weak (but see discussion of the Cline subphase and Escalante phase in Kane 1986a: 377-398). However, numerous Pueblo II components were impacted by construction of the extensive Dolores Project water delivery systems in various parts of the Montezuma-McElmo, Ute Mountain, and Mesa Verde-Mancos drainage units. Studies done in relation to these water delivery systems are considered part of the Bureau of Reclamation's Four Corners Archaeological Project (Hurley 1998). This project has resulted in several excellent excavation and testing reports that add greatly to the knowledge of Pueblo II spatial, temporal, and functional variation (see especially Kuckelman and Morris 1988; Morris 1986a, 1986b, 1991; Errickson 1993, 1995; Billman 1998).

In the 1980s and 1990s, research by the privately funded Crow Canyon Archaeological Center focused primarily on the Pueblo I and Pueblo III periods. However, a block survey conducted by Adler (1990) in the Sand Canyon locality documented numerous Pueblo II sites and provided the basis for developing models of Puebloan community structure and persistence through time (Adler and Varien 1994). The Sand Canyon Testing Program (Varien 1999a, ed. 1999) encountered late Pueblo II components, as did testing at the Yellow Jacket site (Kuckelman 1997). The Center's current project at Shields Pueblo promises to yield important new information about settlement aggregation and possibly about Chacoan relationships at a Pueblo II and III period community center located in the Sand Canyon locality of the Monument-McElmo drainage unit (Duff and Ryan 1999). Other recent Pueblo II research of interest includes James Kendrick's intensive survey in the Lowry Ruin area (Kendrick and Judge 1996) and Kent's (1991, 1992) analysis of a small Pueblo II site in the Goodman Point area.

## **OVERVIEW OF CULTURE HISTORY AND MAIN TRENDS IN THE PUEBLO II PERIOD**

Tables 8-1 and 8-2 list some of the best-known and best-studied sites (not always the same thing) from both the early (A.D. 900-1050) and late (A.D. 1050-1150) Pueblo II period. Locations of these sites are shown in Figures 8-1 and 8-2. As discussed later, Pueblo II settlements in the study area are somewhat less evenly distributed than they were in the Pueblo I period. In general, sites of this period are concentrated in the Mesa Verde-Mancos, Montezuma-McElmo, and Ute drainage units, with a secondary concentration in the Upper San Juan-Piedra (USJ-Piedra) drainage unit.

### **Early Pueblo II (A.D. 900-1050)**

During the early Pueblo II period, the typical habitation site consists of one or two (and rarely more) habitation units (each equivalent to one of Prudden's [1903] unit-type pueblos). Each habitation unit includes a kiva (usually round in plan with a ventilator), a small number of associated surface rooms of jacal or masonry, often another small pit structure used as a grinding or mealing room, and a midden area. Other architectural features may be associated, such as extramural pits, small pit rooms, ramadas, and/or an enclosing stockade. Over most of the study area, communities consist of dispersed clusters of these small habitation sites. In the Chimney Rock area of the Upper San Juan-Piedra drainage unit, however, the Arboles phase includes small aggregations of habitation units in addition to the dispersed pattern (Eddy 1972, 1977, 1993). Great kivas are present throughout the study area, and probably served as central features for many if not most communities. Architectural and community patterns are clearer from the period A.D. 1000-1050 than from the A.D. 900s.

**Table 8-1. Community Centers and Well-known or Well-dated Sites, A.D. 900-1050.**

Key <sup>a</sup>	Site/Project Name	Site Number	Drainage Unit	Dating Method	Public Architecture	Reference
1*	Mancos Canyon Great Kiva	5MT2350	Mesa Verde-Mancos	tree-ring ceramics	great kiva	Farmer 1977
2*	Sand Canyon Locality Great Kiva	CC-86-91 (Crow Canyon field number)	Montezuma-McElmo	ceramics	possible great kiva	Adler 1990
3*	Mesa Verde Site 143 (Gila Pueblo number [GP]) (Twin Trees Area)	5MV60	Mesa Verde-Mancos	tree-ring	unfinished great kiva?	Jennings 1968
4	Far View Area	Far View 12 and 13; 5MV875	Mesa Verde-Mancos	tree-ring ceramics		Lister 1965; Robinson and Harrill 1974
5	Mesa Verde Site 16	5MV16	Mesa Verde-Mancos	ceramics architecture		Lancaster and Pinkley 1954
6	Twin Trees Area	5MV101	Mesa Verde-Mancos	ceramics architecture		Lancaster et al. 1954
7	Big Juniper House	5MV1595	Mesa Verde-Mancos	tree-ring		Swannack 1969
8	Two Raven House	5MV1645	Mesa Verde-Mancos	tree-ring		Hayes n.d.
9	Mancos Canyon Sites	5MTUMR2347, 5MTUMR2559 (Ute Mountain Ute Reservation Numbers)	Mesa Verde-Mancos	ceramics		Hallisy 1974; Gillespie 1976; Farmer 1977
10	Hanson Pueblo	5MT3876	Montezuma-McElmo	tree-ring		Morris et al. 1993

<b>Key<sup>a</sup></b>	<b>Site/Project Name</b>	<b>Site Number</b>	<b>Drainage Unit</b>	<b>Dating Method</b>	<b>Public Architecture</b>	<b>Reference</b>
11	Ewing Site	5MT927	Montezuma-McElmo	tree-ring		Hill 1985
12	Gnatsville	5MT1786	Montezuma-McElmo	tree-ring		Kent 1991
13	South Canal Sites (Dobbins Stockade and Norton House)	5MT8827, 5MT8839	Montezuma-McElmo	tree-ring		Kuckelman 1988a, 1988c
14	Ackmen Site 1 (1937)	Unknown	Montezuma-McElmo	tree-ring		Martin 1938
15	DCA-Superior Oil Project	5MT8371	Montezuma-McElmo	tree-ring		Dykeman 1986
16	Dripping Springs	5MT2527	Montezuma-McElmo	tree-ring		Morris 1991

<sup>a</sup> This table includes sites that are interpreted as community centers and sites that are either well-known or well-dated. The community centers are designated with an asterisk (\*).

**Table 8-2. Community Centers and Well-known or Well-dated Sites, A.D. 1050-1150.**

<b>Key<sup>a</sup></b>	<b>Site/Project Name</b>	<b>Site Number</b>	<b>Drainage Unit</b>	<b>Dating Method</b>	<b>Public Architecture</b>	<b>Reference</b>
1*	Chimney Rock Pueblo	5AA8	Mesa Verde-Mancos	tree-ring	great house; great kiva	Eddy 1977
2*	Morris 20	Unknown	Mesa Verde-Mancos	architecture	great house (?)	Morris 1919b
3*	Weber Canyon Pueblo	MV155 (GP)	Mesa Verde-Mancos	ceramics architecture	great house (?)	O'Bryan 1950
4*	Prater Canyon Pueblo	MV72 (GP)	Mesa Verde-Mancos	tree-ring	great house (?)	Robinson and Harrill 1974
5*	Morefield Canyon Community	5MV1067 and others in vicinity	Mesa Verde-Mancos	tree-ring	great kiva; reservoir; Chaco-style kiva	Robinson and Harrill 1974
6*	Far View	5MV808	Mesa Verde-Mancos	tree-ring ceramics architecture	great house	Fewkes 1917, 1922; Robinson and Harrill 1974
7*	Mouth of Navajo Canyon House	Not Recorded	Mesa Verde-Mancos	architecture	great house (?)	Breternitz, pers. comm.
8*	Red Pottery Mound	5MT2363	Mesa Verde-Mancos	ceramics architecture	great house; great kiva	Site visit
9*	Yucca House	5MT4359	Ute	ceramics architecture	great house; great kiva	Holmes 1878; Fewkes 1919
10*	Dolores Group (Emerson, Reservoir, Escalante)	5MT4447, 5MT4450, 5MT2149	Dolores	ceramics architecture archaeomag	bi-wall; 2 great houses; great kiva	Thompson 1994; Kane 1986a; Reed et al. 1979; Fetterman and Honeycutt 1989

Key <sup>a</sup>	Site/Project Name	Site Number	Drainage Unit	Dating Method	Public Architecture	Reference
11*	Lake View Group (Wallace, Haynie, Ida Jean)	5MT6970 (Wallace), others unrecorded	Montezuma-McElmo	tree-ring	3 great houses; great kiva; possible road features	Bradley 1988; Brisbin and Brisbin n.d.; Powers et al. 1983
12*	Hartman Draw	5MT8888	Montezuma-McElmo	ceramics architecture	great house (?); great kiva	Kuckelman 1986
13*	Mitchell Springs	5MT10991	Montezuma-McElmo	tree-ring ceramics	great house (?); great kiva	Dove et al. 1997
14*	Yellow Jacket	5MT5	Montezuma-McElmo	ceramics	great house; great kiva; road	Kuckelman 1997
15*	Shields Pueblo Road	Not Recorded	Montezuma-McElmo	architecture	road	Adler 1990; Duff and Ryan 1999
16*	Casa Negra	5MT3925	Montezuma-McElmo	ceramics architecture	great house; road	Adler 1990
17*	Albert Porter	5MT123	Montezuma-McElmo	ceramics architecture	great house; great kiva; possible road	site form; Lipe 1999a
18*	Carvell Ruin	Not Recorded	Montezuma-McElmo	ceramics architecture	great house (?)	site visit
19*	Ansel Hall	Unknown	Montezuma-McElmo	tree-ring ceramics architecture	great house (?); great kiva	Guthe 1949; Robinson and Harrill 1974 (see Cahone Ruin)
20*	Lowry Group (North Lowry, Lowry, Casa de Valle)	5MT839, 5MT1566, unknown	Montezuma-McElmo	tree-ring ceramics architecture	3 great houses (?); great kiva; roads	Martin 1936; Rohn 1984

Key <sup>a</sup>	Site/Project Name	Site Number	Drainage Unit	Dating Method	Public Architecture	Reference
21*	Upper Squaw Mesa Village	5DL860, 861, 862, 863, 864	Montezuma-McElmo	ceramics architecture	great house (?)	site forms
22*	Carhart Ruin	Unknown	Montezuma-McElmo	architecture	great house (?)	site visit
23	Far View Area	Far View 6 and 9, 5MV499, 5MV866, 5MV875	Mesa Verde-Mancos	tree-ring ceramics architecture		Lister 1964, 1965, 1966; Robinson and Harrill 1974
24	O'Bryan Site 1 (GP)	MV1 (GP)	Mesa Verde-Mancos	tree-ring		O'Bryan 1950
25	Twin Trees Area	MV102 (GP) and others in vicinity	Mesa Verde-Mancos	tree-ring		O'Bryan 1950; Lancaster et al. 1954
26	Big Juniper House	5MV1595	Mesa Verde-Mancos	tree-ring		Swannack 1969
27	Badger House	5MV1452	Mesa Verde-Mancos	ceramics architecture		Hayes and Lancaster 1975
28	Mancos Canyon Area	5MTUMR2741, 5MTUMR2346	Mesa Verde-Mancos	tree-ring ceramics		Farmer 1977; Nordby 1974; White 1992
29	Dominguez Ruin	5MT2148	Dolores	tree-ring		Reed 1979; Reed et al. 1979
30	Towaoc Reach III Sites	5MT8943, 7704, 7723, 10207	Ute	tree-ring		Errickson 1993

Key <sup>a</sup>	Site/Project Name	Site Number	Drainage Unit	Dating Method	Public Architecture	Reference
31	Ute Irrigated Lands Sites	5MT8653, 9863, 9873, 9924, 9942, 9934, 9943, 10010	Ute	tree-ring		Billman (ed.) 1998
32	South Canal Sites (Casa Bisecada, Bindweed House)	5MT8829, 5MT8834	Montezuma- McElmo	tree-ring		Kuckelman 1988a; Morris 1988a, 1988b
33	Sand Canyon Testing Program (G & G Hamlet, Kenzie Dawn Hamlet)	5MT11338, 5MT5152	Montezuma- McElmo	tree-ring		Varien, ed. 1999
34	Shields Pueblo	5MT3807	Montezuma- McElmo	tree-ring		Duff and Ryan 1999
35	Mustoe Site	Unknown	Montezuma- McElmo	tree-ring		Gould 1982
36	Ewing Site	5MT927	Montezuma- McElmo	tree-ring		Hill 1985
37	Hanson Pueblo	5MT3876	Montezuma- McElmo	tree-ring		Morris et al. 1993

<sup>a</sup>This table includes sites that are interpreted as community centers and sites that are either well-known or well-dated. The community centers are designated with an asterisk (\*).

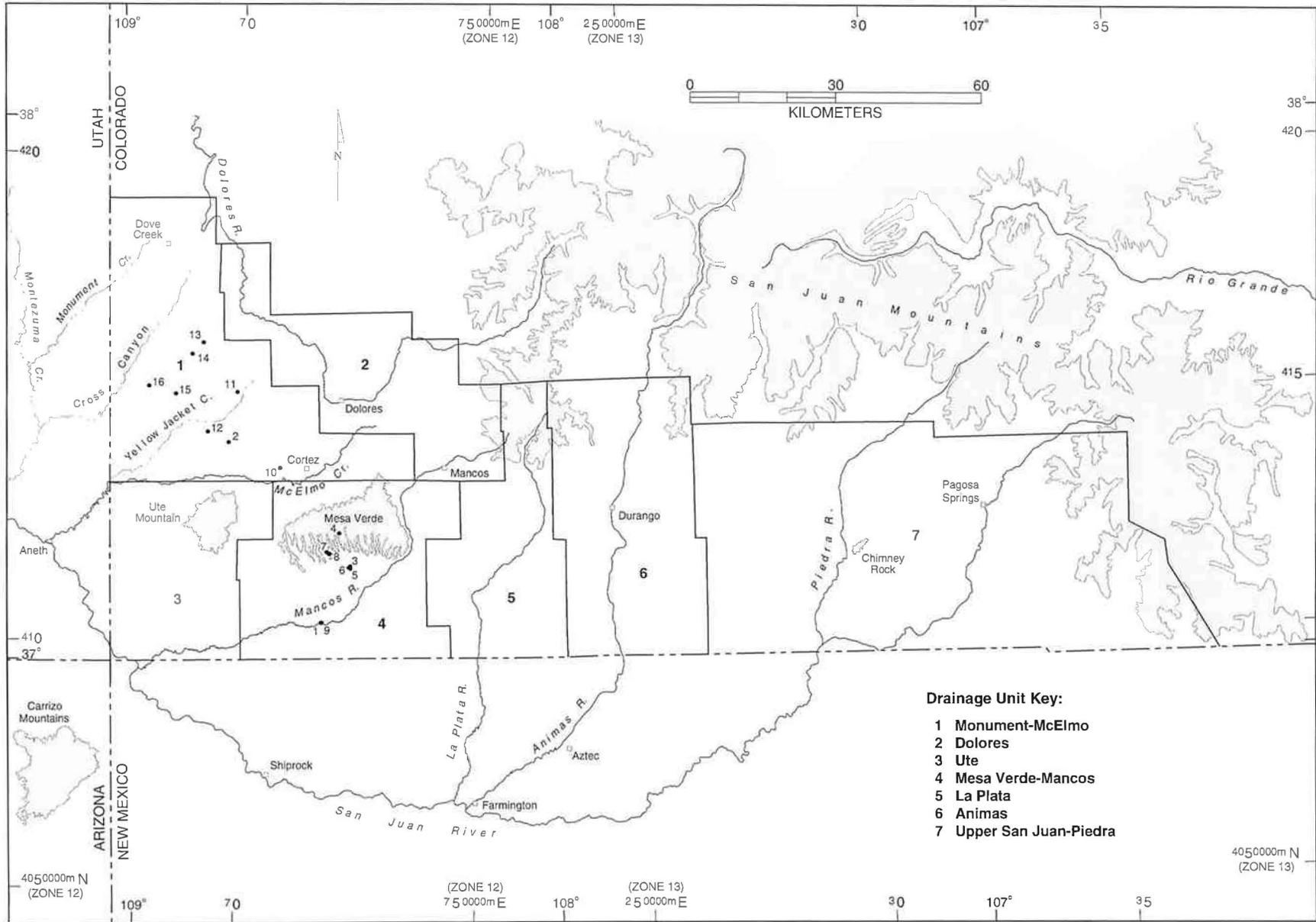


Figure 8-1. Map of community centers and well-known and/or well-dated sites in the study area, A.D. 900-1050. (Reprinted with permission of Crow Canyon Archaeological Center.)

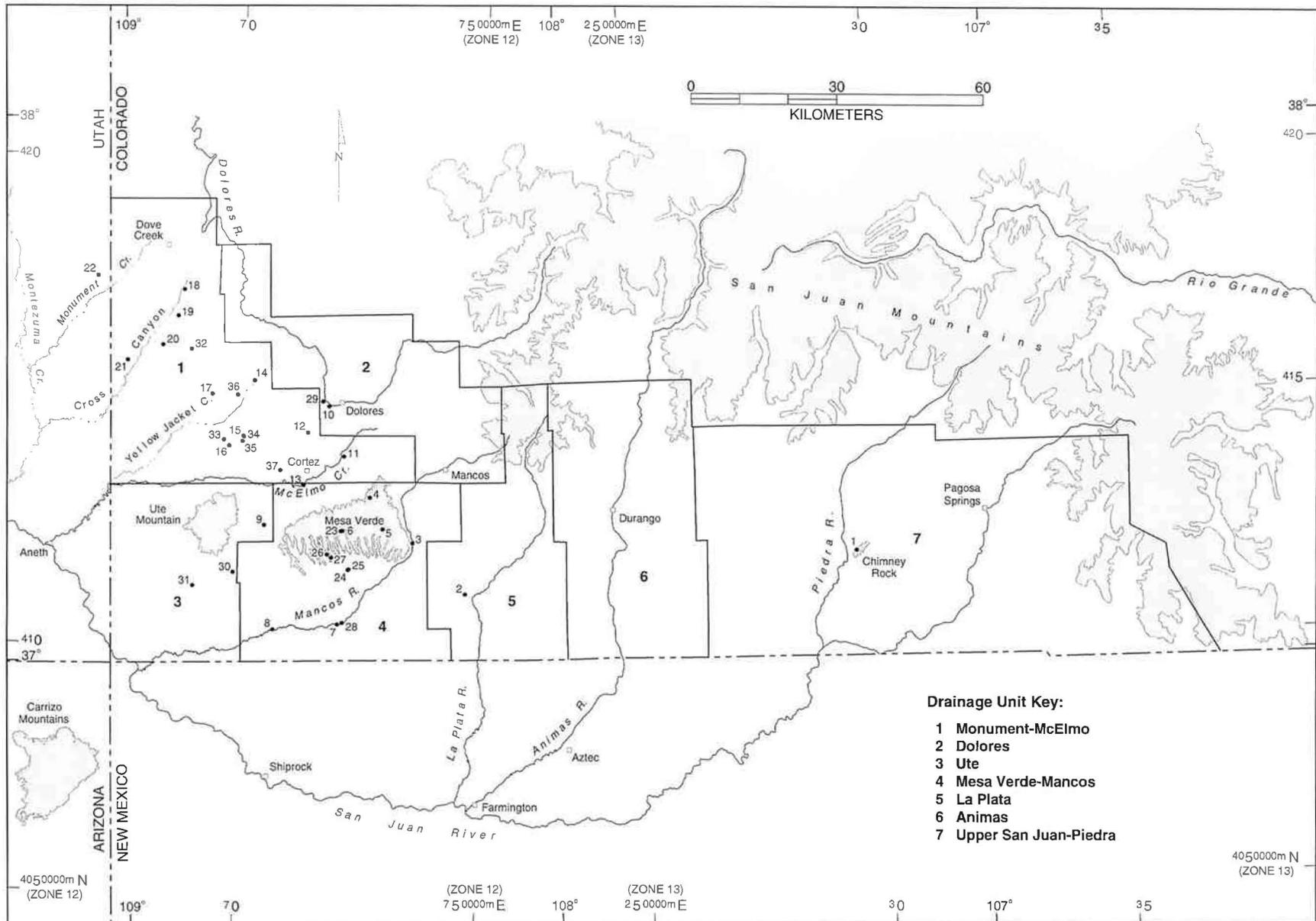


Figure 8-2. Map of community centers and well-known and/or well-dated sites in the study area, A.D. 1050-1150. (Reprinted with permission of Crow Canyon Archaeological Center.)

