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Radiocarbon Dates, Acquired Wisdom, and the Search for Temporal Order in the Uinta Basin

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Some 25 years ago, University of Colorado archaeologists J. Richard Ambler and David Breternitz effectively argued the Fremont of the Uinta Basin could be temporally defined from about A.D. 1000 to 1200. This popular and uncritically accepted hypothesis was based more on intuition than actual chronometric data. Since that time, temporal sequences for Fremont adaptations in the Uinta Basin have undergone various revisions that have gradually expanded the Fremont temporal range beyond that proposed by Ambler and Breternitz. With more than 400 radiocarbon dates now reported from northeastern Utah and northwestern Colorado, it can be postulated that hunter-gatherer populations were becoming increasingly sedentary about 500 B.C., that transitions from a hunter-gatherer economy to a mixed farming and foraging economy was occurring by at least A.D. 250, and that elements typically associated with the Fremont (horticulture, sedentism, and ceramics) were all in place by about A.D. 550 and continued until about A.D. 1300, although with considerable spatial and temporal variability. After about A.D. 1300, most human occupations in the region were reflective of hunter-gatherer subsistence strategies typically attributed to Shoshonean-speaking peoples who occupied the region at the time of Euroamerican contact.

A Late Archaic period from 500 B.C. to A.D. 550 is proposed for that period of time when some foraging populations became increasingly sedentary, adapted more efficient bow-and-arrow technology and began to incorporate horticulture into a semisedentary lifeway. Radiocarbon dates from the region indicate that horticulture, along with a concomitant increase in sedentism, flourished between about A.D. 550 and 1300, herein assigned to the Formative stage. However, the chronometric data suggest at least two distinct adaptations: A Uinta adaptation from A.D. 550 to 1000, characterized by Formative lifeways in the central Uinta Basin, Browns Park, and Yampa River areas, and a Tavaputs adaptation from about A.D. 1000 to 1300 on the adjacent Tavaputs Plateau, including Nine Mile Canyon, Hill Creek, and Douglas Creek, all located in canyon environments immediately to the south of the Uinta Basin. Whether the paucity of Uinta Basin radiocarbon dates after A.D. 1000 and the comparative abundance of dates in the Tavaputs Plateau region after A.D. 1000 represents a withdrawal of Uinta Basin populations into the Tavaputs Plateau cannot be demonstrated by the available data, although it is unlikely the spatial distribution of these dates is coincidental.

INTRODUCTION

In the early 1970s, after a decade of research by the University of Colorado and the University of Utah, scholars of Fremont Culture were embroiled in a fierce debate as to the temporal span of the Uinta Fremont. Some (Jennings 1978; Marwitt 1970a; Shields 1967, 1970) argued for an appearance of a mixed farming and foraging strategy about A.D. 600, and others (Ambler 1969, 1970; Breternitz 1970a, 1970b, 1970c; Gunnerson 1962, 1969) argued the Fremont could be more narrowly defined within a temporal range of about A.D. 1000 to 1200. These arguments reached an apex at the Fremont Culture Symposium in Mexico City during the annual meetings of the Society for American Archaeology (Aikens 1970; Ambler 1970; Breternitz 1970b, 1970c; Marwitt 1970b; Shields 1970).

One of the most influential voices in that debate was David Breternitz, an unapologetic proponent of the idea that the Fremont of the Uinta Basin should be temporally defined within a range of A.D. 1000 to 1150, "with the possibility that the actual dates are 50 years longer at either end" (1970b:7). Breternitz rejected the half-dozen pre-A.D. 1000 radiocarbon dates reported by Shields (1967) from excavations in the central Uinta Basin and by Leach (1970) from Deluge Shelter in the Jones Hole area, arguing these dates were 200 to 300 years too early. Although Breternitz had no qualms about rejecting early dates that did not conform to his Cub Creek phase, he accepted two radiocarbon dates from Blue Mountain in northwestern Colorado because they "seemingly support my idea" (1970b:10) despite the fact the standard deviation of both dates made them unacceptable to most other researchers.