The tenth century remains one of the least understood intervals in the history of the study area (Varien 1999b:145). In Chapter 7 of this report, Wilshusen argues that over most of the study area, population declined rather dramatically in the late A.D. 800s, and stayed low through much of the A.D. 900s (Wilshusen and Schlanger 1993; also see Varien 1997, 1999b; Varien et al. 1996). Wilshusen and Wilson (1995:75) argue the possibility "...that there is a large-scale population movement from the upland Colorado villages in the A.D. 880s to the more dispersed, but still very clustered communities of northwestern New Mexico in the late A.D. 890s and early 900s."

In the Upper San Juan-Piedra drainage unit, however, Eddy (1972, 1974) argues that there was some population movement north into Colorado during early Pueblo II times. In the Navajo Reservoir area that straddles the Colorado-New Mexico border, there are transitional Pueblo I-Pueblo II settlements of the late Piedra phase (Eddy 1966; Dittert and Eddy 1963; also see brief discussion by Wilshusen in Chapter 7 of this report). The early Pueblo II Arboles phase (Roberts 1930; Eddy 1972, 1977, 1993) follows the Piedra phase and is dated to A.D. 950-1050, although dating is not precise enough to determine whether occupation was continuous through that century. Eddy (1972:40; 1974) argues that headward river entrenchment in the A.D. 900s and early 1000s caused populations of the late Piedra and early Arboles phases to move progressively upstream, so that the Navajo Reservoir area was abandoned by about A.D. 1000, but population expanded in the late 900s and early 1000s in the area surrounding Chimney Rock in the Piedra River and Stollsteimer Creek drainages (Eddy 1977, 1993; Roberts 1930). Hence, the USJ-Piedra drainage unit may have seen some growth in settlement during early Pueblo II, unlike most other parts of the study area. Only a few Arboles phase sites in this locality have been excavated; they include Roberts' (1930) "Class C" sites and perhaps several dug by Jeancon (1922). Several Arboles phase components were also excavated farther south as part of the Navajo Reservoir studies (Eddy 1966, 1972; Dittert and Eddy 1963) and several in the Chimney Rock locality have been tested (Eddy 1993; Mobley-Tanaka 1990). Arboles phase excavations have yielded few tree-ring dates.

Several lines of evidence (tree-ring cutting dates, number of well-dated excavated components, and survey data) indicate that with the probable exception of the USJ-Piedra drainage unit, the early Pueblo II period was less populous than both the Pueblo I and the late Pueblo II periods throughout the study area. An interesting perspective on variations in building activity is provided by Varien's (1997) compilation of all recorded tree-ring cutting dates from the central Mesa Verde region between A.D. 900 and 1300 (reproduced as Figure 8-3). The area covered includes the Monument-McElmo, Dolores, Ute, and Mancos-Mesa Verde drainage units, as well as most of the La Plata unit, but excludes the Animas and USJ-Piedra units. The low frequency of dates for the A.D. 900s supports an inference of low population for the western and central drainage units during this century. A possible countervailing trend in the USJ-Piedra unit has already been noted. Compilation of site records for the Animas unit indicates that the Pueblo II period is poorly represented overall.

If the Pueblo I period had been included in Figure 8-3, it would show a substantial number of dates in the A.D. 700s and 800s, throwing the near-absence of dates from A.D. 905 to A.D. 1005 into sharper relief. Figure 8-3 also shows that with one exception, all the decades of the A.D. 900s have at least a few cutting dates, indicating that trees were being harvested more or less continuously by a resident population, but at a very low rate.

Few excavated archaeological contexts from the study area can be securely placed in the A.D. 900-950 interval on the basis of tree-ring dates or even pottery type associations. The clearest example is site 5MT8371 (Dykeman 1986), located in the upper part of the Negro Canyon drainage in the Monument-McElmo drainage unit. Principal features at the site are an isolated, shallow, earth-walled pit structure, several large, deep, extramural storage pits, and a thin midden. No evidence of surface

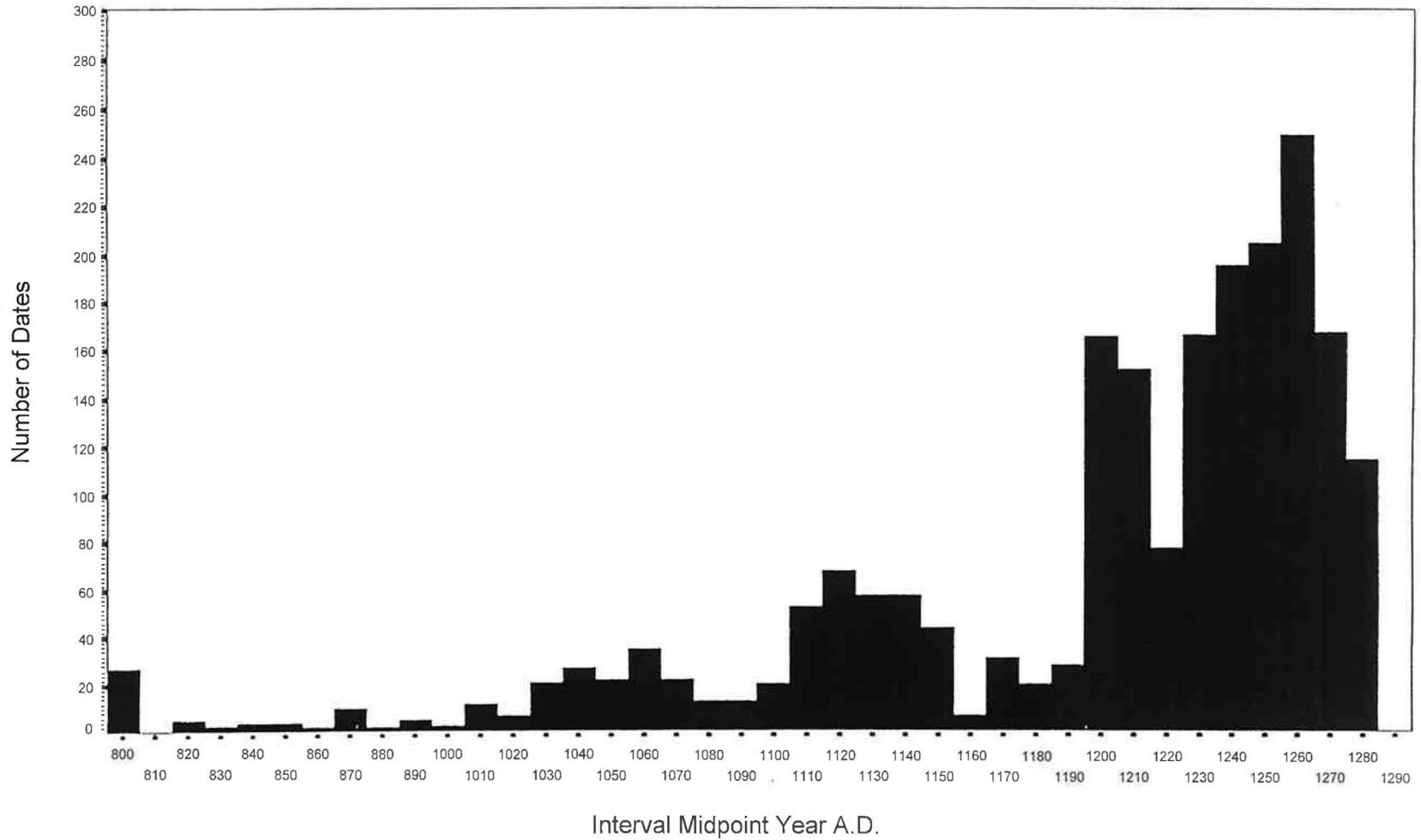


Figure 8-3. All tree-ring cutting dates from the central Mesa Verde region (portions of southwestern Colorado and southeastern Utah) between A.D. 900 and 1300 (Varien 1997:Figure 7.17). (Reprinted with permission.)

structures was found. Tree-ring dates from burned beams in the pithouse roof fall stratum indicate that construction probably occurred in A.D. 940 or shortly thereafter. The low labor investment in architecture and the relatively sparse nature of the site's total archaeological record indicate that the occupation was probably brief.

Well-dated contexts from the late A.D. 900s are slightly more numerous. Farmer (1977) reports probable dates of constructions in the A.D. 970s for a great kiva at site 5MT2350, located in Mancos Canyon, in the Mancos-Mesa Verde drainage unit. The presence of a great kiva at this time implies that a community existed in the locality. In fact, at the nearby Ute Canyon site (5MT2347), Gillespie (1976:2) documents a sequence of structures and deposits that reflects a long occupation that he thinks was most intense from about A.D. 825 to 1000. Although the tree-ring dates he reports do not include cutting dates from the A.D. 900s, he presents other evidence indicating that the Ute Canyon site was occupied during part or all of that century.

Brisbin (1997:273-276) has recently reported a cluster of tree-ring dates from a kiln on Chapin Mesa, in the Mancos-Mesa Verde drainage unit. The latest, at A.D. 960++B, is a bark date on a piece of pinyon pine; Brisbin (1997:276) reports that analysts at the Laboratory of Tree-Ring Research suggested that the sample was probably missing less than five rings. The date is from firewood, which undoubtedly was collected as dead wood. Brisbin (1997:276) notes that pinyon ceases to be a good fuel after about five years on the ground, and hence reasons that the wood was probably collected and burned about A.D. 970. The presence at this time of a kiln that was probably used by multiple households is good evidence of a resident population on Chapin Mesa at this time.

These well-dated cases demonstrate that the study area continued to be occupied during the A.D. 900s, and this inference is also supported by ceramic and stratigraphic evidence at several additional excavated contexts that lack tree-ring samples with cutting dates. Overall, however, the low number of excavated contexts that are assignable to this century supports the inference that regional population was low, or at least that little construction was being undertaken. If we include the Arboles phase excavations referenced above, then reasonably well-dated, excavated contexts from the A.D. 900s are known from only three drainage units—USJ-Piedra, Mancos-Mesa Verde, and Monument-McElmo.

Alternatively, survey data from particular localities has frequently been interpreted as indicating substantial site populations in the A.D. 900s. On Wetherill Mesa in the Mancos-Mesa Verde unit, Hayes (1964) assigned more sites to the Ackmen phase (which he dates from A.D. 900 to 975/1000) than to any other phase except the late Pueblo III Mesa Verde phase. Hayes (1964:109) surmises that the Ackmen phase represents the population peak on Wetherill Mesa, because sites of this phase are likely to be undercounted relative to later sites which are more visible because of the increased use of masonry in later times. He also suggests that it is likely that some Ackmen phase components are obscured by later construction at the same site. The ceramic complex that Hayes uses to recognize Ackmen sites consists of Cortez Black-on-white, early Mancos Black-on-white, and both Mancos Gray and Mancos Corrugated. Wilson and Blinman's (1991a) synthesis of ceramic dating for the Mesa Verde region places the decline of Cortez Black-on-white and the rise of Mancos Black-on-white and Mancos Corrugated somewhat later than Hayes (1964) did, indicating that many or most of his Ackmen phase sites might actually date to the late A.D. 900s or early A.D. 1000s. Wilson and Blinman (1991a) also argue that corrugated ceramics did not appear in the study area until after about A.D. 930, an inference supported by Pierce's (1999) Southwest-wide review of the origins and spread of corrugated surface treatment on pottery vessels.

Blinman (1991; also see Wilson and Blinman 1991a) notes that ceramics from Dykeman's (1986) well-dated mid-900s Pueblo II site in the upper Negro Canyon drainage differed little from those

of the late Pueblo I period. Blinman (1991) suggests that it is unwise to assume that ceramic change in the Mesa Verde tradition was uniform and gradual; ceramic change may have been most rapid in periods of greatest settlement stability. The few settlements known from the study area that date to the A.D. 900s are small and appear to have been only briefly occupied, and examples of great kivas or other architectural indicators of community centers are very rare. Following Blinman's (1991) argument, the A.D. 900s appears to have been time of settlement instability (as well as low population density), when ceramic change was slow.

The suggested later dating for Hayes' (1964) Ackmen phase sites at Wetherill Mesa does not detract from their importance. Even if these sites do not appear until the late A.D. 900s and early 1000s, they probably represent the first rapid buildup of population in the study area after the demographic "trough" of the early and middle 900s. Thus, the Mesa Verde proper may have had relatively large, densely settled Pueblo II communities some decades before most or all of the rest of the study area. If in fact population density and agricultural intensification contribute to increased investment in the construction of residential facilities, this may help explain why substantial masonry construction becomes popular earlier on the Mesa Verde than elsewhere in the area. Likewise, the construction of reservoirs appears to be earlier here than in other parts of the area (Smith and Zubrow 1999; Breternitz 1999; Wright Water Engineers 1997).

In general, the A.D. 1000s show population increases and settlement of new areas in many parts of the northern Southwest, perhaps at least partly in response to increases in available moisture. The western part of the study area clearly appears to have participated in this broad trend of increasing population, with settlements widely dispersed in a variety of agricultural settings. The easternmost part of the study area continued to be populated throughout the A.D. 1000s, but does not show continued population growth and may show some decline with the transition from the Arboles to the Chimney Rock phase in the mid-1000s (Eddy 1972, 1977, 1993). The Animas and La Plata drainage units appear not to show population growth in the A.D. 1000s. This differential pattern of "recovery" from the low population levels of the A.D. 900s remains to be explained.

Over most of the study area, Pueblo II communities dating to the period A.D. 1000-1050 consist of dispersed clusters of one- or two-household homesteads, located in an area that provided agricultural soils and access to a reliable domestic water supply. Several great kivas date to the early A.D. 1000s and undoubtedly served as central features for their surrounding communities. This architectural and community pattern probably characterized the A.D. 900s as well, although communities were probably smaller and almost certainly less numerous, and there is likely to have been higher mobility at the household level. Varien (1997, 1999b) argues that there was renewed immigration into the western part of the study area in the very late A.D. 900s or early 1000s, and that many communities were founded at that time that then persisted until the late A.D. 1200s. A few of these communities may also have had their roots in the sparse settlements of the A.D. 900s.

### **Late Pueblo II (A.D. 1050-1150)**

Numerous sites can confidently be assigned to the period A.D. 1050-1150. The late Pueblo II period is notable for the widespread occurrence of small habitations, especially in the western part of the study area, and for the appearance, primarily after A.D. 1075, of Chaco-related great house sites, which apparently served as central structures for communities. Although most communities continue to consist of widely dispersed homesteads and hamlets, some of these dispersed communities develop a nucleus composed of a village-sized aggregate of habitations. Community centers become more visible, either through the presence of a great kiva, a great house, a residential aggregate, or some combination of these.

Habitation units show considerable architectural variability, especially between settlements of the Upper San Juan-Piedra drainage unit and those of the western part of the study area.

In the Montezuma-McElmo and Mancos-Mesa Verde drainage units, most areas having arable soils appear to have had at least some amount of use. Habitations in these drainage units typically are located in upland areas, but canyon-oriented sites also occur (see Varien, ed. 1999); these are located on talus tops, benches, or the edges of valley floors, and it is likely that there was some farming of flood plains to take advantage of high water tables, as well as runoff farming, using water draining from the valley sides after storms. Check-dams and artificial terraces apparently began to be built in some canyon locations in the Pueblo II period (Rohn 1963; Smith and Zubrow 1999), although these water and soil control systems were probably more extensive in the Pueblo III period. In the Ute drainage unit, flood water farming was evidently carried out along ephemeral drainages on the Ute Mountain piedmont in both late Pueblo II and early Pueblo III times (Huckleberry and Billman 1998).

Although upland dry-farming appears to have been the preferred agricultural strategy overall, it is clear that a variety of agricultural practices was being used, in some cases by different households within the same community. The generally small size of habitation sites and their dispersion over a variety of environments indicates that most households resided on or adjacent to their primary farm lands. The occurrence of field houses in some localities indicates, however, that some households may have had a multiple-field strategy. In general, sites do not appear to have been located to ensure quick access to drinking water. Both small dispersed habitations and the more aggregated community centers appear to have been located to ensure easy access to good arable soils. One or more reliable springs are typically found within the area occupied by a community.

As in early Pueblo II times, the majority of late Pueblo II habitation sites in most parts of the study area are homesteads consisting of a single habitation unit. Multiple-unit hamlets are more common in the late Pueblo II period than they were earlier, however. In the western part of the study area, the habitation unit usually consists of a kiva, often a semisubterranean grinding room, and several associated surface rooms of either jacal or masonry. In some late Pueblo II settlements, masonry towers occur. These are usually associated with a habitation unit and are likely to be connected to the kiva or to one of the surface rooms by a tunnel. In addition to the primary residential architecture, evidence of small pit rooms and ramadas appears at some sites. Stockades occur occasionally, and a few sites have masonry room blocks that surround a small central plaza and kiva (see Site 875 at Mesa Verde National Park [Lister 1965]).