Breternitz's temporal hypothesis (1970b), which has remained unjustifiably resilient over the years, was, as he stated, based on "archaeological evidence, not radiocarbon dates," along with a healthy dose of "intuition and comparative analysis." Now 25 years later, with a data base of more than 400 radiocarbon dates from sites in northeastern Utah and northwestern Colorado, it is possible to move beyond intuition and comparative analyses of artifact types. Given

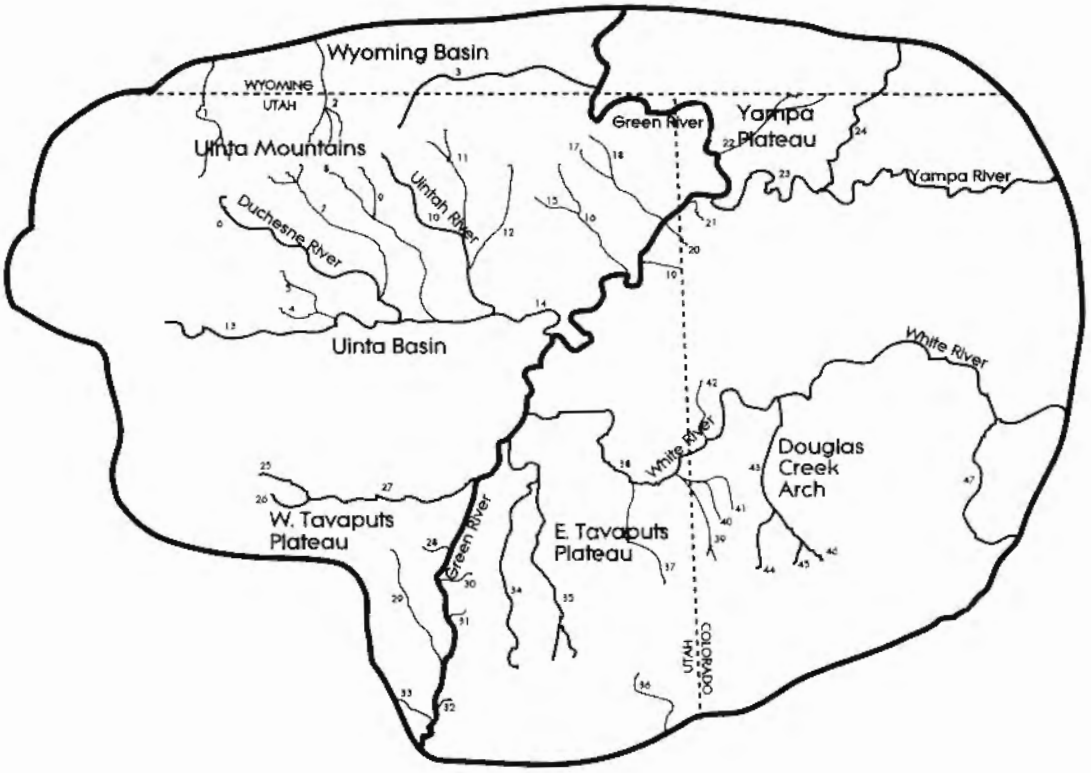

Figure 5.1. Greater Uinta Basin area, including significant drainages: (1) Bear River, (2) Blacks Fork, (3) Henrys Fork, (4) Currant Creek, (5) Red Creek, (6) Duchesne River, (7) Rock Creek, (8) Lake Fork, (9) Yellowstone River, (10) Uintah River, (11) Whiterocks River, (12) Deep Creek, (13) Strawberry River, (14) Duchesne River, (15) Dry Fork, (16) Ashley Creek, (17) Big Brush Creek, (18) Little Brush Creek, (19) Cliff Creek, (20) Cub Creek, (21) Pool Creek, (22) Vermillion Creek, (23) Yampa River, (24) Little Snake River, (25) Argyle Creek, (26) Minnie Maud Creek, (27) Nine Mile Creek, (28) Rock Creek, (29) Range Creek, (30) Chandler Creek, (31) Florence Creek, (32) Rattlesnake Creek, (33) Price River, (34) Hill Creek, (35) Willow Creek, (36) West Water Creek, (37) Bitter Creek, (38) White River, (39) Evacuation Creek, (40) Missouri Creek, (41) Texas Creek, (42) Dripping Rock Creek, (43) Douglas Creek, (44) West Douglas Creek, (45) East Douglas Creek, (46) Cathedral Creek, and (47) Piceance Creek.

the fact this session coincides with the 25th anniversary of the Fremont Culture Symposium, it is appropriate to reexamine the chronological data now available from the Uinta Basin region, and to offer a new chronological perspective based on quantitative chronometric data reported since that time.