In the eastern part of the study area, the best-known late Pueblo II settlement cluster is at Chimney Rock Mesa (Eddy 1977, 1993; Mobley-Tanaka 1990, 1993; Malville and Matlock 1993; Lister 1993) in the USJ-Piedra drainage unit. At about A.D. 1000/1050, the Arboles phase gives way to the Chimney Rock phase, which lasts until about A.D. 1125 (Eddy 1977, 1993). The early Pueblo II Arboles sites are primarily on river terraces, but after about A.D. 1050, sites of the Chimney Rock phase are increasingly located at higher elevations, with the major cluster being on and around Chimney Rock Mesa (Eddy 1977, 1993; Mobley-Tanaka 1990, 1993). Here, a large aggregation of habitation sites surrounds a formal, Chacoan-style great house—Chimney Rock Pueblo. The numerous surrounding habitations consist of distinctive thick-walled “above-ground pit structures” or “crater houses” (Eddy 1977). The great house dates to approximately A.D. 1075-1125; the other settlements appear to have been occupied contemporaneously, but construction of these units may have begun somewhat earlier than at the great house (Eddy 1977, 1993). The habitations of the early Pueblo II Arboles phase sites in this area appear to share a generally similar architectural “design vocabulary” with early Pueblo II sites elsewhere in the study area. However, the habitations of the Chimney Rock phase are architecturally quite different from both the Arboles phase sites and late Pueblo II habitations elsewhere in the study

area. Breternitz (1993b) and Kane (1993) suggest that the distinctive architecture of the Chimney Rock phase habitations is more closely related to that of settlements in the Gallina area of northwestern New Mexico.

With the exception of a possibly mid-1000s building phase at Wallace Ruin in the eastern Monument-McElmo drainage unit (Bradley 1988), construction of Chaco-style great houses appears to have begun in both the far eastern and the western parts of the study area in the last quarter of the A.D. 1000s, and to have continued into the early 1100s. These structures were not built to a single plan, but contrast strongly with the surrounding "ordinary" habitation sites by having massive masonry walls, blocked-in kivas, and a much higher degree of architectural formality and even ostentation. Most of them have sections that are more than one story in height. Construction appears to have taken place in large, evidently pre-planned blocks, although a number of the late Pueblo II great houses were also modified incrementally in later times by remodeling of existing rooms and the addition of others. Many are located on prominences or divides where they command a large view shed and can be seen from a long distance. Because of massive all-masonry construction and often multiple-story construction, they show up on survey as "big bumps" as opposed to the "small bumps" of the ordinary habitations of late Pueblo II times. Most appear to have been constructed within existing dispersed communities. Masonry-lined, formal great kivas are associated with many if not most of these great houses.

The burst of great house construction in the study area coincides with the major period of construction activity in the San Juan valley and the lower La Plata and Animas drainages of New Mexico, referred to as the "Totah" area by McKenna and Toll (1992). Nearly all of the Totah great houses were built between about A.D. 1080 and 1130 (McKenna and Toll 1992). Major great house construction episodes in Chaco Canyon proper started earlier, reached a peak between about A.D. 1080 and 1100, then declined during the early 1100s; in the Totah, on the other hand, great house construction accelerated after A.D. 1100. The center of the Chaco great house system may have moved from Chaco Canyon to Aztec Ruins on the lower Animas River after about A.D. 1100. The Aztec complex "is one of the largest known in the Anasazi area, rivaling central Chaco Canyon in scale" (McKenna and Toll 1992:137). The excavated buildings on display at Aztec Ruins National Monument represent only a fraction of the total architectural complex, which extends outside the monument onto the higher terraces to the north (McKenna and Toll 1992; Stein and McKenna 1988). Aztec Ruins proper (Aztec West) appears to have been built in the decade 1110-1120; limited excavations at Aztec East have yielded a small number of tree-ring dates indicating construction between A.D. 1112 and 1129; and ceramic dating indicates the principal construction at the Aztec North complex on the terrace above the Monument also dates to the early A.D. 1100s (McKenna and Toll 1992). Given these major developments in the Totah region, it is surprising that so few late Pueblo II sites have been recorded in the La Plata and Animas drainages north of the Colorado line. On the other hand, Hannaford (1993) reports that late Pueblo II sites (dated at A.D. 1025-1125) are common in the La Plata River valley just south of the Colorado state line, and that in the lower La Plata in general, settlement numbers reached a peak during this period.

The Chacoan florescence in the Totah area cannot fail to have had a substantial influence on the existing populations in the study area, especially if the numerous community-center great houses in southwestern Colorado had strong ties to a regional center at Aztec. The rise of Aztec in the early 1100s also meant that the primary locus of Chacoan influence and power was much closer to the communities of southwestern Colorado than had been the case when the center was at Chaco Canyon.

Late Pueblo II great houses in the study area apparently were the focus for a certain amount of long-distance trade, at least as compared with community centers of the Pueblo III period. For example, Eddy (1977:43, 51) reports a few occurrences of Tusayan Black-on-red and Tusayan Polychrome sherds from excavations at the Chimney Rock great house, and of Tusayan Black-on-red

from the Parking Lot site, one of the habitation units in the Chimney Rock cluster. These types are Tsegi Orange Ware, presumably made in the Kayenta area in northeastern Arizona, approximately 200 km (125 mi) away. At the Escalante great house in the Dolores drainage unit, Hallasi (1979:251-261) reports that trade sherds comprised 3.82 percent of the total sherd assemblage and 11.84 percent of the typologically classifiable sherds. These primarily consisted of examples of Tsegi Orange Ware and Tusayan White Ware from the Kayenta area, and lesser amounts of White Mountain Red Ware from the Cibola region in west-central New Mexico. Martin (1936:79-80) also reports examples of Tsegi Orange Ware, Tusayan White Ware, and White Mountain Red Ware from Lowry Ruin.

The relatively high frequency of long-distance trade wares at these sites stands in sharp contrast to the situation at large, late Pueblo III villages such as Sand Canyon Pueblo, where virtually no items from outside the northern San Juan region were found (Lipe 1994b). On the other hand, the amount of extra-regional pottery at the late Pueblo II great house sites does not appear strikingly different from that reported for late Pueblo I villages in the Dolores drainage unit Blinman (1986b). At these sites, San Juan Red Ware sherds from southeastern Utah comprised 4 to 8 percent of the total pottery from screened refuse (Blinman 1986b:676-677) and white ware sherds from outside the northern San Juan ranged from 1 to 4 percent of total white wares (Blinman 1986b:683-684). Investigation of whether the late Pueblo II great houses were part of a social and economic system that facilitated exchange would be furthered by systematic comparisons of types and amounts of extra-regional materials from great house and non-great house sites in the study area.

The great house sites in the study area provide evidence of substantial status differentiation, something rare in the northern San Juan Puebloan sequence. At Dominguez Ruin, a small habitation unit located a stone's throw south of the Escalante great house, an adult female burial was accompanied by "three elaborate pendants, six humerus scrapers, 6,900 turquoise, jet, and shell beads, [and] three turquoise and shell mosaics..." (Reed 1979:101). Furthermore, the great houses themselves are evidently just what this term implies—large, formal, highly visible houses that clearly differentiate those who lived there from the rest of the community. How the associated social system worked remains elusive, but it does appear that the late Pueblo II period saw a level of overt representation of social difference and hierarchy not seen either earlier or later in the Pueblo tradition.

On this last point, Lekson (1999b) argues that Aztec continued to be the primary center of political and cultural influence in the northern Southwest from its founding about A.D. 1100 or 1150 as a successor to Pueblo Bonito on through the late Pueblo III period. He suggests that a sanctified and politically powerful lineage moved from Pueblo Bonito to Aztec in the A.D. 1100s, and then to Casas Grandes in northern Chihuahua about A.D. 1250, where they were responsible for the major growth, reorganization, expansion of the influence of that center. Two of the more persuasive features of his argument are that each of these three centers was the grandest of its time in the Southwest (Pueblo Bonito from A.D. 1000 to 1100/1150; Aztec from 1100/1150 to 1250; and Casas Grandes from 1250 to 1450) and that all three are located within a few hundred meters of a perfectly true north-south axis—the Chaco Meridian—that is traced in part on the ground by the Great North and South roads leading out of Chaco Canyon (Lekson 1999b).

With regard to the proposed Aztec center, the tree-ring record and results of excavations at both Aztec Ruins and Salmon Ruin (east of Farmington, New Mexico) suggest, however, that an occupational hiatus or decline set in at the Totah great houses by about 1130 or 1140, with intensive occupation not picking up again until the very late 1100s or early 1200s. Because only a small part of the Aztec complex has been excavated, it is not possible to demonstrate that a substantial population did not reside there during the middle A.D. 1100s. And a tenacious elite may have been able to hold onto a fair amount of religious and/or political power even if its host community had declined in population.

Lekson's (1999b) hypothesis is discussed further in Chapter 9. In any case, the chronology of the Totah great houses and the nature of the relationships between communities in the study area and those of the Totah region in both the Pueblo II and III periods remain fascinating problems that have yet to be addressed in a systematic way.

The end of the Pueblo II period in the study area is marked by a significant decline in building activity, at least as indicated by numbers of cutting dates (see Figure 8-3). Classic Chaco-style great houses were not built in the study area or elsewhere in the Four Corners area after the A.D. 1130s (although many were reoccupied, and often rebuilt, in the 1200s, and multi-storied buildings having some of the attributes of the classic great houses were occasionally built as parts of larger residential complexes in the Pueblo III period). As discussed in Chapter 9, the period between about A.D. 1150 and 1190 is something of a mystery in the study area, with few well-dated components having been excavated.

## CHRONOLOGICAL INDICATORS

### Dendrochronology

Dated tree-ring samples, when combined with stratigraphic evidence and an analysis of site formation processes, can be used to construct calendar-year chronologies with a resolution of one to a few years for building or remodeling episodes, or in some cases, for the formation of particular deposits. These fine-grained chronologies can date the contexts in which pottery and other artifacts occur, relating particular styles to points in time. Seriations based on stylistic change can also refine chronological sequences that are anchored at various points with tree-ring dates (e.g., Blinman 1986a; Wilson and Blinman 1991a). Varien's (1997) compilation of tree-ring cutting dates from the study area (see Figure 8-3), in addition to being a rough index of construction activity, indicates the number of dates available for particular temporal periods. More dates have been obtained for late Pueblo II than for the earlier part of the period, providing more chronological control for temporal assignment of specific sites and also for temporal calibration of ceramic sequences. A number of tree-ring dated sites and contexts are discussed in various sections of this chapter and need not be repeated here.

### Ceramic Complexes

In the study area, a considerable amount of effort has been devoted to defining and dating pottery types (see. Abel 1955; Hayes 1964; Rohn 1971; Breternitz et al. 1974; Hayes and Lancaster 1975; Blinman and Wilson 1989; Wilson and Blinman 1991a). Wilson and Blinman (1991a) rely on the differing patterns of appearance, growth, and decline of several pottery types to provide a sequence of ceramic complexes that permits a finer chronological resolution than would reliance on any single type. Furthermore, instead of simply averaging the mean dates for the types that occur in an assemblage, they make full use of the chronological information latent in the sequential waxing and waning of the frequencies of a number of types. A new complex is recognized when a new type begins to appear regularly. For Pueblo II, they recognize five complexes, as follows:

A.D. 880-910-(930)—Moccasin Gray remains the dominant neckbanded type, but Mancos Gray is a close second, Chapin Gray is consistently present but in low frequencies. Piedra Black-on-white is the most common white ware type, and some sherds of Cortez Black-on-white will be present, but still not in classic form. White Mesa Black-on-white is present in collections from the western region and may be present as traces in the central region. Bluff Black-on-red continues at the dominant red ware type. Sherd temper appears in a minority of both white and red ware sherds. A significant proportion of the red wares

contain crushed sherd temper, and are assigned to McPhee variety of Bluff Black-on-red. Some red ware sherds with strong slips and fine line work will be classified as Deadmans Black-on-red.

A.D. 910 (930)-980—Gray ware sherds are dominated by Mancos Gray and Moccasin Gray, with some Chapin Gray and the introduction of corrugated gray wares (Mancos Corrugated). Corrugated gray wares are in the minority at the beginning of the period and are in the majority by the end of the period. Cortez Black-on-white is the dominant white ware in the central and eastern region, and White Mesa Black-on-white is the dominant white ware in the west. Deadmans Black-on-red can be the principal red ware but Bluff Black-on-red is still abundant. Sherd temper ceases to form a significant proportion of the red wares but increases its frequency in white ware sherds. Slipping becomes more common in white wares.

A.D. 980-1025—Gray wares are dominated by corrugated sherds, all or almost all from Mancos Corrugated vessels. Mancos Gray and Plain Gray are present, the latter in moderate quantities, but Moccasin Gray is rare to absent. Cortez Black-on-white and Mancos Black-on-white are both present, with Cortez Black-on-white dominant in the early portion of the period and Mancos Black-on-white dominant in the later portion. All red ware sherds are from San Juan Red Ware types, and Deadmans Black-on-red vessels account for most or all of the sherds.

A.D. 1025-1100—Gray wares are dominated by corrugated sherds, most of which are from Mancos Corrugated and some of which are from Dolores Corrugated vessels. Plain Gray and Mummy Lake Gray sherds may be present in small quantities. Cortez Black-on-white is usually present, but Mancos Black-on-white sherds are the most common white ware type. Almost all of the Mancos Black-on-white sherds are decorated with mineral paint. Most red ware sherds are from the Mesa Verde region, but traces of Tsegi Orange Wares may be present. Toward the end of this period (A.D. 1075-1100), Dolores Corrugated Sherds, organic-painted Mancos Black-on-white sherds, and Tsegi Orange Wares become more common.

A.D. 1100-1140—Dolores Corrugated is the dominant corrugated vessel form, although sherds of both Mancos Corrugated and Mesa Verde Corrugated may be present. Mummy Lake Gray and Plain Gray sherds are present in small quantities. Mancos Black-on-white is the predominant white ware type, and some examples may be executed in organic paint. McElmo Black-on-white is present in most collections. Red ware sherds are dominated by Tsegi Orange Wares, but not to the exclusion of San Juan Red Wares; White Mountain Red ware sherds may be present but are rare [Wilson and Blinman 1991a:46].

The “910-(930)” dates used in the first two periods reflect lack of good chronological control over type changes during the early 900s, particularly the date at which corrugated pottery appears. On the basis of a Southwest-wide study of the introduction of the corrugated style, Pierce (1999) favors a date of around A.D. 930 for the beginnings of corrugation in the study area.

### **Projectile Point Styles**

Bradley (1988:24; Schwab and Bradley 1987:48) proposes that the typical early Pueblo II projectile point style is a small, corner-notched arrow point with prominent notches, a slightly convex base, and a narrow stem. It contrasts with Pueblo I styles, which typically have large tangs and a small,

sometimes contracting stem. In late Pueblo II or early Pueblo III times, the dominant style becomes a triangular, unstemmed arrow point with a straight, slightly convex, or slightly concave base, and very small side notches (Bradley 1988). Several examples of the latter type were found at the Escalante site, which is fairly well dated to the early A.D. 1100s (Hallasi 1979:267). Examples from middle to late Pueblo III contexts are shown in the Mug House report (Rohn 1971:Figure 128a-l).

### **Architectural Characteristics**

Varien (1999a) has recently summarized temporal trends in architecture of the Mesa Verde region for the late Pueblo I through Pueblo III periods, as well as recent data from test excavations at a number of late Pueblo II and Pueblo III sites in the Sand Canyon locality of the Monument-McElmo drainage unit. In the paragraphs below, architectural changes that have particular bearing on the Pueblo II period are discussed.

The use of masonry, both for construction of surface rooms and as a lining for kivas, generally increases through the Pueblo II period, but there is a great deal of variability in occurrence. On the Mesa Verde proper, a high frequency of the Pueblo II sites have masonry construction, whereas contemporaneous sites in the Yellow Jacket locality usually have surface rooms constructed of jacal (Morris 1991:659-661). For example, several mid-Pueblo II period sites excavated in advance of construction of the Dolores Project South Canal had earthen-walled kivas, mealing rooms, and/or pit rooms, as well as post-and-adobe-walled surface structures (Kuckelman and Morris 1988). Tree-ring dates at one of these sites, Bindweed House, show that it had construction as late as A.D. 1071 (Morris 1988a).

Masonry walls a single stone wide appear in the Pueblo I period, and occur at many Pueblo II sites, becoming generally more common through time. Varien (1999a) argues that the first consistent use in the area of walls two stones wide occurs with the construction of Chaco-style outliers in the very late A.D. 1000s and early 1100s; after the late A.D. 1000s, it occurs occasionally at habitation sites.

Kiva architecture generally shows a trend 1) from unlined to masonry lined; 2) from four posts set in the wall or bench to four masonry pilasters set on the bench to six masonry pilasters set on the bench; and 3) from no southern recess or a short rounded southern recess to a deep, well-defined keyhole-type southern recess. These changes are not as uniform and temporally correlated as is suggested in early discussions by Roberts (1939b), Lancaster and Pinkley (1954), and Brew (1946:203-214).

Subterranean or semisubterranean mealing rooms (Mobley-Tanaka 1997a) appear in Pueblo II times in the study area, and occur at many, but not all, Pueblo II habitation sites. They are less common in early Pueblo III contexts (see Morris 1991:81-88), and do not appear to occur in late Pueblo III. Mealing rooms are small, usually unlined, pit structures, with one or several metates set in grinding bins on the floor.

“Pecked-face” or “McElmo style” masonry may occur as early as the late A.D. 1000s on the Mesa Verde proper (Lancaster and Pinkley 1954; Hayes and Lancaster 1975). It does not occur at all sites or in all parts of the study area in late Pueblo II times, and in general, does not become common until Pueblo III.

Some of the variability in architectural characteristics may relate to environmental factors; for example, use of masonry rather than jacal may relate to the relative ease of acquiring building stone versus wood for posts. On the other hand, in late Pueblo III times, masonry was generally used to

construct walls, regardless of environmental context. Probably more important in accounting for architectural variability were factors such as local styles, site function, and local population density. Subjectively, settlements in long-occupied areas of high population density such as the Mesa Verde are more likely to have a high investment in facility construction, which translates to more use of masonry and a higher degree of formality and uniformity in construction and structure types. This may relate both to a longer anticipated use life for structures and hence greater initial investment in building them, and to the use of standing masonry structures as indicators of land ownership or control, even when these have been abandoned or are being used only seasonally (Kohler 1992a). Morris (1991), following Fuller (1988d), makes a distinction between primary habitations, which are usually multiple households, and more briefly occupied secondary habitations, which may represent newly established single households. The former seem generally to display more formality and greater investment in architecture.

## REGIONAL SITE DISTRIBUTION AND POPULATION

Table 8-3 shows that the distribution of sites among the drainage units in the Pueblo II period is strongly skewed toward the western units, though not quite so strongly as in Pueblo III (Table 9-3). As compared with the Pueblo I period (Chapter 7), this represents a dramatic westward shift. In Pueblo I, the Upper San Juan, Animas, and La Plata drainage units accounted for 17.3 percent of all sites recorded for that period in the study area. In Pueblo II, by contrast, these three drainage units dropped to 5.6 percent of the total, and all three units had fewer Pueblo II than Pueblo I sites. In the western area, the Dolores drainage unit dropped from having 13.9 percent of the total sites in Pueblo I to 4.8 percent in Pueblo II. The Mesa Verde-Mancos and Monument-McElmo units became more dominant, accounting for 83.4 percent of the total sites, as opposed to 67.0 percent in Pueblo I. As compared with the other drainage units, both the Mesa Verde-Mancos and the Monument-McElmo areas have more extensive upland loess soils at moderate elevations. These soils are good for dry-farming if rainfall is adequate. The Dolores valley and Dolores rim provide relatively high elevation, cool environments, as do significant portions of the more mountainous eastern units. The changes in site distribution from Pueblo I to Pueblo II may also represent a shift away from cooler settings. In Pueblo II, the Ute drainage unit gains site numbers and proportions. The Ute Mountain piedmont and other parts of this unit are probably arable only with the assistance of runoff and flood water farming techniques. If summer rainfall was relatively strong during Pueblo II, it might have made such areas more attractive, as discussed earlier. A strong summer rainfall pattern, coupled with adequate amounts of late winter-early spring precipitation to build up stored soil moisture, would have made the intermediate-level highlands attractive for dry-farming.

Table 8-4 is based on a recent systematic effort by Richard Wilshusen (1996) to estimate the size of prehistoric populations in southwestern Colorado through time. His estimates apply to an area that approximates the Mesa Verde-Mancos, Ute, Monument-McElmo, and Dolores drainage units of the present study. He relies on data from large surveys done in the Wetherill Mesa, Sand Canyon, Mockingbird Mesa, and Dolores areas and extrapolates population densities for those areas to the other agriculturally suitable portions of southwestern Colorado. The recognition of components and the dating assignments are those of the archaeologists who have analyzed and reported on the surveys. For the Pueblo II period, he uses both "conservative" and "liberal" estimates of the use lives of habitation sites, and also recognizes that site use life probably increased during the period. Hence, his "conservative" estimates assume a 12.5 year use life for habitations that pre-date A.D. 1120 and a 20-year use life for those dating from A.D. 1120 to 1160. His "liberal" estimate assumes 25 and 40-year use lives for the same time spans.

**Table 8-3. Distribution by Drainage Unit of Pueblo II Period Components in the Study Area.**

	USJ- Piedra	Animas	La Plata	M.V.- Mancos	Ute	Monu- McElmo	Dolores
<b>Pueblo II Habitations</b>	145	10	15	2,340	243	1,518	170
<b>Pueblo II Non- Habitations</b>	95	18	19	118	96	467	84
<b>Pueblo II Site Totals</b>	240	28	33	2,458	339	1,985	254
<b>% of All Sites</b>	4.50	0.52	0.62	46.06	6.35	37.20	4.76

**Table 8-4. Average Momentary Population Estimates for Southwestern Colorado, A.D. 880-1160 (from Wilshusen 1996).**

	A.D. 880-920	A.D. 920-960	A.D. 960-1000	A.D. 1000-1040	A.D. 1040-1080	A.D. 1080-1120	A.D. 1120-1160
<b>“Conservative” estimate</b>	1,680	3,366	4,929	5,337	5,711	8,810	12,132
<b>“Liberal” estimate</b>	3,417	7,333	9,858	10,731	11,423	17,675	24,320

Wilshusen’s figures are average momentary population estimates; that is, they represent the average number of people in the area at any given time during a 40-year interval. Such an average will not show whether population fluctuated greatly or was stable during a 40-year period. In general, Wilshusen’s figures agree with the inferences about demographic change through time that are presented in the Overview section of this chapter. For example, he estimates that at the peak of the late Pueblo I villages in the area (A.D. 840-880--not shown in Table 8-4) the population was 4,937 or 9,990, depending on whether the conservative or liberal assumptions are used. Therefore, the figures for the A.D. 880-920 period that are shown in Table 8-4 represent a significant drop in population between late Pueblo I and early Pueblo II period. This low point is followed by gradual growth in the later 900s and early 1000s, and a large increase in the late 1000s and early 1100s.

As suggested by the rates of construction beam cutting shown in Figure 8-3, the actual fluctuations in population may have been somewhat more dramatic, with fewer people during the early 900s, a more rapid rise after 1000, and probably another decline starting about A.D. 1140. The surveys on which Wilshusen necessarily relied dated sites on the basis of patterns of pottery type occurrence. Possible problems with distinguishing pottery assemblages dating to the 900s from those dating slightly earlier and later have already been reviewed, following Blinman (1991), and similar problems may also be present in the middle A.D. 1100s. Hence, there is some possibility that the methods used to assign sites to the periods used in Table 8-4 may not be sensitive enough to capture relatively short-term

fluctuations in regional population. This is not to question the validity of Wilshusen's approach; it makes careful and appropriate use of existing data.

Duff and Wilshusen (1999) have recently reviewed the evidence for population size and change in the study area, including many of the issues raised in the preceding paragraphs. They take into account additional lines of inference, including a consideration of what population growth rates might realistically be assumed for the area. Their overall conclusions regarding the Pueblo II period support the general patterns shown in Table 8-4, but indicate that the area's population may have reached only 4,500 to 8,900 people by A.D. 1150.

## POPULATION MOVEMENT AND ENVIRONMENTAL CHANGE

Assuming there were population movements out of the western part of the study area at the end of the A.D. 800s and back into it in the late 900s and early 1000s, do these movements correlate with any regional climatic changes? It appears that they may. Petersen's (1988:93) reconstruction of rainfall and temperature for the La Plata Mountains and vicinity indicates that winter precipitation (inferred from the ratio of spruce to pine pollen at the lower timberline) decreased through the A.D. 800s to a low around 900, and then gradually increased again, with substantially wetter winters in the A.D. 1000s. Summer precipitation (as inferred from influx of pinyon pine pollen) remained high from approximately the mid-700s to the early 1100s. Assuming his pollen samples are properly dated, this suggests that substantial climatic change occurred during the Pueblo II period. Extrapolating from high-elevation tree-ring records, Petersen (1988) also proposed that growing season temperatures were low in the late A.D. 800s, which might have made upland dry-farming more risky.

Wilshusen and Wilson (1995; also see Wilshusen and Ortman 1999) discuss a hypothetical scenario that correlates with Petersen's (1988) reconstruction (also see Chapter 2 by Adams and Petersen, this report). Wilshusen and Wilson propose that substantial populations of late Pueblo I upland dry-farmers in the western part of the study area moved south and southeastward to somewhat lower elevations at the end of the A.D. 800s. Such movements would follow both warmth (lower elevations) and summer rainfall, the reliability of which typically increases along a north to south gradient. The transitional Pueblo I-Pueblo II communities documented by Wilshusen (1995) in the Cedar Hill region between the Colorado border and Aztec, New Mexico, appear to fit this scenario; they almost certainly were dependent on runoff farming rather than on direct rainfall. The settlements in Chaco Canyon, in the center of the San Juan Basin, evidently also flourished during the A.D. 900s. The earliest construction of large, Bonito phase room suites appears to have been at Pueblo Bonito in the middle to late A.D. 800s, approximately contemporaneous with the largest Dolores area Pueblo I villages (Windes and Ford 1996). Construction continued at the early Bonito phase great houses during the 900s (Windes and Ford 1992, 1996; Judge et al. 1981).

The "paleohydrologic curve" developed by Dean et al. (1985) largely on the basis of geoarchaeology in the Black Mesa region agrees in general with Petersen's reconstruction (Petersen 1988; also Adams and Petersen, Chapter 2). It shows low water tables and alluvial degradation in the A.D. 800s and early 900s, shifting to high water tables and aggradation in the late 900s and 1000s. If strong summer precipitation is what drives degradation, and strong winter precipitation is responsible for the shift to stream aggradation, the two models are approximately congruent.

The climatic reconstruction of Schoenwetter and Eddy (1964; Eddy 1972, 1974) applies to the Navajo Reservoir District and USJ-Piedra drainage unit just to the north. Schoenwetter and Eddy (1964) propose that the onset of stronger summer precipitation at about A.D. 800 resulted in stream entrenchment that drove flood plain-dependent agricultural populations upstream in the San Juan and

Piedra drainages, resulting in abandonment of the Navajo Reservoir area by A.D. 950 or 1000, and the growth of Arboles phase populations in the USJ-Piedra drainage unit during the late A.D. 900s and early A.D. 1000s. According to the Dean et al. (1985) reconstruction, however, there should have been a shift to alluvial aggradation by the late A.D. 900s. It is possible that both reconstructions are correct, but that they apply at different geographic scales, or that neither is correct with respect to the extreme eastern part of the study area. This area shows evidence of population movement to higher elevations in the A.D. 900s, when populations in the western part of the study area seem to have moved to lower elevation areas to the south and southeast.

## SITE TYPES

### Homesteads and Hamlets

Throughout the study area (including the Arboles phase settlements of the Upper San Juan-Piedra drainage unit), the basic “building block” of habitation sites is the “unit-type pueblo” recognized by Prudden (1903), later referred to as the “habitation unit” by Bullard (1962). As previously noted, this unit consists of a kiva or pithouse, a small closely associated block of surface living and storage rooms, and a midden. Occasionally other structures and features may be present, including a semisubterranean grinding room, exterior pit features, post-supported ramadas, and/or a post stockade. The relative frequency with which these elements appear varies from locality to locality within the study area. The authors consider a site with a single pit structure a “homestead” and one with several pit structures a “hamlet.” If the total number of surface rooms and pit rooms exceeds about 50, the site is ordinarily called a “village.”

An example of a homestead that dates to the early A.D. 1000s is Dobbins Stockade (5MT8827), reported by Kuckelman (1988a). This small habitation is located in the Monument-McElmo drainage unit near Pleasant View, Colorado (Figure 8-4). Tree-ring dates indicate construction was probably in the A.D. 1020s or 1030s. The primary habitation area is surrounded by a post stockade. Withes would presumably have been interlaced horizontally around the posts to fill the spaces between them. There are two earthen-walled pit structures—a probable kiva and a probable grinding room—and evidence of at least three surface rooms of post-and-adobe construction inside the stockade, plus an amorphous surface room attached to the outside of the stockade. There is a large bell-shaped storage cist in the plaza or courtyard and another one attached to the pit structure ventilator shaft. The probable kiva has a bench and four support posts set in the corners of a rectangular floor plan. Most other early Pueblo II kivas have circular floor plans. For example, Morris (1986b) reports the excavation of a circular, earth-lined kiva with six masonry pilasters at Aulston Pueblo, located near Yellow Jacket in the Monument-McElmo drainage unit (Figure 8-5). The kiva roof fall at Aulston yielded a cutting date of 1040rB and two clusters of “v” or “vv” dates, one in the early 1040s, and one in the mid-1030s. Also in the Monument-McElmo unit is Dripping Springs Stockade (5MT2527), where Harriman and Morris (1991) report a circular kiva with four posts set in the walls; tree-ring dates indicate construction after A.D. 1043, and ceramic cross dating indicates site occupation between A.D. 1025 and 1075.

Figure 8-6 displays an example of a probably late Pueblo II homestead—site 5MT8943, reported by Errickson (1993:159-248). It is located southwest of Towaoc, Colorado, on the Ute Mountain piedmont in the Ute drainage unit, and was excavated to mitigate the impacts of construction of Reach III of the Towaoc Canal, one of the Dolores Project’s water delivery features. Architectural features include a masonry-lined kiva with a southern recess and a subfloor ventilator tunnel, a small block of surface rooms showing both masonry and jacal construction, a mealing room (Room 8), several small pit rooms, several ramadas, and a variety of extramural pits (Errickson 1993). The fill of Surface Room 11 yielded a cutting date of 1067+B. The latest of the five dated tree-ring samples from the site was 1099+vv from a

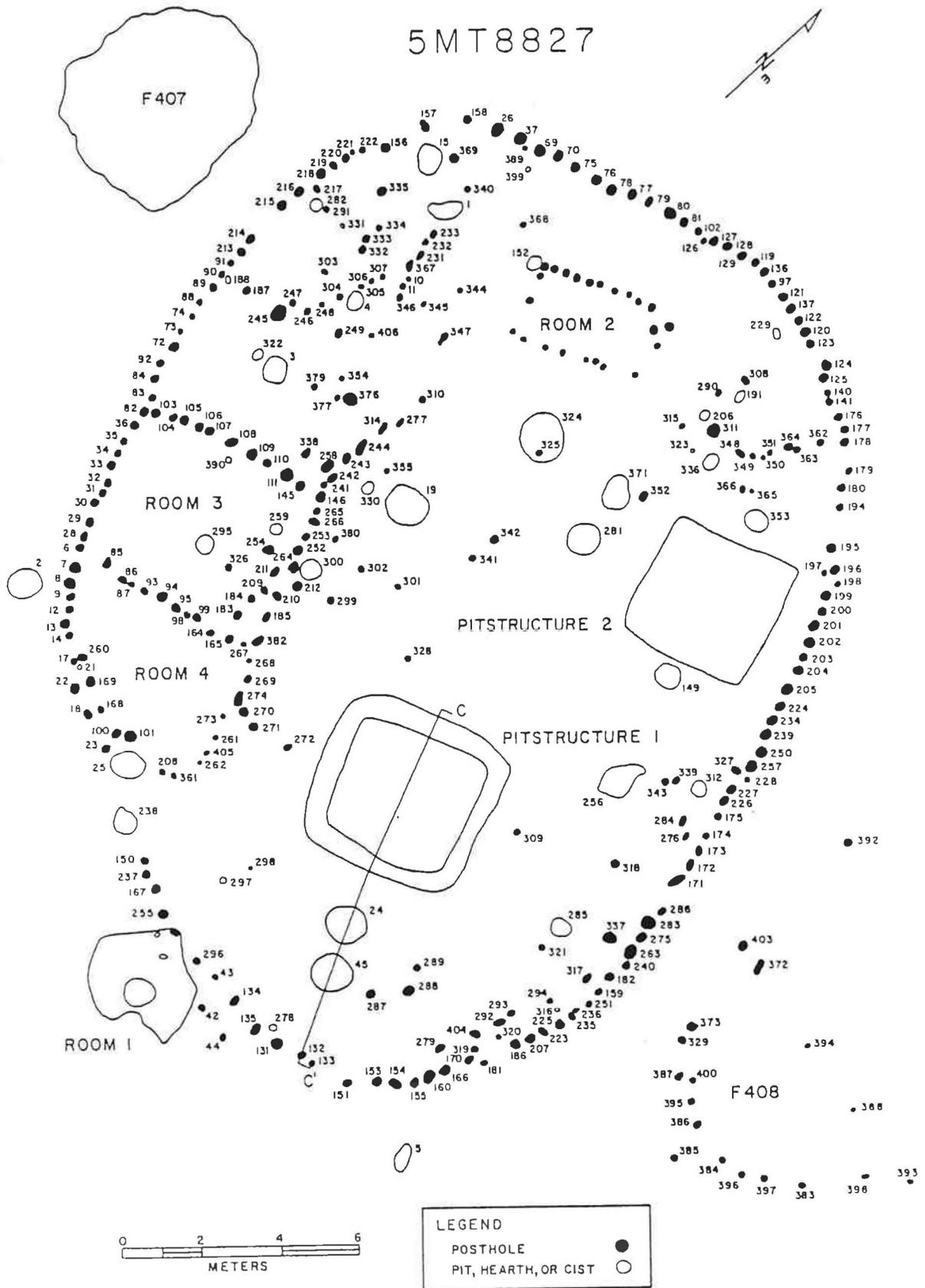


Figure 8-4. Plan map of Dobbins Stockade (5MT8827) (after Kuckelman 1988a).

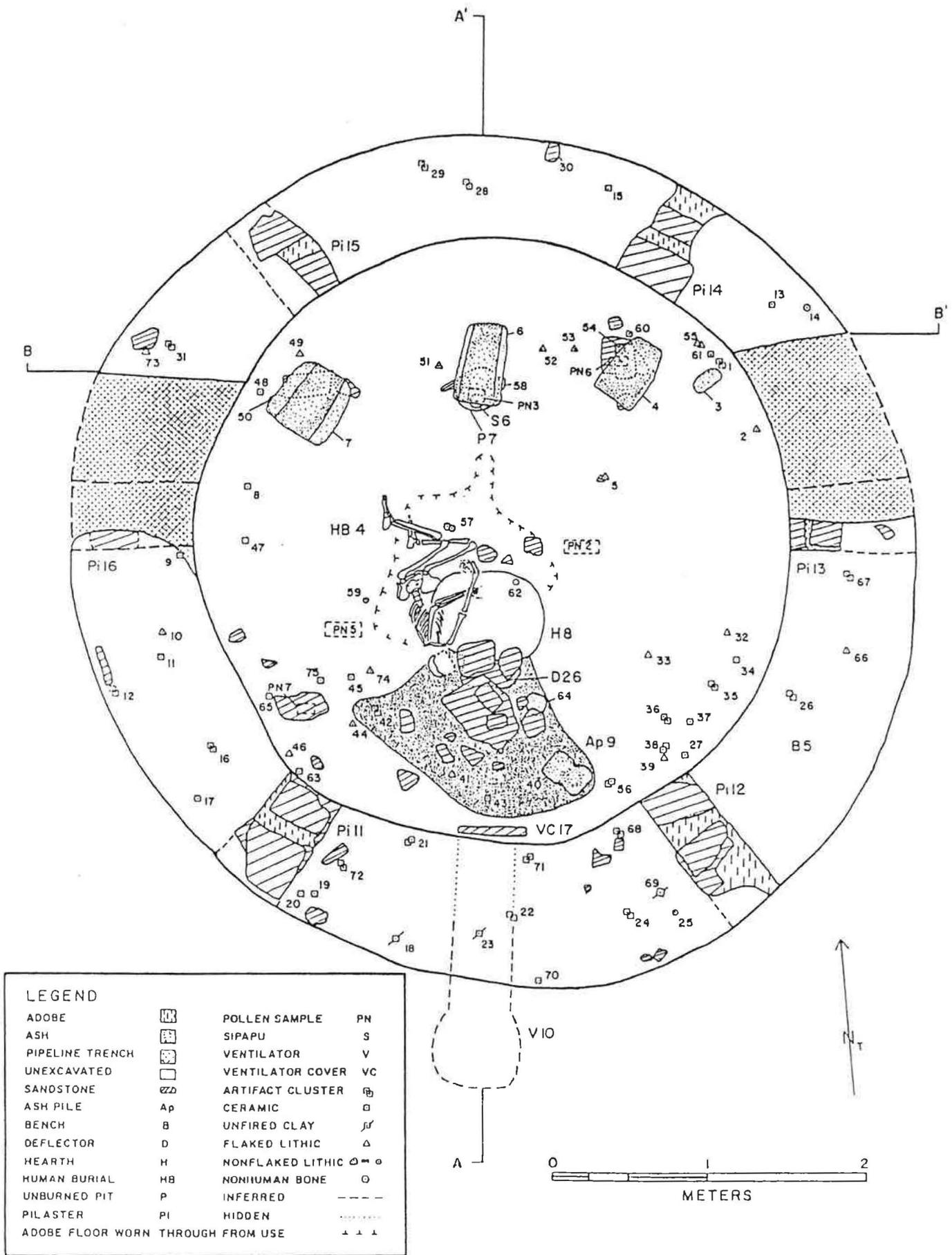


Figure 8-5. Plan map of kiva at Aulston Pueblo (5MT2433) (after Morris 1986b).