Two periods of time are herein discussed: an Archaic stage (5000 B.C. to A.D. 550), with special emphasis on the Late Archaic period (500 B.C. to A.D. 550); and the Formative stage (A.D. 550 to 1300), with emphasis on a Uinta adaptation evident in the Uinta Basin from A.D. 550 to 1000, and a Tavaputs adaptation evident in the contiguous canyon ecosystems of the Tavaputs Plateau from about A.D. 1000 to 1300 (the term "Fremont" is retained for both adaptations). Based on the chronometric data now available, it is evident that in situ populations of Late Archaic hunters and gatherers became increasingly sedentary, erecting semipermanent residential structures by about 300 B.C., if not earlier (McKibbin 1992; Tucker 1986), adding bow-and-arrow technology to hunting strategies perhaps as early as 50 B.C., but certainly by about A.D. 100 (McKibbin 1992), and incorporating maize horticulture into Basketmaker-like subsistence strategies by about A.D. 250 (Talbot and Richens 1994). Plain gray ceramics appear consistently in the Uinta Basin archaeological record by A.D. 550 (Spangler 1995) at about the same time populations began to aggregate into small villages with evidence of permanent architecture. The Fremont presence in the Uinta Basin appears to have decreased gradually in intensity after about A.D. 700. No radiocarbon dates have yet been reported from Uinta Basin residential sites after about A.D. 1000, although a Fremont presence in the Tavaputs Plateau to the south appears to have flourished between about A.D. 1000 and 1300 (Spangler 1993b, 1995).

This paper is based on a synthesis of Uinta Basin archaeological data reported by Spangler (1995). The Uinta Basin region herein discussed includes the Green River drainage in northeastern Utah and northwestern Colorado. This region includes the Yampa, Duchesne, and Uintah rivers, and Ashley-Dry Fork and Brush creeks, all located in the northern portion of the study area; and Douglas, Hill, Willow, Nine Mile, and Range creeks, all in the