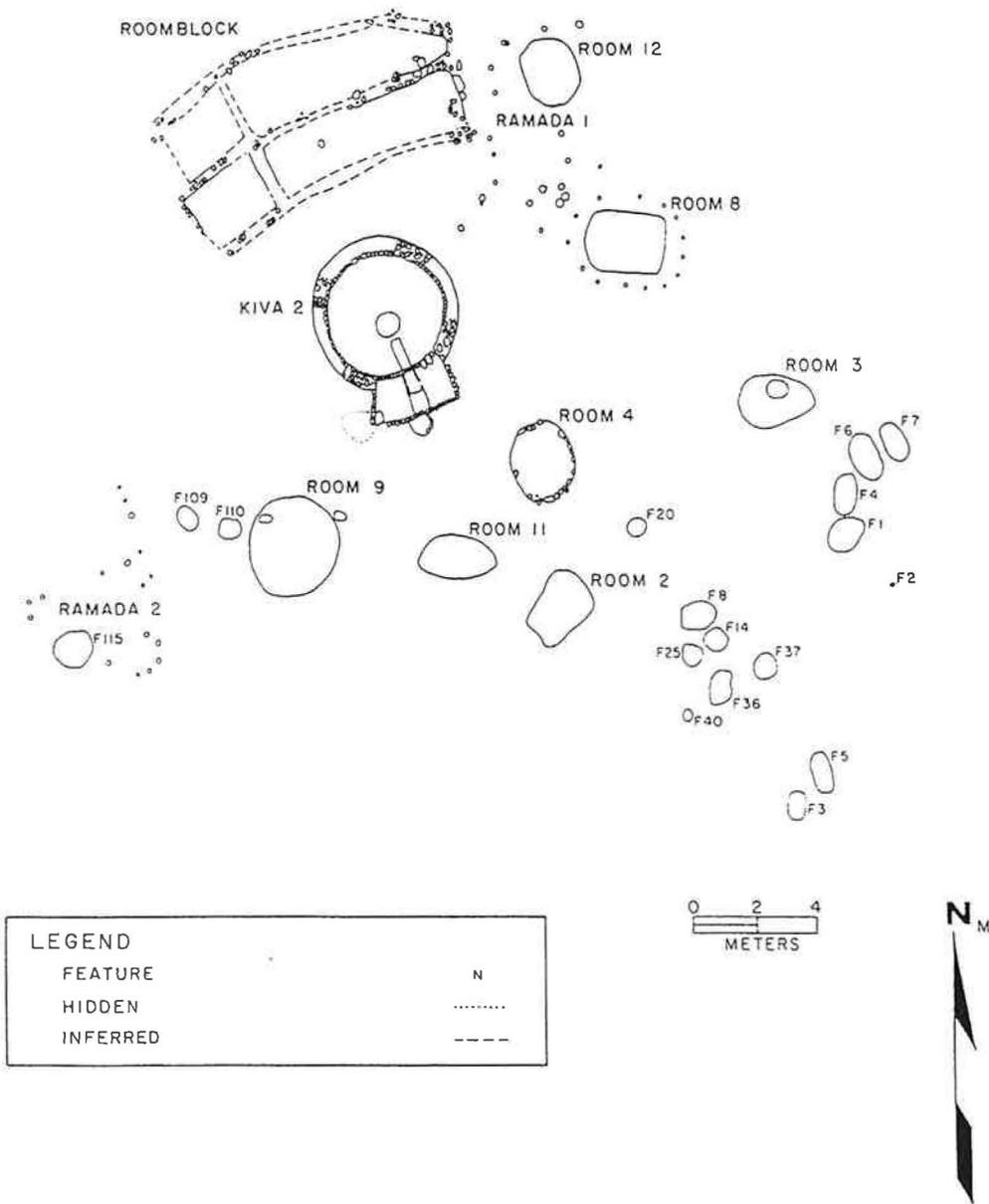


Figure 8-6. Plan map of site 5MT8943 (after Errickson 1993).

burned post in one of the ramadas. Errickson (1993:246) argues that these dates and the characteristics of the ceramic complex indicate that the late Pueblo II occupation at the site fell between A.D. 1050 and 1125. There also appears to have been a brief use of the site in the A.D. 1200s.

A somewhat later homestead is site 5MT10206 (Errickson 1993:287-329), located on the Ute Mountain piedmont in the Ute drainage unit approximately 10 km (6.2 mi) southwest of Towaoc. Its small size and unelaborate architectural features demonstrate the considerable variability present in Pueblo II residential sites in the western part of the study area. More than 40 dated tree-ring samples were obtained from several contexts at 5MT10206. They indicate initial construction at A.D. 1129, with remodeling of the kiva in 1130 and again in 1147. Architectural features include a small earthen-walled kiva with four masonry pilasters set on the bench, a subterranean pit room that probably functioned as a mealing room or a storage structure, a very small (1 x 1.8 m) semisubterranean room probably used for storage, and a surface room of masonry construction. Despite dendrochronological evidence of more than brief use of the site, there was only a thin accumulation of midden. Errickson (1993:328) suggests that the site may have been occupied only seasonally, perhaps as a winter residence. The end of occupation was marked by violence, with evidence that several humans had been dismembered and possibly cannibalized (see Dice 1993b:49-67).

The range of variability in the architecture and layout of late Pueblo II homesteads is also demonstrated by the results of the excavation at 5MT10820 (Fetterman and Honeycutt 1995), located near Pleasant View in the Monument-McElmo drainage unit. Here, the principal habitation structure was an unlined pit structure with "kiva features" including a partial bench, an irregular southern recess above a ventilator tunnel, a central hearth, a sipapu north of the hearth, and two wall niches. A very large storage cist is built into the northern wall of the pit structure; it also could be accessed from the surface outside the pit structure. Fetterman and Honeycutt (1995:6-4) argue that the structure was probably roofed by placing horizontal beams on the ground surface at the edge of the pit and then covering these beams with smaller branches or brush and then a layer of earth derived from excavation of the pit. Just north-northeast of the pit structure is a shallow pit room of irregular plan with a wall cist and a wall recess. No evidence of how the superstructure was built was recovered. Because the site had been plowed, it is possible that evidence of other surface structures had been destroyed. A large number of burned and unburned pit features were recorded in the area west, north, and east of the pit structure and associated pit room. No tree-ring dates were obtained, but the pottery assemblage from the site provides a good basis for estimating that the occupation fell between about A.D. 1100 and 1140 (Fetterman and Honeycutt 1995:6-33).

A contrasting example of residential architecture provided by a multiple-household late Pueblo II hamlet is Big Juniper House (Figure 8-7), excavated as part of the Wetherill Mesa project (Swannack 1969). Swannack (1969:179) infers that Kiva A and some of the surface rooms were used as early as A.D. 1050, but that the principal occupation was from A.D. 1080 or 1100 to 1130. The latest cutting date at the site is 1130B, from the floor fill of Kiva B (Swannack 1969:183). Swannack (1969:56) thinks this tree-ring sample was introduced with fill deposited after the kiva's abandonment. He suggests that the "later walls" noted in the plan map (see Figure 8-7) may have been built in the middle 1100s over Kivas A and B and in the area north of Rooms 5 and 24 (Swannack 1969:179). In general, the use of masonry for surface room walls and to line kivas appears to be more frequent on the Mesa Verde proper than elsewhere in the western drainage units. Elsewhere, it is not uncommon for late Pueblo II kivas to have only partial masonry lining, or to be unlined, and for surface rooms to be of jacal construction or mixed masonry and jacal.

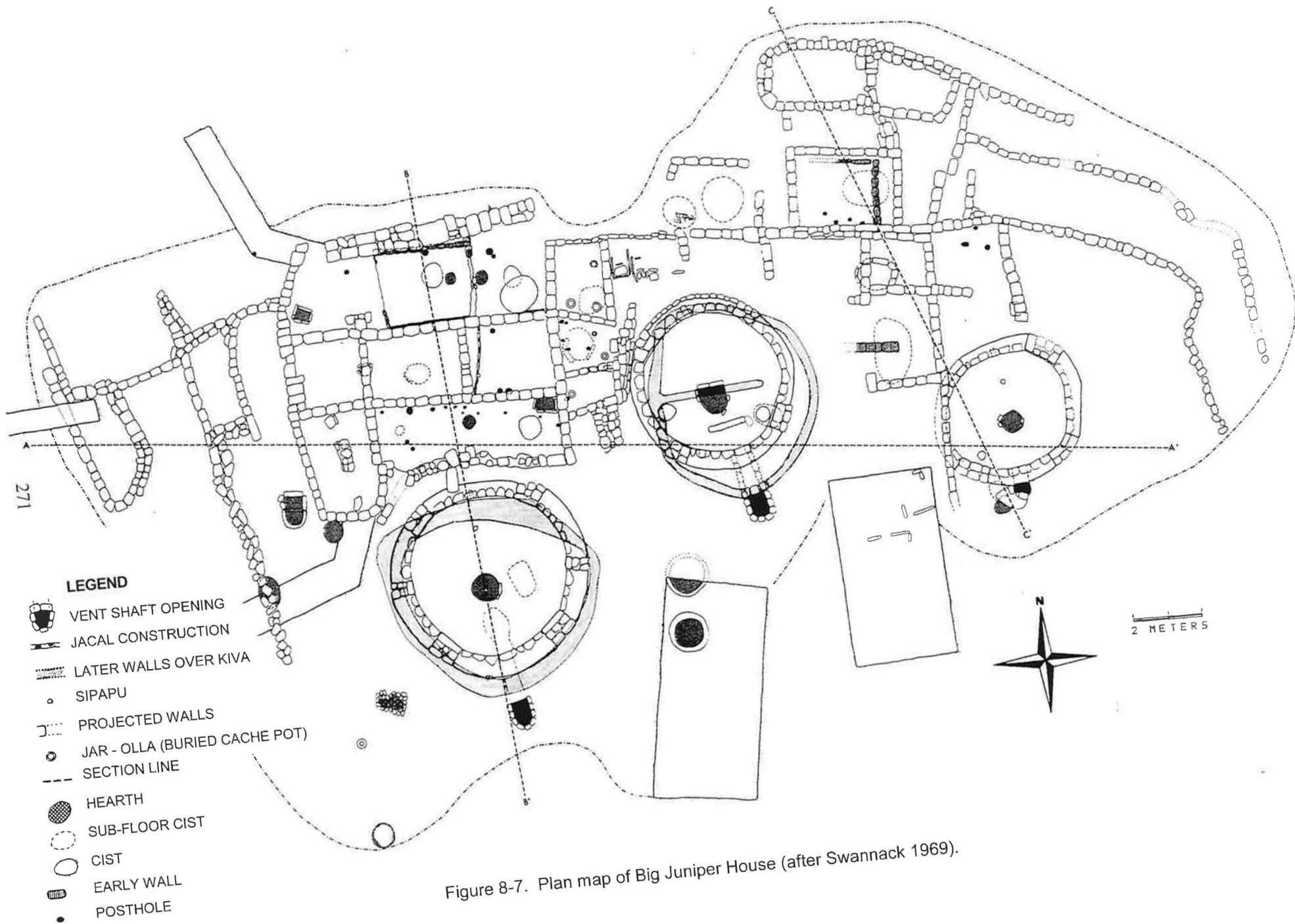


Figure 8-7. Plan map of Big Juniper House (after Swannack 1969).

## Chaco-style Great Houses

Chaco-related great houses often appear to have functioned as central places in an otherwise dispersed late Pueblo II community. They often have associated great kivas and earthworks of various types. In a few cases, a great house was established within an existing village-sized aggregation of small residential units. In other cases, aggregation appears to have occurred around the great house after it was established. Late Pueblo II communities are not coextensive with the nuclear aggregate, but have small additional settlements more or less widely dispersed around the residential nucleus.

There are four well-dated, excavated Chaco-era great houses in the study area: Lowry Ruin (Martin 1936) and Wallace Ruin (Bradley 1974, 1988) in the Monument-McElmo drainage unit; the Escalante site (Hallasi 1979) in the Dolores unit, and Chimney Rock Pueblo (Eddy 1977) in the Upper San Juan-Piedra.

At Wallace Ruin, Bradley (1988) reports that the first building phase consisted of a small complex of multistoried rooms built with a spalled-slab type of masonry. Tree-ring samples from "beams derived from the top story ceiling" yielded a cluster of 11 cutting dates at A.D. 1045, with additional dates at A.D. 1035, 1037, and 1071 (Bradley 1988:11). If this part of the site was built in A.D. 1045, this is by several decades the earliest date so far for Chaco-era great house construction in the study area. The presence of a 1071 date raises the possibility that the A.D. 1045 cluster represents a group of beams recycled from an earlier structure in the area, and that building phase 1 did not occur until the A.D. 1070s. The majority of the architecture at Wallace Ruin is from building phase 3, which on the basis of several lines of evidence, Bradley thinks dates to the late A.D. 1000s and/or early 1100s. There were no cutting dates from this building phase, but a number of noncutting dates fell in the middle to late 1000s and early 1100s. Bradley (1988:15) cites a personal communication from William Robinson of the Laboratory of Tree-Ring Research to the effect that on some samples, the "number of probable missing rings indicates that construction probably occurred in the first or second decade of the A.D. 1100s."

Building phase 3 left Wallace Ruin as a multistoried rectangular room block with approximately 70 rooms, two (and perhaps three) blocked-in kivas, and wings extending south from either end of the room block to flank a plaza that was enclosed by a low wall joined to the flanking wings. Bradley (1988:13) states that the "floor plan is similar to that of Wijiji in Chaco Canyon, which was constructed as a single unit between A.D. 1115 and 1120." He notes but does not describe "possible road entry features" at the site (Bradley 1988:29). Wallace is part of the Lake View group (Powers et al. 1983:163-167) that also includes the Ida Jean and Haney Ruins, the latter now largely destroyed. Ida Jean is a multistoried site similar to Wallace in floor plan; one of the kivas is reported to have yielded several cutting dates at A.D. 1124, and a great kiva depression is reported to exist just southwest of it (Powers et al. 1983:164-167).

Analysis of the tree-ring dates from the Lowry Ruin (5MT1566) indicates that the nucleus of the surface pueblo and the great kiva were built in A.D. 1085-1090 and that there was additional building in the period A.D. 1106-1120 (Ahlstrom 1985:337-340). An isolated cutting date of 1172r indicates that the great kiva continued in use or was rehabilitated in the late A.D. 1100s (Ahlstrom et al. 1985). Evidence from the main room block also indicates some level of continued occupation in the middle or late A.D. 1100s and perhaps in the 1200s as well (Powers et al. 1983:170-174). Lowry is roughly rectangular in plan with both two-story and single-story sections. The Chacoan era construction consists of approximately 34 rooms, three kivas, and a great kiva. Portions of the building appear to have grown by accretion, and overall, the structure as it appears today does not demonstrate the degree of architectural formality or planned construction seen in the majority of great houses, perhaps because of a long use history.

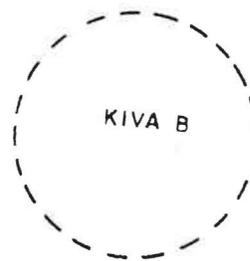
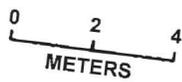
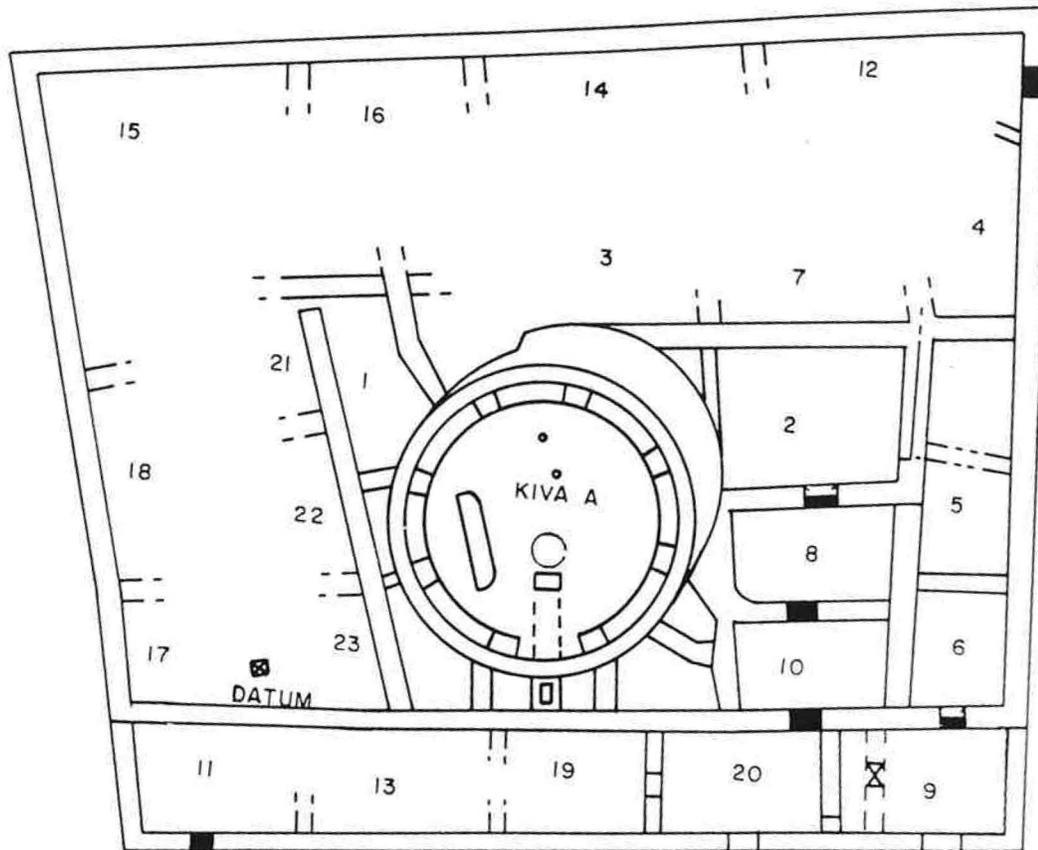
Lowry Ruin is part of an extensive complex of sites (Rohn 1984) that Ferguson and Rohn 1987:41, 126-127) refer to as "Lowry Town." This complex undoubtedly was central to a larger, more widely dispersed community in both Pueblo II and III periods. The Lowry site complex includes traces of several roadways, as well as the unexcavated North Great House (5MT839) located several hundred meters northeast of Lowry Ruin proper. The North Great House appears to have been as large or larger than Lowry Ruin. In addition to a number of other habitation sites, the Lowry complex includes shrines, a reservoir, agricultural terraces, and rock art sites (Rohn 1984).