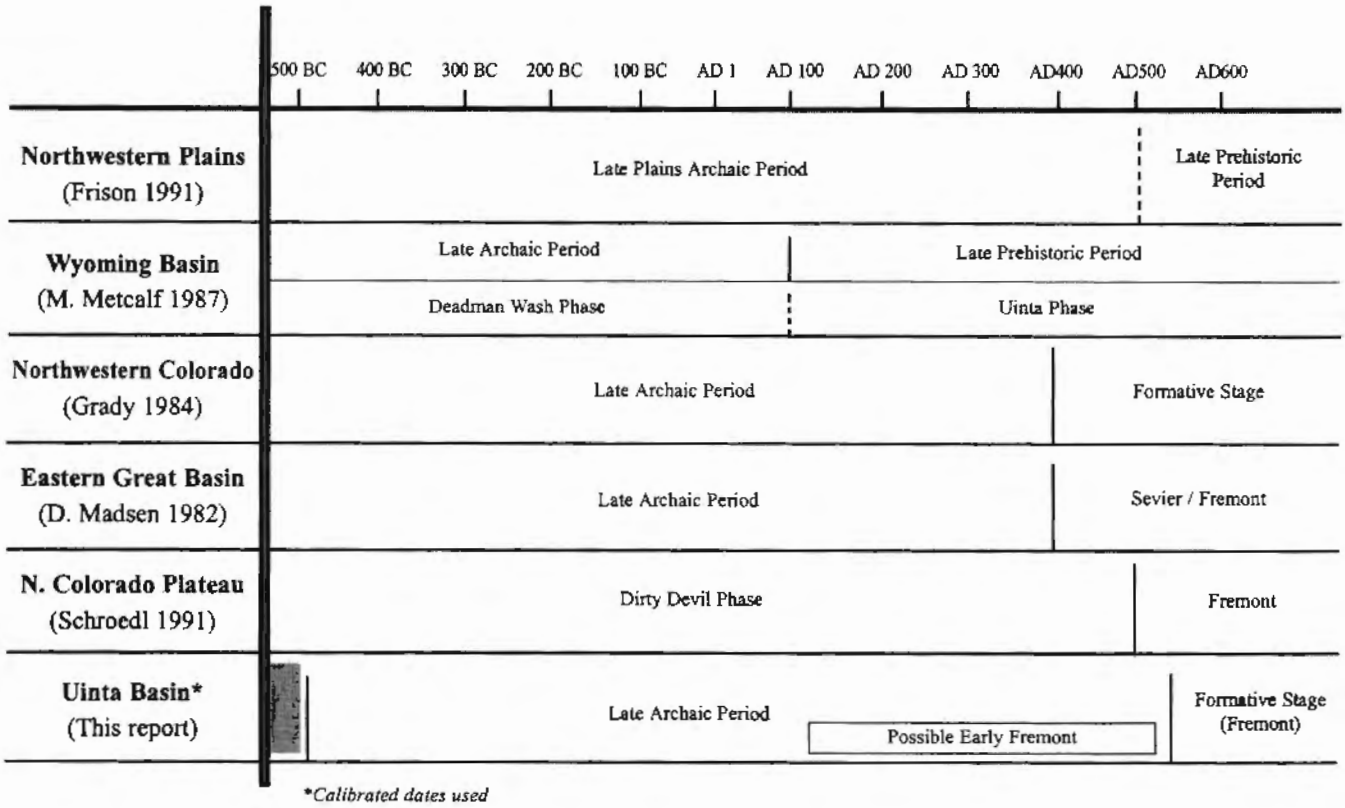

Figure 5.2. Various Late Archaic period sequences proposed for the Uinta Basin and contiguous areas.

southern portion of the study area (Figure 5.1). All temporal ranges and calendar dates used in this paper are based on calibrated dates as per Stuiver and Reimer (1993), Method A; all singular dates are median calibrated dates. The radiocarbon dates, presented in Appendix 5.1, represent that data reported through 1995.

THE ARCHAIC STAGE

The presence in the Uinta Basin of Paleoindian hunters and Early Archaic hunters and gatherers is implied by the recovery of temporally diagnostic projectile points, very few of which were recovered in stratigraphically controlled contexts. No cultural deposits have yielded radiocarbon dates consistent with a Paleoindian period (pre-6000 B.C.), and chronometric data in support of an Early Archaic period (6000 to 3000 B.C.) remains scant, making any statements regarding an Early Archaic presence in the region extremely tenuous. In fact, only seven radiocarbon dates attributable to the Early Archaic have been reported from the region, six of which were from sites in the Douglas Creek Arch area of northwestern Colorado. Most of these pre-3000 B.C. radiocarbon dates are from isolated hearth features and were generally not associated with temporally diagnostic artifacts. Given the paucity of chronometric data, archaeological evidence in support of Early Archaic or pre-Archaic temporal sequences remains largely circumstantial and will not be addressed in this paper. See Spangler (1995) for a more detailed discussion of temporally diagnostic evidence in support of the Paleoindian and Early Archaic periods.

The Middle Archaic Period

The first significant exploitation of the Uinta Basin region appears to have occurred during the Middle Archaic period (3000 to 500 B.C.). Several stratified Middle Archaic sites have been excavated throughout the region, and at least 54 radiocarbon dates have been reported from a variety of rockshelters and camp sites throughout the region. Additionally, dozens of sites containing temporally diagnostic Middle Archaic artifacts have also been reported. Nevertheless, the quantity of Middle Archaic radiocarbon dates remains insufficient to identify spatial and temporal patterns.

Typically, the Uinta Basin region has been included within temporal sequences offered for other regions, specifically the northwestern Plains (Frison 1991; Metcalf 1987), the Yampa River (Kalasz et al. 1990), and the northern Colorado Plateau (Schroedl 1976) (see Figure 5.2).

Given the fact these temporal sequences were developed from archaeological investigations in areas near or contiguous to the Uinta Basin, it may be theoretically untenable to apply those sequences to Uinta Basin archaeological phenomena that may or may not be similar to those described in contiguous areas. However, the radiocarbon data attributed to the Middle Archaic in the Uinta Basin are admittedly similar to patterns observed in northwestern Plains contexts.