The Escalante site is a small great house even by southwestern Colorado standards (Figure 8-8)—approximately 25 rooms and one Chaco-style intramural kiva in a compact, one-story structure with a square floor plan (Hallasi 1979; Powers et al. 1983:167-170). No evidence of an associated great kiva has been found. Tree-ring, ceramic, and stratigraphic dating evidence from this site is somewhat contradictory (Hallasi 1979), but there is a strong cluster of cutting dates from Room 20 at A.D. 1129 and a weak cluster from Kiva A in the late A.D. 1130s (Ahlstrom 1985:340-341). Ceramic evidence suggests that occupation may have begun somewhat earlier than the late 1120s. The tree-ring evidence from the 1130s indicates that construction or remodeling continued a few years later at Escalante than at the other excavated late Pueblo II Chaco-style great houses in the study area. Several of these sites (i.e., Wallace and Lowry) show evidence of reoccupation during the Pueblo III period, but Escalante and Chimney Rock do not.

Chimney Rock Pueblo (Eddy 1977) is a rectangular, two-storied structure with an enclosed court comprising one corner of the rectangle; it has an estimated 55 rooms and two blocked-in kivas (Figure 8-9). It is located on a narrow saddle on a high mesa with a commanding view of the Piedra and Stollsteimer creek drainages. This great house has a single cutting date from the ventilator tunnel of the East Kiva at A.D. 1076 and a strong cutting date cluster from Room 8 at 1093; another cutting date of 1093 from the East Kiva is interpreted by Eddy as the result of remodeling or rebuilding the kiva (Ahlstrom 1985:333-337). On the basis of associated ceramics, Eddy (1977) argues that the occupation of Chimney Rock Pueblo probably extended to about A.D. 1125. On and around the mesa are numerous, thick-walled habitation units that appear to be contemporaneous with the great house. These are described below as part of the characterization of the village site type.

Another excavated site with possible great house characteristics is Far View House on Chapin Mesa in Mesa Verde National Park. It is two-storied in part with several blocked-in kivas, and is at the center of a cluster of Pueblo II and Pueblo III habitations. Far View House was probably constructed in the late Pueblo II period, but was extensively rebuilt in the A.D. 1200s. The excavation reports are too sketchy to permit reconstructing the building episodes (Fewkes 1917, 1922). Tree-ring samples from the site show cutting dates in both the A.D. 1000s and 1200s. The only cluster of cutting dates is from Room 33. There are four 1059r dates and one at 1059+r (Robinson and Harrill 1974:60).

On the basis of surface evidence, many of the unexcavated Chaco-style great houses in the study area appear to have continued to be used or to have been reoccupied in the A.D. 1200s. Of the excavated sites, Wallace Ruin shows a heavy late occupation, probably in the 1200s (Bradley 1988), and Lowry also saw continued use after 1150. Chimney Rock Pueblo and the Escalante site do not appear to have had significant occupation after A.D. 1130 or 1140, respectively. The Dolores drainage unit, where the Escalante site is located, had a low population in the Pueblo III period, and the USJ-Piedra unit, where Chimney Rock occurs, was essentially depopulated at the end of late Pueblo II.



-  Open doorways
-  Sealed doorways
-  Wall openings
-  Partially sealed doorways
-  L-Bond
-  T-Bond
-  Abutment

Figure 8-8. Plan map of Escalante site (after Hallasi 1979).

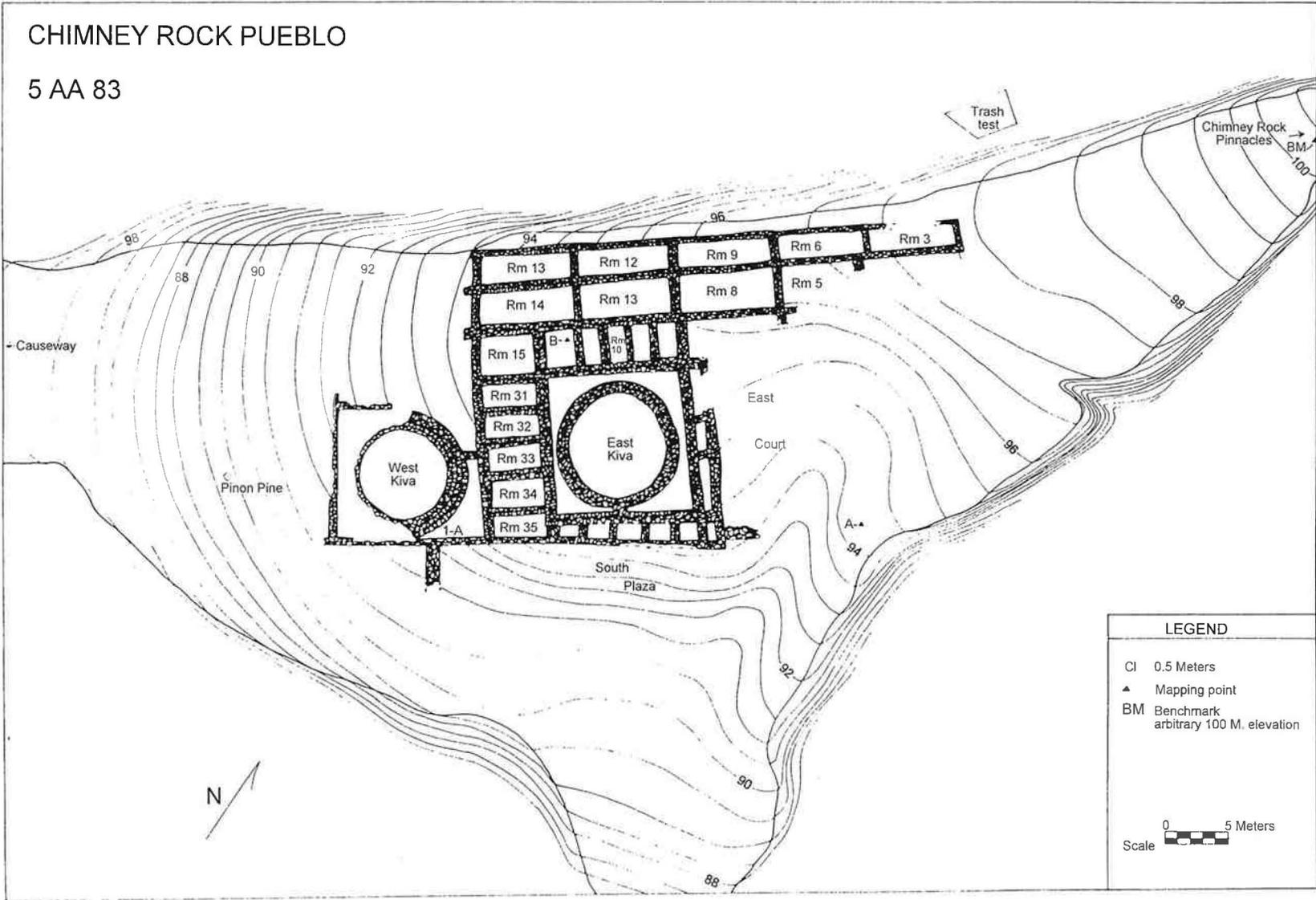


Figure 8-9. Plan map of Chimney Rock great house (5AA83) (Eddy 1977:Figure 12). (Reprinted with permission of the Colorado Archaeological Society.)

## Pueblo II Villages in the USJ-Piedra Drainage Unit

As noted above, residential settlements are considered villages if they have more than about 50 structures located within a stone's throw of one another. In the study area, most of the sites that might be considered villages occur either in late Pueblo I or in early Pueblo III times. However, in the Navajo Reservoir area, small late Pueblo I–early Pueblo II Piedra phase villages occur on the Upper San Juan and lower Piedra in the area of the Colorado-New Mexico border. An example is LA 4195, Sambrito Village (Eddy 1966:230-254). The main occupation at the site probably dates to the terminal A.D. 800s and the early 900s in the late part of the Piedra phase. Eddy (1966:232) assigns 19 pithouses, 13 surface structures, and 5 exterior pits to the Piedra occupation. A very large (ca. 12 m diameter) circular-plan pit structure was interpreted as a great kiva. The more numerous smaller pit structures are earth walled, circular in plan, and have ventilators, but lack standard kiva features. The surface structures are primarily small room blocks of pole-and-adobe construction. Unlike some other late Piedra phase sites in the vicinity, Sambrito Village is not stockaded, but Eddy (1966:248) reports that some of the human remains from the site show evidence of violence, including possible cannibalism. Elsewhere, Eddy (1974) summarizes the evidence for violence in the late Piedra phase, and attributes it to internecine (presumably intercommunity) warfare attendant upon the disruption caused by adaptive problems related to flood plain entrenchment that was moving progressively upstream in the river valleys of the region.

Eddy (1993) refers early Pueblo II sites in the Chimney Rock locality of the USJ-Piedra drainage unit to the Arboles phase. This area is located upstream from the Navajo Reservoir area. Pueblo II habitation sites located on the river terraces east of Chimney Rock Mesa include varying-sized clusters of residential pit structures with associated surface rooms made of jacal and/or cobble masonry (Mobley-Tanaka 1990). These pit structures do not clearly display the complex of “kiva features” that characterize early Pueblo II pit structures farther west, but few have been completely excavated. The dominant pottery types at these sites are Mancos and Payan Corrugated (Payan is a local variant of Mancos Corrugated) but there are about equal percentages of Mancos Black-on-White and Cortez Black-on-white (Mobley-Tanaka 1990:51). Using Wilson and Blinman's (1991a) ceramic complexes, the indicated date is around A.D. 980 to 1025. It is not clear whether any of these river terrace sites qualify as villages under the 50-structure criterion, but they definitely show greater settlement aggregation than is typical for early Pueblo II sites in the western drainage units.

In middle to late Pueblo II times, settlement in the Chimney Rock locality aggregated on and around Chimney Rock Mesa (Eddy 1977, 1993; Malville and Matlock 1993; Mobley-Tanaka 1990, 1993). There may be some overlap in dating between the population of sites on the river terraces and the sites on and around the mesa (Mobley-Tanaka 1990). Ceramic and tree-ring evidence places the residential buildup on the mesa to the middle to late A.D. 1000s; the Chimney Rock great house (Figure 8-9) was constructed atop the mesa about A.D. 1075. In addition to Chimney Rock Pueblo, the “high mesa” cluster includes 14 sites with an estimated 74 mound structures (Eddy 1977:9). These are close enough to one another so that the aggregate can be considered a large village—perhaps the largest in the study area in late Pueblo II times. The habitation sites that were excavated include the Parking Lot site (5AA86), the Ravine site (5AA88) and the Access Road site (5AA92) (Eddy 1977, 1993; Mobley-Tanaka 1993).

Architecturally, the mesa habitation sites differ dramatically from both Chimney Rock Pueblo and the somewhat earlier Pueblo II sites on the lower elevation river terraces. The three excavated sites noted above are dominated by large, circular, above-ground masonry structures with walls that are often well over a meter thick (Figure 8-10). The circular structures lack the standard complex of kiva features that occur in circular pit structures farther west, and are apparently living rooms. Small surface rooms with relatively thin walls are often joined to them. Most habitations have

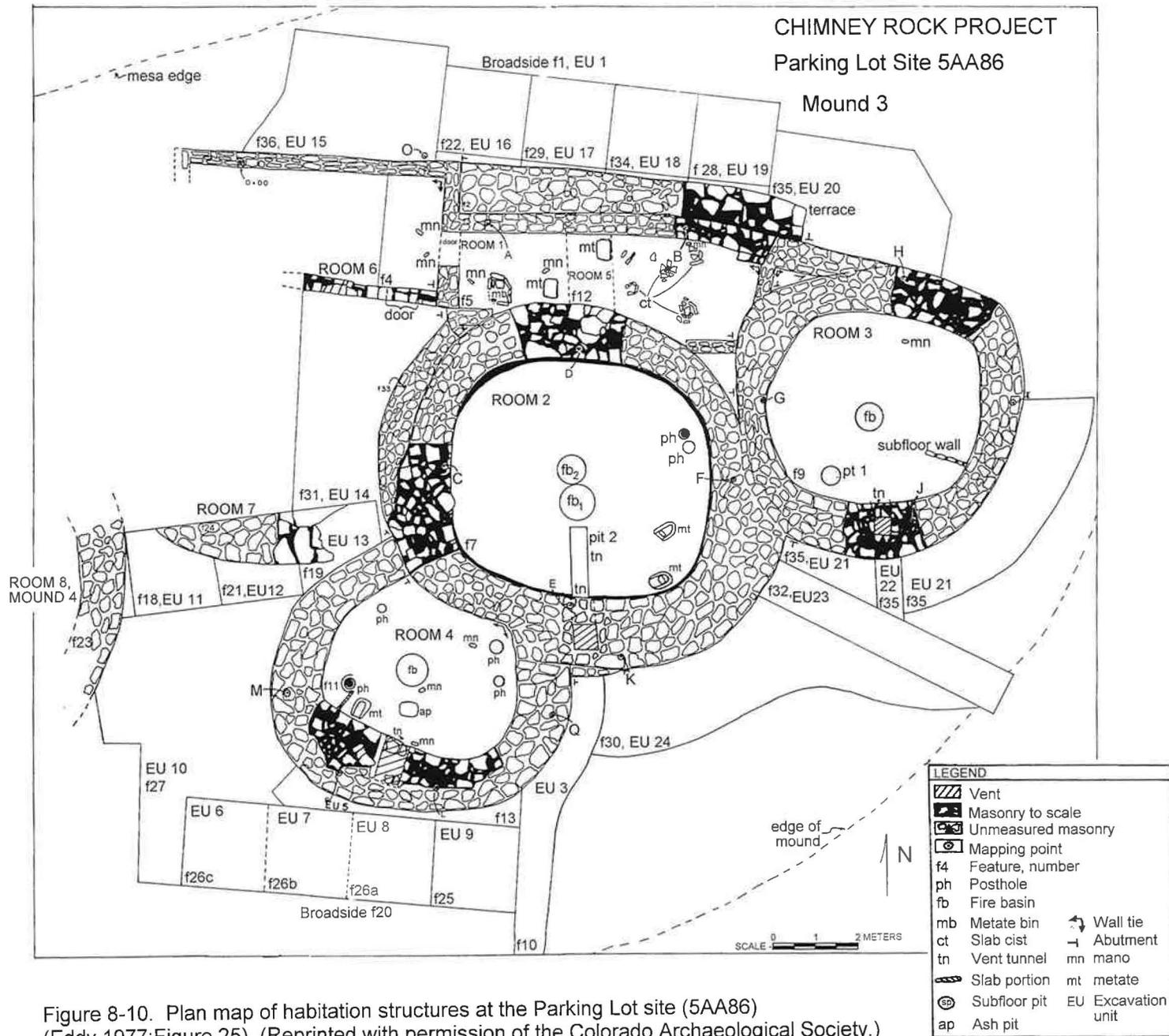


Figure 8-10. Plan map of habitation structures at the Parking Lot site (5AA86) (Eddy 1977:Figure 25). (Reprinted with permission of the Colorado Archaeological Society.)

only a single large circular structure, while others are complexes of several conjoined circular rooms with attached rectangular surface rooms. These have been referred to as “above-ground pithouses,” “crater houses,” and “crater mounds” (Eddy 1977; Kane 1993).

Survey data show that sites in the Chimney Rock cluster have from 1 to 16 “crater-shaped mounds,” each presumably indicating the presence of one of the thick-walled, circular masonry structures (Eddy 1977:8). These crater mounds occur singly or in small conjoined groups, as noted above. The Ravine site (5AA88) has a number of masonry buildings, including an above-ground great kiva-like structure approximately 12 m in diameter (Eddy 1977). With respect to the Chimney Rock aggregate, Kane (1993:48) notes that “The total architectural and material complement of individual crater houses are suggestive of single family residences. Some of the more peripheral houses are very small and of very simple construction; they may have served as domiciles for smaller subfamily groups or individuals, or may represent seasonally used quarters. Approximately 120 crater houses have been recorded on the Chimney Rock Mesa and smaller complements are present on the slope of Pyramid Mountain and in the Peterson Gulch area west of the Piedra River.”

### **Pueblo II Villages in the Western Study Area**

In the western part of the study area, the Cahone or Ansel Hall Ruin in the northern Monument-McElmo drainage unit is one of the few large aggregated villages in the western part of the study area that appears to be as early as the late Pueblo II period. The site covers approximately 20 acres (Guthe 1949). Small portions were excavated in the 1940s (Guthe 1949; Tobin 1950), but the work has never been reported in detail. The site has a great kiva, as well as a compact multistoried building that appears to be a Chaco-style great house. There are also a number of small, rather closely spaced unit pueblos marked by relatively low house mounds and shallow kiva depressions. Most of these appear to be single-kiva habitation units that are not joined into larger room blocks. Associated ceramics indicate a late Pueblo II date for many if not most of these, and tree-ring dates from one of the unit pueblos yielded a cluster of cutting and noncutting dates in the late A.D. 1050s and early 1060s (Robinson and Harrill 1974:19). If the great house at Ansel Hall was constructed at the same time as most others in the area (i.e., after about 1075), the village-type residential pattern may already have been in place. Field examination of surface ceramics indicates there probably was also some occupation at the site in the Pueblo III period.

The Lancaster site is also located in the Monument-McElmo drainage unit. The predominant occupation was probably in early Pueblo III, but surface pottery indicates a fairly extensive late Pueblo II component as well (Scott Ortman, personal communication, 1999). An imposing mound of wall rubble located adjacent to a spring on the southwestern periphery of this large site has sometimes been interpreted as a probable Chacoan great house, but field inspection indicates that it more likely dates to the late Pueblo III period. On the other hand, a multistoried structure that occurs in the main part of the village has an associated midden with predominantly late Pueblo II pottery on its surface (Scott Ortman, personal communication, 1999). It is possible that this structure is a Chaco-era great house that was remodeled and added onto in early Pueblo III times.

Recent limited testing at the Yellow Jacket site at the head of the drainage of the same name in the Monument-McElmo unit indicates a fairly widespread occurrence of late Pueblo II pottery at this very large site (Kuckelman 1997; Ortman et al. 1999), which saw a much heavier occupation in the A.D. 1200s. There is an unexcavated great kiva just south of a high unexcavated rubble mound that may represent a Chaco-era great house, as well as a north/south road or “street” that bisects the site. Late Pueblo II pottery occurs in varying frequencies over most of the site, suggesting some level of residential aggregation here during that period.

In summary, aggregates large enough to be called villages are rare in the western drainage units in Pueblo II, and most occur in the latter part of the period. They are generally associated with Chacoan-style great houses, but not all aggregates have their own great house, and some of those that do may have been in place before the great house was constructed. The late Pueblo II aggregates in the western part of the study area appear to have served as the nuclei of more dispersed communities, with the majority of the households in the community actually residing in homesteads or hamlets outside the nucleus. In the USJ-Piedra drainage unit, the late Pueblo II aggregate at Chimney Rock probably contained most of the population of the community that was centered there. Additional occurrences of the distinctive “crater houses” at some distance from Chimney Rock (Kane 1993) suggest that some of this locality’s late Pueblo II population also resided in dispersed settlements or sub-village-sized aggregates.

### Field Houses

These sites lack kivas, typically consist of one or a few lightly built rooms, and display only small accumulations of refuse. This is something of a catch-all category, based as it is on the absence of evidence for intensive long-term use or a heavy time investment in construction of facilities. Sites classed as field houses are often thought to represent storage or shelter facilities associated with fields that were located at some distance from the primary residence. In settlement systems in which primary residences are dispersed and are located adjacent to a primary field, field houses may have been associated with additional fields and hence indicate a multiple-field strategy on the part of households. Kohler (1992a) has also argued that in areas of high population density where there was competition for land, field houses may have been constructed to help demonstrate ownership or use-rights to plots of productive land, even in years when they were not being farmed.

In areas of low population density and where there was a premium on high mobility, the distinction between field houses and primary habitation units is likely to break down. For example, in the Cedar Mesa of southeastern Utah (which is in the extreme western part of the northern San Juan or Mesa Verde culture area), the typical Pueblo II or III habitation site is very small and most do not have a kiva. Recognition of field houses as a distinct class of Puebloan sites is more problematic than in the much more densely settled Monument-McElmo drainage unit, where homesteads and hamlets comprised of clear-cut Prudden units are extremely numerous. Even in the more populous part of the study area, basing the distinction between habitation and field house on the presence or absence of a kiva may be arbitrary with respect to the actual use of the site. Some of the homesteads in the study area show a low investment of time and materials in the construction of the kiva and surface structures, as well as relatively small accumulations of refuse. Such sites are treated as habitations in this review, but some may represent secondary habitations that were only seasonally used. Others may have been the primary residence of a household, but were built with the expectation of being used for only a few years.

It is likely that some sites classed as field houses were also used primarily in relation to collecting or processing wild food resources. In general, the “field house” site class needs to be defined in relation to other site types in a locality, and functional interpretation of sites that are so labeled needs to rely on analysis of their ecological setting and of any associated artifactual or ecofactual material.

The Four Corners Archaeological Project, designed to record and if necessary, excavate, sites impacted by the Dolores Project water-delivery system, has produced several good studies of Pueblo II sites that can be classed as field houses.

Site 5MT9077 (Errickson 1993:235-243) is located in the McElmo (i.e. Montezuma) valley about 5 km (3 mi) southeast of Cortez. Associated pottery suggests a date in the early to middle A.D.

1000s. Features at the site include a small, D-shaped surface masonry room with a hearth and a maximum diameter of about 1.5 m. Elsewhere on the site are an exterior hearth and a warming pit, a large probable storage pit, several small exterior pit features, and an exterior rock cluster. No kiva was found. The site is part of a dispersed cluster of Pueblo II sites that includes habitations, probable seasonal habitations, and field houses (Errickson 1993:243).

Site 5MT10188 (Errickson 1993:277-286) is located in the Ute drainage unit on the Ute Mountain piedmont about 1.4 km (.87 mi) south of Towaoc. Associated pottery indicates a date between A.D. 1050 and 1125. The site is located close to ephemeral tributaries of Cottonwood Wash, and Errickson suggests that it was established to exploit the agricultural possibilities of periodic flooding and alluvial deposition along these drainages (see also Huckleberry and Billman 1998). In addition to a small assemblage (< 500 items) of potsherds and lithic artifacts, there was masonry rubble indicating the former presence of two small, lightly-constructed surface rooms. A nearby exterior pit held a complete Dolores Corrugated jar, and an accumulation of fire-cracked rock was also found. Errickson (1993:285-286) notes that known contemporaneous sites include an isolated kiva located about 300 m away and a small habitation located at a distance of 1.8 km. Considering the function of site 5MT10188, Errickson (1993:286) states that “the rooms at Site 5MT10188 probably functioned as temporary, accessible, storage structures and shelters associated with agriculture. The rooms would have temporarily stored harvested foodstuffs and the tools and materials needed for plant tending and procurement and daily life at the site.”

### **Limited Activity Sites**

These sites do not have obvious surface evidence of architecture, although they may have evidence of features such as slab-lined hearths and fire-cracked rock accumulations. In most applications, this is a catch-all site class that probably represents a variety of resource-processing stations, as well as field houses or even habitations not recognized from surface evidence. For example, Kuckelman and Morris (1988) and Morris (1991) tested a number of artifact scatters of various ages in work done in conjunction with construction of the South Canal (Kuckelman and Morris 1988) and the Hovenweep Laterals (Morris 1991). After study, most of these could be interpreted as peripheral parts of probable habitation sites, or as field houses or habitations that were not apparent from surface evidence.

It is the authors' experience that during the Pueblo periods, the frequency of artifact scatters lacking surface evidence of architecture is in general inversely proportional to the density of habitation sites in an area. Kohler (1992a) argues that in densely populated localities, households are more likely to build visible structures to help mark their claims to resources such as arable soil located well away from their principal habitation. Densely settled areas are also likely to be agriculturally productive and to provide abundant opportunities for harvesting seeds and greens from weedy plants in abandoned agricultural fields, and for hunting small game attracted to both cultivated and abandoned fields. In these settings, households may be able to locate their residences close to productive fields that also serve as sources for other important resources, making construction of distant structures and facilities less likely.

Data compiled in Table 8-3 show that for the study area as a whole, only 16.8 percent of the recorded sites are listed as non-habitations, while 83.2 percent are classed as habitations. Among the non-habitations are undoubtedly a number of sites that would be considered field houses. Thus, it appears that sites lacking evidence of structures are relatively rare in the study area. The ratio of habitations to non-habitations is even higher—95.2 percent to 4.8 percent—in the Mesa Verde-Mancos drainage unit, probably because most of the site records come from Mesa Verde National Park, which had a very high density of settlement both in Pueblo II times and earlier. The extremely dense understory that occurs over much of the park may also contribute to the underrepresentation of nonstructural sites in surveys.

Data from Cedar Mesa, in the far western part of the Mesa Verde culture area, offer an interesting contrast (Matson et al. 1988). There, Pueblo II and III communities are extremely dispersed, and a relatively high degree of household mobility is indicated by the small size of habitations, low amount of investment in construction of facilities, and small accumulations of refuse, at least relative to sites in the central Mesa Verde region. Cedar Mesa survey data show that habitations make up 34.8 percent of the components assignable to late Pueblo II and Pueblo III, possible habitations account for 5.3 percent, and limited activity sites account for 57.6 percent. Most of the limited activity sites are artifact scatters with few evidences of features of any sort. Matson et al. (1988: 252) note that both habitations and limited activity sites occur in similar environmental settings and argue that most of the limited activity sites probably were seasonal farm stations. This conclusion also drew on work by Haase (1983), who did a fine-grained settlement analysis of the Cedar Mesa Pueblo sites, and concluded that a large proportion of the limited activity sites were located in settings compatible with use as agricultural field stations. The implication of this comparison is that more densely settled, more stable populations are more likely to invest in construction of residential and other facilities, to locate their residences close to the areas where a variety of important resources can be acquired, and to have fewer non-residential facilities and stations located at a distance from the primary residence.

In any case, the Pueblo II limited activity sites in the study area probably represent a mix of field stations related to agricultural and nonagricultural resource acquisition and processing; refuse areas that actually are related to nearby habitation sites; and habitation sites or field houses that have earthen architecture that was not recognized from surface evidence.

### **Water-control Features**

These features occur widely in the study area, and exhibit a considerable variety of forms. Most common are check dams, terraces, and reservoirs. Rohn (1963, 1977), Winter (1978), Haase (1985), Wilshusen et al. (1997), Smith and Zubrow (1999), and Breternitz (1999) provide descriptions and illustrations of the various types of features, as well as discussion of their functions. Water-control features usually are difficult to date, but they appear to occur primarily in the Pueblo II and III periods. They tend to occur in the more densely settled areas, and check dams and terraces can be considered a form of agricultural intensification. Reservoir construction may be related instead to local population density and the increased demands for water for domestic use, although reservoirs could also have served as a source of water to be used in pot irrigation, perhaps to help young corn plants survive the typically dry period in late spring. Recent publication of several long-delayed reports has helped clarify the chronology of reservoir construction on the Mesa Verde proper.

Smith and Zubrow's (1999) report of a probable reservoir in Morefield Canyon in Mesa Verde National Park (written draft form in 1967 and revised in 1993) contributes valuable information on when reservoir construction began on Mesa Verde. Site 5MV1931 in Morefield Canyon is a large mound "composed of numerous stratified fine sands, clays, sandy loams, silts, and a few deposits of gravel, all formed under conditions of water deposition and contrasting markedly with the thick alluvial deposits of undifferentiated fine sands and silts which make up the fill of the canyon....The 1967 excavations provided strong evidence that the site was...a structure built to divert and impound water from a nearby intermittent stream, and that its gradual rise above the canyon floor was the result of repeated accumulations of sediments in an impoundment area and a channel which fed water into it" (Smith and Zubrow 1999:1). Recent work by the Wright Paleohydrological Institute of Boulder, Colorado, supports Smith and Zubrow's inference that the sediments were water-deposited and that the site was a man-made water management facility (Wright Water Engineers 1997).

The assemblage of painted pottery associated with 5MV1931 is dominated by Mancos Black-on-white, with Cortez Black-on-white as a distinct secondary contributor, and even smaller frequencies of Piedra Black-on-white. These pottery type frequencies are consistent with Smith and Zubrow's (1993:30) conclusion that "the site functioned primarily during the Pueblo II period but...it may have begun during the Pueblo I period."

An updated report on the 1969 excavations at Mummy Lake in the Far View site group at Mesa Verde National Park has also recently been published (Breternitz 1999). In this report, Breternitz reviews the long history of varying interpretations of this feature. After considering several lines of evidence, including characteristics of the sediments, he concludes that Mummy Lake was built and used as a reservoir. However, he does not find evidence to support proposals by Stewart and Donnelly (1943) and Rohn (1963, 1977) that it was fed by an extensive system of water-collection ditches, and that water from Mummy Lake was transported several miles down Chapin Mesa via the "Far View Ditch." Rather, Breternitz (1999:28-30) infers that Mummy Lake was excavated to the "red clay-sandstone bedrock contact" in order to collect underground water percolating downslope just above this contact. He also suggests that this source of water was supplemented by small ditches that channeled surface runoff into Mummy Lake from a small local catchment. He concludes that Mummy Lake was never a reliable source of domestic water for the settlements in the Far View locality, but that it may have held water seasonally and thus served as a supplemental water source.

The painted pottery assemblage associated with Mummy Lake is dominated by Mancos Black-on-white, with McElmo and Cortez Black-on-white as secondary and tertiary elements (Breternitz 1999:23). Referring to the two construction stages at the site, he concludes that "Mummy Lake I...was constructed during Cortez-Mancos Black-on-white times, probably between AD 950 to 1000. Remodeling and construction of ML-II took place during the time when Mancos Black-on-white was in vogue. The late ditch system, and perhaps Mummy Lake II, itself, was used up to the time that McElmo Black-on-white was being made, ca. AD 1200 plus" (Breternitz 1999:25). This evidence clearly places construction and use of Mummy Lake primarily in the Pueblo II period. Using Wilson and Blinman's (1991a) scheme for dating pottery assemblages, an argument could be made for slightly later initial construction date, perhaps in the early to mid-1000s, and a somewhat earlier end of use, perhaps in the middle 1100s.

Studies of available hydrological evidence by Leeper (1986) and Wright Water Engineers (1999) indicate that the Stewart-Donnelly-Rohn model of how Mummy Lake functioned is hydrologically highly unlikely or impossible. A field examination of the Mummy Lake area and a review of the excavation data by Wright Water Engineers (1999) provided some support for the inference that there was likely to have been a seasonal accumulation of water in Mummy Lake from snowmelt, runoff from the nearby water gathering area, and occasionally, from seepage from a local water table perched at the bedrock contact (as Breternitz had proposed).

### **Special-purpose Sites and Structures**

This category includes kilns, shrines (Rohn 1977), roads, and what Thompson et al. (1997) have called "architecture with unknown function" or "AWUF." The latter category includes enclosing walls, aligned stones, and rock circles. They often are spatially associated with aggregated Pueblo III habitation sites, but may occur at some distance from the site as well. Thompson et al. (1997) suggest that many examples of AWUF represent ways of symbolizing community boundaries, or aspects of world view. Berms and other peripheral earthworks that are often associated with late Pueblo II Chaco-era great houses may also have similar functions.

In the Sand Canyon locality, traces of a prehistoric road extend for several kilometers between Casa Negra, a small great house located just east of Sand Canyon Pueblo, and the Shields site, located just north of the Goodman Point site (Adler 1990; Duff and Ryan 1999). It seems likely that this feature was constructed in the late Pueblo II period as part of the Chacoan influence in the area, but it may well have continued to be used in the Pueblo III period as well. No testing or other systematic studies have been carried out to attempt to date the road directly.

Kilns probably occur in the study area as early as the Pueblo I period (Purcell 1993) and several dating to the Pueblo II period have recently been excavated at Mesa Verde National Park (Brisbin 1997). The majority of kilns known from the study area date to the Pueblo III period (Purcell 1993; Fuller 1984). These features are linear trenches, usually lined with stone slabs, that were used to fire small to large quantities of white ware pottery. They generally occur at some distance from habitation sites, perhaps because of the necessity of accessing abundant supplies of fuel wood. They are recognized by their slab outlines; they often have associated surface evidence of ash and charcoal, and sometimes have evidence of misfired white ware sherd "wasters." They can be distinguished from slab hearths because they are usually quite long relative to their width.

### **Rock Art Panels**

Both petroglyphs and pictographs occur in the study area, often in association with other site types, but in many cases in isolation. In a survey of Anasazi rock art of the San Juan River drainage, Cole (1990:109-150) discusses a number of examples from southwestern Colorado and reviews rock art studies done in this area, e.g., by Ives (1986), Olsen (1985), Wade (1979), and Daniels (1954, 1976). Cole (1990:138-140) groups Pueblo II and Pueblo III styles together, and depicts examples from the McElmo Creek-Cannonball Mesa area in the Monument-McElmo drainage unit; from Ute Mountain Tribal Park and Petroglyph Point in the Mancos-Mesa Verde drainage unit; and from the Dolores River valley in the Dolores drainage unit. Among the motifs present in Pueblo II-III petroglyph and pictograph panels in the study area are "lizard man" anthropomorphs, hump-backed flute players, handprints, "sandal tracks," shields, insect-like forms, quadrupeds (especially bighorn sheep), birds, bird tracks, spirals, concentric circles, lines, "squiggle-mazes," and abstract linear and geometric designs (Cole 1990:138-148). Cole (1990:141-142) notes that:

During the Pueblo II-III period, San Juan Anasazi rock art undergoes significant stylistic changes from preceding periods. Imagery and themes of earlier styles, such as broad-shouldered anthropomorphs with elaborate headdresses and body decorations, keyhole symbols, bags, and crooks, are not evident in the later art. Scalplike images are also absent, but a few masklike images are present...the anthropomorphic tradition previously described for the San Juan area is no longer apparent. Anthropomorphic figures of Pueblo II-III style rock art are generally smaller and less elaborate than those of earlier periods, and are frequently "lizard men," shown with arms and legs out to the side and raised or lowered at the elbows and knees...this pose may have developed during the Pueblo I period and may be symbolic of lizards and possibly frogs, creatures that also appear in the rock art and jewelry of the Pueblo II-III period.

### **FUNCTIONAL INTERPRETATION OF KIVAS**

An issue that has had considerable discussion over the past decade is the functional interpretation of the round, semisubterranean Pueblo II and III rooms called "kivas," most evident in the western part of the study area during the Pueblo II period. Roberts (1939b), Brew (1946), Lancaster and Pinkley (1954), Gillespie (1976), and others have argued that changes in pit structure architecture from

Basketmaker III through early Pueblo II signal a gradual functional shift from fully residential to fully ceremonial use. Thus, Basketmaker III “pithouses” gave way to Pueblo I “protokivas” to full-fledged Pueblo II “kivas,” that are functionally analogous to the specialized ritual kivas of Western Pueblo peoples such as the Hopi. Once prehistoric San Juan region pit structures had acquired a full architectural complement of features that included a round plan, bench, pilaster roof supports, deflector, ventilator, and sipapu, they were inferred to have become nonresidential, and to have been used primarily for religious rituals, and primarily by men.