For the purposes of this discussion, the Middle Archaic period is characterized by generalized hunting and gathering subsistence strategies that are differentiated from earlier adaptations primarily by projectile point types recovered from stratified cave and rockshelter contexts. Most researchers have characterized the Middle Archaic in the region on the basis of two factors: (1) An increase in human populations, as suggested by literally dozens of archaeological sites attributed to this period, and (2) The appearance of the distinctive McKean complex projectile points, which are considered reflective of cultural influence from the northwestern Plains. Given the comparatively large number of sites yielding radiocarbon dates or temporally diagnostic McKean complex artifacts, it is possible the Uinta Basin region was exploited by greater numbers of hunter-gatherers, and that these foragers may have been utilizing lithics technologies typically assigned to Middle Archaic contexts on the northwestern Plains. However, the continued proliferation of Elko series points may also imply some level of continued influence from the Great Basin.

At least 13 Middle Archaic radiocarbon dates have been reported from the Uinta Basin-Browns Park area, and at least 41 such dates have been reported from the Yampa River and Douglas Creek areas of northwestern Colorado. The spatial distribution of these data, while admittedly limited, suggest that environments east of the Green River were exploited to a greater degree than were similar areas west of the Green River. The distribution of these dates imply a sparse, but comparatively continuous occupation of the region. Although the Middle Archaic data reported from the Uinta Basin-Browns Park region remains scant, it appears that beginning about 3000 B.C. increasingly moist climatic conditions resulted in expanded grasslands that, in turn, precipitated an expansion in the herd size of various ungulates.

The increased availability of faunal resources corresponded with a dramatic increase in the number of archaeological sites, suggesting an increase in human populations. These groups of hunter-gatherers utilized lithics technologies defined in both Plains (McKean complex) and Great Basin (Elko series) contexts. This dichotomy may be reflective of differential adaptations in which in situ descendants of Early Archaic hunter-gatherers continued to practice Great Basin and northern Colorado Plateau subsistence strategies. At the same time, hunter-gatherers with cultural affinities to the northwestern Plains may have also exploited the Uinta Basin, bringing with them McKean complex artifacts.

The best evidence for Middle Archaic adaptations in the Uinta Basin comes from Deluge Shelter (Leach 1970), Thorne Cave (Day 1964), and 42Da61 and 42Da485 in the Browns Park area (McKibbin 1992). The collective data suggest Middle Archaic foragers may have selectively reduced the spatial range of their hunting and gathering activities. Lengthy occupations at Deluge Shelter (Leach 1970) and Thorne Cave (Day 1964) suggest foragers were staying longer at optimal locations, relying to a greater extent on floral resources and engaging in domestic activities such as the construction of basketry, ground stone tools, and specialized seed processing tools. Whereas sites yielding Early Archaic evidence reflect highly transitory occupations by small groups, Middle Archaic sites reflect comparatively less mobility. It is possible that increased availability of floral and faunal resources precipitated a modified adaptive strategy in which long-term base camps were also utilized during spring, summer, and fall. Populations may have aggregated in the late fall and winter in the sheltered parks along the Green River.

The size of foraging groups may have increased slightly. Increased availability of food resources may have reduced dietary stress, decreasing infant mortality and increasing life spans. In general, the demographics of forager populations continued to reflect family or extended family groups. Given the increased number of foraging groups in the Uinta Basin, these population aggregations may have been greater than during the Early Archaic.

A seasonal pattern of plant and animal exploitation continued to be practiced during Middle Archaic times, but this pattern typically involved exploitation of more spatially restricted areas. If the proposed model is correct, rockshelter sites like Deluge Shelter and Thorne Cave could be interpreted as base camps, each focused on the seasonal procurement of different resources. Smaller, special-use sites (e.g., temporary hunting camps, quarry sites) should be logistically located within an optimal foraging range around the base camps.

The reduced mobility may have enabled the emergence of food storage strategies (subsurface storage pits of suspected Middle Archaic age have been described at rockshelter sites in the Yampa River Basin). The types of resources being exploited by Middle Archaic hunter-gatherers remained the same as in Early Archaic times. However, the pattern of exploitation shifted to reflect greater resource availability, reduced mobility, and increased competition for those resources. It may be possible that environments east of the Green River were better suited than those west of the Green River for this kind of adaptive strategy, but that increased human populations probably precipitated an expansion into Uinta Basin areas that were not intensively exploited during earlier times. Some areas appear to have been sparsely exploited: no

Middle Archaic radiocarbon dates have yet been reported from the West Tavaputs Plateau or the western Uinta Basin.