Lekson (1988) challenged this interpretation on the grounds that there was abundant evidence that in the northern and southern San Juan drainage, Pueblo II and III pit structures functioned as part of a household-level domestic complex, and that kivas did not become specialized for ritual and community functions until the Pueblo IV period. Lipe’s (1989) comparison of northern San Juan Pueblo I through Pueblo III architecture and community patterns with those of Pueblo IV and historic period Pueblos supports Lekson’s proposal. In Pueblo IV, the ratio of surface rooms to kivas increases dramatically, kiva floor areas become much larger, and they are no longer closely associated with specific small blocks of habitation and storage rooms. Analyses of floor features and artifact associations from Mesa Verde-region Pueblo I through Pueblo III protokivas and kivas have provided abundant evidence that these structures ordinarily were the primary centers of domestic activity within a household or extended family architectural complex (e.g., Varien and Lightfoot 1989; Cater and Chenault 1988; Kuckelman and Morris 1988; Cater 1989; Morris 1991; Errickson 1993, 1995). This is not to say that Pueblo I-III northern San Juan protokivas and kivas lack symbolic and ritual features (see Wilshusen 1989); it is just that these aspects of their use probably functioned at a household level, rather than serving sodalities or large kin groups as in Pueblo IV and historic Pueblo kivas. Under this interpretation, the small Pueblo II and III kivas of the San Juan drainage do not have a good architectural or functional analog among the historic Pueblos.

## **PUEBLO II VIOLENCE AND THE CHACO CONNECTION**

In 1998 and 1999, numerous popular articles appeared with sensationalized titles such as “American Cannibal” (Dold 1998), “Cannibals of the Canyon” (Preston 1998), “A Theory of Anasazi Savagery” (Cart 1999), and “Chaco Death Squads” (Lekson 1999a). These stories stemmed largely from two sources: first, the recent and at the time largely unpublished discoveries of evidence of probable human cannibalism at several sites near Cowboy Wash, on the Ute Mountain piedmont (Billman 1997; Billman, ed., 1998; Billman et al. 2000; Leonard 1997) and second, the conclusions of a book by physical anthropologists Christy and Jacqueline Turner (1999) entitled *Man Corn: Cannibalism and Violence in the American Southwest*. The Turners’ thesis is a dramatic one: a Chacoan political elite, perhaps established by Toltec immigrants, used public violence, mutilation, and cannibalism as a political tool to control commoner populations both at Chaco Canyon and, as Chacoan political hegemony spread, in the hinterlands. Because some of the most important evidence bearing on the topics of violence and possible incidents of cannibalism has come from the study area, and because of the amount of attention that these topics have received from the public and from professional archaeologists working outside the study area, it is appropriate to review the evidence in some detail in this report.

The Cowboy Wash materials do not figure significantly in the Turners’ book, because they were discovered too recently. However, several other sites from southwestern Colorado are among the cases Turner and Turner think provide the best evidence for cannibalism. These include 5MTUMR2346 in Mancos Canyon (White 1992), the Grinnell site, located near Yucca House south of Cortez (Luebben and Nickens 1982), Marshview Hamlet in the McPhee Reservoir area near Dolores (Wilshusen 1988c), Porter Pueblo (5MT1) near Yellow Jacket (Wheat 1959; Malville 1989) site 5MT3, also near Yellow Jacket (Lange et al. 1988; Malville 1989), three Aztec Wash sites (5MT10207, 5MT10206, 5MT7723)

located near Towaoc on the Ute Mountain piedmont (Errickson 1993; Dice 1993b), and Hanson Pueblo, west of Cortez (Morris et al. 1993; Dice 1993a). Turner and Turner (1999) list a number of additional cases from the northern San Juan region with evidence of violence and/or cannibalism, according to their criteria. Kuckelman et al. (1999) also review temporal and spatial patterns of prehistoric violence in the northern San Juan, including cases of possible cannibalism.

During the past 30 years, Christy Turner has examined numerous collections of human remains from the Southwest, and has applied standard forensic criteria for recognizing human-caused violence and distinguishing it from other sources of breakage such as carnivore damage. Turner has also developed criteria for distinguishing evidence of cannibalism from other forms of directed mayhem (e.g., Turner and Morris 1970; Turner 1983; Turner and Turner 1992; Turner et al. 1993). The development of methods for recognizing evidence of cannibalism in the osteological record was also advanced by White's (1992) meticulous study of fragmentary human remains from 5MTUMR2346, a late Pueblo II or early Pueblo III site from Mancos Canyon, in the Mesa Verde-Mancos drainage unit. In their 1999 book, Turner and Turner (1999:405) examine taphonomic evidence for cannibalism or other forms of violence at 76 sites; they conclude that credible evidence of cannibalism is present at 38 of these sites, of which 9 are from our study area, as noted above. Billman's four Cowboy Wash cases (Billman, ed. 1998; Billman et al. 2000) would boost to 13 the total number of sites from southwestern Colorado having evidence of probable cannibalism, according to the criteria put forth by Turner and Turner (1999).

Alternative views regarding interpretations of proposed cases of early Puebloan cannibalism are presented in a recent monograph edited by Bullock (ed. 1998). Here, Bullock (1998a, 1998b, 1998c) and Larralde (1998) agree that Turner and others have demonstrated that extreme violence occurred in a number of cases. They argue, however, that cannibalism has not been conclusively demonstrated to be a better explanation than several alternatives for the observed taphonomic patterns of bone treatment and disposition. Bullock (1998b, 1998c) suggests that the observed postmortem alteration of corpses may have resulted from intercommunity warfare, from practices of intracommunity social control and coercion, including the killing of suspected witches, or from ritual activity, including various types of mortuary treatment such as exposure of the body followed by dismemberment and secondary burial. Darling (1999) has presented an extended argument that the practice of executing suspected witches might account for the evidence that Turner and Turner attribute to cannibalism.

In general, the Turners, White (1992), and others have done a convincing job of demonstrating that, at a number of times and places in the prehistoric Southwest, extreme violence was directed against human bodies, in the sense that human bones were broken into small pieces, were often burned, and were processed in the same way as were nonhuman animal food bones. Despite the alternative arguments summarized in Bullock (ed. 1998; also see Bullock 1991, 1992), the inference that cannibalism was involved in at least some of these cases appears fairly well supported, and has been strengthened by full publication of the evidence from site 5MT10010 in the Cowboy Wash cluster (Billman et al. 2000).

At this site, the archaeological contexts are well documented and the taphonomic evidence is abundant. Billman et al. (2000) conclude that several lines of evidence indicate that cannibalism was part of a violent episode that resulted in the abandonment of 5MT10010 about A.D. 1150. The characteristics of the human remains met Turner's criteria for cannibalism. In addition, two associated flakes had residues that tested positive for human blood, and a human coprolite deposited in a hearth contained myoglobin from human muscle tissue (Billman et al. 2000). In an extended commentary on the article, Dongoske et al. (2000) criticize some aspects of the empirical evidence, but devote the majority of their critique to calling for a more rigorous consideration of alternative hypotheses, and for treating

archaeological evidence of extreme violence toward living or dead humans in broader cultural, historical, and theoretical contexts.

In the authors' opinion, the Turners' proposal that Southwestern cannibalism was often the result of Chacoan "state terrorism" is much more open to criticism than their basic propositions about how archaeologists and physical anthropologists can recognize evidence of both violence and cannibalism from the examination of human remains. To draw a correlation between the florescence of Chaco and the time-space distribution of cases of presumed cannibalism, they use an inflated time range of A.D. 900 to 1200 as the period when the Chaco sphere of influence was in its heyday (Turner and Turner 1999:484), and assign many of their cases to much broader temporal ranges than close examination of their archaeological contexts would warrant. Consequently, a Chaco association is questionable for many of the specific cases they examine. For example, even though the burning of numerous dismembered adults and intact infants took place on the roof of a Chaco-style tower kiva at the Salmon Ruin great house, this happened at the time of abandonment of the site sometime after A.D. 1260; the site had been reoccupied by late Pueblo III Mesa Verde people after a period of disuse (Turner and Turner 1999:326-331; Adams 1980). The same can be said of the human remains that show evidence of violence at Guadalupe Ruin, a great house outlier in the Puerco Valley of New Mexico. These remains are also associated with a post-A.D. 1200 Mesa Verde occupation. Perhaps Lekson (1999b) is right, that in the A.D. 1200s, there was a restored Chaco hegemony centered at Aztec, but that remains to be established.

Certainly Turner and Turner (1999) would have a much stronger argument if they could show that a large fraction of the cases of cannibalism outside Chaco Canyon correlated well temporally and spatially with the rapid geographic expansion of the great house system between about A.D. 1050 and the early 1100s. Most of the cases they cite do not meet this more demanding criterion. In the northern San Juan region, Turner and Turner's (1999) own data, as well as those assembled by Kuckelman et al. (1999), show that the proposed cases of cannibalism occur both well before and well after the relatively brief period of Chaco-style great house construction. For example, Kuckelman et al. (1999) report examples of human remains with dismemberment, cut marks, burning, and/or extreme fragmentation from several late Pueblo III period contexts that post-date the period of great house construction in the northern San Juan by well over 100 years. As previously reviewed, tree-ring dates for great house construction in this area cluster between the late A.D. 1000s and the early A.D. 1130s. There is possible evidence of an initial small building phase as early as the mid-1000s at one great house (Wallace) and of remodeling as late as the late 1130s at another (Escalante).

In southwestern Colorado, most of the best-documented cases of probable cannibalism cited by the Turners appear to date no earlier than A.D. 1130. In fact, a case can be made that most of these cases comprise a tight cluster dating between about A.D. 1130 and 1160. As Billman (1997; Billman et al. 2000) points out, this pattern seems to correlate more plausibly with the decline in construction of great houses in southwestern Colorado, and with the onset of the profound mid-1100s drought (see discussion in Chapter 9). Rather than being products of the expansion of terrorist social control by a powerful and ruthless elite, these particular cases seem more likely to be associated with the breakdown of whatever political institutions the Chaco system had to offer and/or with the failure of crops due to a widespread drought. If cannibalism was in fact practiced here, it seems more likely to have been the result of score-settling, famine, or the breakdown of community social control due to the drought. It is perhaps significant that most of the southwestern Colorado cases of probable cannibalism that date to the middle 1100s are in the relatively low-lying and drought-prone Ute Mountain piedmont or lower Mancos Canyon areas. Errickson (1993) and Billman (1997) also point out that the Aztec and Cowboy Wash settlements have high frequencies of ceramics from the Chuska area farther south. They suggest that the

inhabitants of these sites may represent an ethnically different community against which members of the local population turned when times got bad in the middle 1100s.

## **RESEARCH NEEDS AND FUTURE DIRECTIONS**

### **Population Dynamics and Community Histories**

A strong case has been made that the western part of the study area was nearly depopulated in the A.D. 900s, with population rebounding in the A.D. 1000s as a result of both immigration and intrinsic growth, perhaps in response to improved conditions for upland dry-farming. At the same time, the USJ-Piedra area saw immigration from the Navajo Reservoir area, followed in late Pueblo II by immigration perhaps from the Gallina region in northern New Mexico. The central part of the study area, between Mesa Verde and the Piedra, lost population between Pueblo I and II, and the Upper San Juan-Piedra appears to have been abandoned in the middle A.D. 1100s, at approximately the same time that harvesting trees for construction declined in the western drainage units. This scenario provides some fascinating opportunities for further research. Questions include the following:

- Are these population movements and fluctuations real or are they the product of survey methods or differential survey coverage, or of lack of precision in dating sites?
- If people were moving in and out of the area, where did they come from and where did they go—in other words, can researchers do the same kind of fine-grained identification and tracking of culturally distinctive populations for the Pueblo II period that Wilshusen accomplished for Pueblo I in Chapter 7?
- To what extent can the depopulation of the middle part of the study area and the ultimate abandonment or near-abandonment of the Upper San Juan-Piedra area be explained by environmental change, or do we need to step back and see these shifts as rooted in regional sociocultural, political, and demographic changes?
- Is Varien's (1999b) hypothesis correct that many of the communities in the western part of the study area became established in the growth spurt of the early A.D. 1000s, and persisted more or less in place until the late 1200s, or were episodic boom and bust cycles more prevalent in most localities?

Progress on any of these questions will require finer chronological control and better population estimates than are available in most parts of the area at present, but the nature of the study area's archaeological record gives us the opportunity to make these advances. Focused new fieldwork can contribute, but progress on these questions will also require problem-oriented and pattern-seeking research in the extensive literature, site files, and collections already available.

### **Understanding the Chimney Rock Phase**

The Chimney Rock great house and the aggregation of population around it in late Pueblo II times have been well-described by Eddy (1977, 1993) and others (Malville and Matlock 1993). This manifestation is distinctive in a number of ways, both with respect to earlier settlement in the Chimney Rock locality and with respect to other late Pueblo II settlements in the northern San Juan culture area in general. As discussed above, this locality evidently saw population growth in the early Pueblo II period, when other parts of the study area were apparently losing population, and community aggregation in late Pueblo II times when this was also rare elsewhere in the area. Several authors (Breternitz 1993b; Kane

1993) have suggested that the residents of the late Pueblo II “crater houses” associated with the Chimney Rock great house may be culturally more closely related to populations of the Largo-Gallina region of northern New Mexico than to those of the Mesa Verdean cultural tradition elsewhere in the northern San Juan. Mobley-Tanaka (1990, 1993) and Eddy (1977) have posed several hypotheses regarding the social and cultural relationships between the occupants of the great house and those of the surrounding community. Kane (1993) has argued that the Chimney Rock community may have provided timbers for the Chacoan center at Chaco Canyon. All of these questions deserve much fuller research attention.

### **Settlement and Community Sedentism and Mobility**

Varien (1999a) has recently attempted to document patterns of mobility and sedentism at the household, community, and regional population levels in the central Mesa Verde region. The regional population level has been addressed above in the discussion of population dynamics. But aspects of Varien’s model of household and community persistence depend on measurements of habitation site use life developed in prime dry-farming localities in the Monument-McElmo uplands. For example, he finds that small late Pueblo II and Pueblo III habitations were often occupied for one to two generations (Varien, ed. 1999). Yet the substantial variability in architectural investment and amount of refuse accumulation displayed by Pueblo II habitations throughout the study area suggest that these estimates of site use life may not hold for all communities. It would be very productive, for example, to apply the methods Varien used to habitation sites comprising Pueblo II communities in an area such as the Ute Mountain piedmont (Billman 1998; Errickson 1993), where subsistence depended on runoff farming techniques and where habitation sites often appear to have been used seasonally or for short episodes. This work would have substantial implications for estimating regional population, because of the dependence of momentary population estimates on assumptions about habitation site use life (Wilshusen 1996; Duff and Wilshusen 1999).

For the rate-of-accumulation methods reviewed by Varien and others (e.g., Varien and Mills 1997; Varien and Potter 1997) to be useful in estimating site use life, excavations have to be designed to obtain a sample of cooking jar sherds adequate for estimating the total population of these sherds at the site. This can be done on the basis of stratified or random sampling designs that require excavation of only a small fraction of the site (see Varien, ed. 1999), but it cannot be accomplished with excavations that are not designed to produce this kind of estimate.

### **Chacoan Influence**

The occurrence in the study area of numerous great houses that appear to be based on Chacoan architectural models raises a number of questions. The overriding question is “Why were great houses established in southwestern Colorado and what kind of society do they represent?” We have models ranging from political takeovers of communities by coercive Chaco henchmen to the idea that Chaco was essentially an architectural style that local achieved-status headmen affected to demonstrate to the members of their communities that they had some type of connection or relationship with powerful leaders at Chaco Canyon or Aztec. We need to design comparative studies that enable us to evaluate some of the possibilities within this range of interpretations and to understand how great house communities in the study area were organized and how they functioned. Some issues that need to be addressed:

- The late Pueblo II period seems to have been a time when goods from outside the region were more likely to be in circulation—where did these goods come from, how did they get to the communities of the study area, and how did they function in the community social organization?

- Were the patterns of circulation of goods different in late Pueblo II than earlier or later? Do these patterns reveal characteristics of Chaco social or economic organization?
- Are there differences between late Pueblo II communities with great houses and those without them in the kinds and frequencies of goods from outside the region?
- Is there evidence that the occupants of great houses were higher status than the occupants of ordinary residences in the same communities? Do great house communities overall have evidence of greater status differentials as compared with non-great house communities?
- What effects did the growth of Aztec as a major Chacoan center have in southwestern Colorado? Are there distinctive architectural attributes, ritual features, or artifacts that occur at Aztec and do these distinctive characteristics appear to spread through the study area concurrent with the growth of the Aztec center? Is there evidence of exchange of goods between Aztec and the great house communities of the study area?

Understanding Chaco and its influences/interactions with the rest of the Southwest is perhaps the most important and far-reaching research problem in the archaeology of this region. The study area, with its high potential for developing fine-grained chronologies, sophisticated understandings of site formation processes, empirically well-grounded models of community organization, and sensitive measurements of the movement of both people and artifacts through space, offers enormous opportunities for achieving better models of how the Chaco system worked, and how it grew and then declined in influence in a particular area. Well-designed research in the late Pueblo II period is critical to the success of such efforts; data from the field, from existing museum collections, and from publications, reports, and archives can contribute.

### **Warfare and Violence**

Warfare has reemerged as a major factor that must be considered in attempting to understand prehistoric Southwestern social organization, demography, and culture history (see LeBlanc 1999). As reviewed above, the archaeological record of the Pueblo II period in southwestern Colorado has much to contribute both to documenting and to understanding the occurrence of warfare and violence and its effects on communities and regional populations. In addition to structuring new fieldwork, these questions can also be pursued through analysis and comparison of existing reports, collections, and field data. For example, additional analysis of contextual evidence and more systematic comparison of already known cases may permit firmer conclusions about why human remains were mutilated at a number of late Pueblo II sites. Systematic comparisons need to be made of stockaded versus unstockaded settlements to determine if the former exhibit cultural or behavioral attributes that indicate a defensive stance. Communities organized around Chacoan great houses need to be compared with those that lack such a central structure to determine if populations outside the Chaco great house system display greater or lesser evidence of violence or of defensive preparations. As noted above, the Pueblo II archaeological record of the study area has the kind of fine-grained chronological, spatial, and contextual data that will permit complex and demanding studies such as these to be attempted.