As in Early Archaic times, Middle Archaic winter occupations should be found in sheltered parks along the Green and Yampa rivers where foragers reoccupied sites offering an optimal combination of permanent water, fuel resources, and access to raw lithic sources and winter ranges of deer and elk. Given the larger number of foraging groups in the area, these winter occupations may have precipitated competition for optimal site locations, or they may have resulted in larger population aggregations at those sites.

Rockshelters were utilized, as were open encampments that may have featured semisubterranean pithouses and subsurface storage pits. Middle Archaic residential architecture has not yet been described in the Uinta Basin; however, Early or Middle Archaic residential architecture has been reported in northwestern Colorado (Metcalf and Black 1988a, 1988b), in south-central Wyoming (McGuire 1984), and in the Clay Basin on the Utah-Wyoming border (Harrell and McKern 1986). Evidence of longer-term foraging activities in the Uinta Basin would likely be found in Browns Park where the archaeological evidence suggests favorable base camps were repeatedly occupied throughout the Archaic, Formative, and Shoshonean stages.

The Late Archaic Period

The pattern of seasonal mobility evident in the Middle Archaic appears to have changed little through the early part of the Late Archaic period (500 B.C. to A.D. 550). Sites with radiocarbon dates after about 500 B.C. no longer contain McKean complex artifacts, perhaps implying a withdrawal of Plains influences. The continuation of Elko series projectile points early in the Late Archaic sequence, as well as the appearance of bow-and-arrow technology perhaps as early as 50 B.C. (McKibbin 1992) suggest a resurgent influence from the eastern Great Basin. The appearance of maize horticulture by A.D. 250 also suggests influence from the northern Colorado Plateau (Talbot and Richens 1994).

In general, the Late Archaic was characterized by the appearance of radically new technologies, in particular the introduction of the bow and arrow, the incorporation of maize horticulture into a foraging subsistence strategy and an increase in sedentism, both at hunter-gatherer encampments and at farmsteads focused on maize cultivation. Also evident was an increase in the complexity of storage strategies, including the appearance of bell-shaped storage pits and masonry-and-adobe structures. The various Late Archaic temporal sequences proposed for the Uinta Basin region are summarized in Figure 5.2.

At least 57 Late Archaic radiocarbon dates have been reported from the Uinta Basin, Browns Park, and Dinosaur National Monument areas. Another 55 Late Archaic radiocarbon dates have been reported from the Yampa River and Douglas Creek areas (all dates summarized in Spangler 1995; see also Appendix 5.1). If the distribution of radiocarbon dates can be considered an accurate measure of Late Archaic occupations in the region (Figure 5.3), several conclusions can be postulated: (1) Hunter-gatherer lifeways persisted uninterrupted throughout the Late Archaic; (2) Late Archaic encampments in the region reflect procurement of faunal resources by mobile bands of hunters and longer-term encampments where exploitation of floral resources was also a common activity (McKibbin 1992; Tucker 1986); (3) The earliest Late Archaic radiocarbon dates are generally associated with exploitation of wild floral and faunal resources along the Green River, in particular the Dinosaur National Monument, Browns Park and Clay Basin areas (McKibbin 1992; Tucker 1986); (4) Bow-and-arrow technology may appear in the artifact assemblage as early as 50 B.C. (McKibbin 1992), but it does not replace the atlatl until several hundred years later (Talbot and Richens 1994); (5) Horticulture was firmly established in the archaeological record by A.D. 250, if not earlier (Coltrain 1994a, 1994b, 1994c; Talbot and Richens 1994); (6) Temporary or poorly delineated architecture appears in the Uinta Basin as early as 300 B.C. (McKibbin 1992; Tucker 1986); and (7) Permanent architecture featuring floors of compacted soils and internal firepits, postholes and storage pits appears about A.D. 50 (Truesdale 1989), becoming increasingly complex over the subsequent centuries with the addition of stone and adobe masonry construction (Tucker 1986).

The most convincing evidence of a Late Archaic to Formative transition comes from the Steinaker Gap site (42Un 2004) in the central Uinta Basin (Talbot and Richens 1994). In a summary of the archaeological data, researchers concluded the site was occupied between about A.D. 250 to 400 by individuals who constructed temporary habitations without interior fire hearths, implying a warm-season occupation reflective of "agricultural farmsteads." No evidence of cool-season occupations was observed. Storage pits were constructed, possibly for the storage of maize, cheno-ams, cattail, and other food resources. A ditch system was constructed, implying that irrigation was a critical aspect of maize horticulture.

Based on stable carbon isotope studies of osteological remains, an inferred dependency on maize of about 50 percent was postulated (Coltrain 1994c). Because three of four burials were infants of approximately the same age and closely contemporaneous as to time of burial, occupation by more than a single family was inferred. The presence of shells possibly originating from coastal California or the Pacific Northwest implied that a complex trade network was present. The co-occurrence of Rose Springs arrow points and unidentified atlatl darts indicated that the transition from the latter to the former was taking place between A.D. 250 and 400 and that occupants were comfortable with both technologies (Talbot and Richens 1994:251–252).

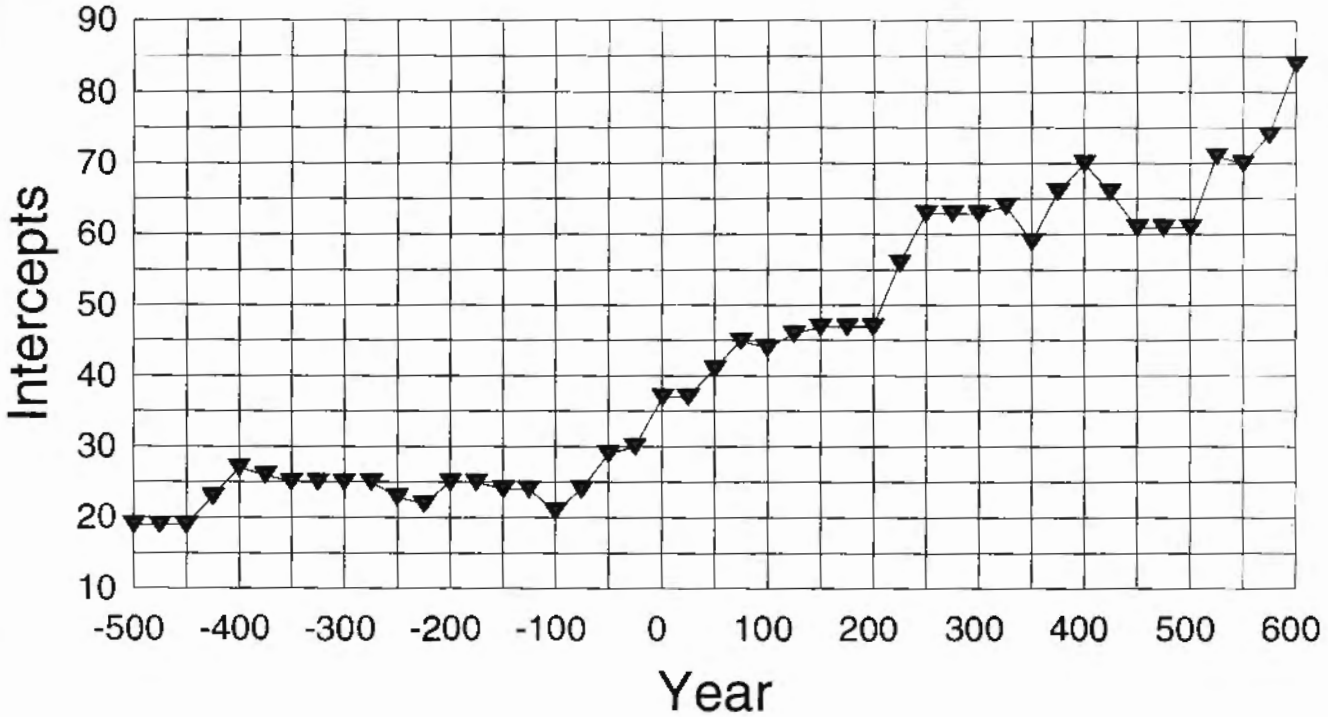

Figure 5.3. Late Archaic period radiocarbon date frequency curve for the greater Uinta Basin area (500 B.C. to A.D. 550), based on calibrated dates (two-sigma ranges).

Evidence of early maize horticulture appears to be confined to the central Uinta Basin and Browns Park areas; to date, there is no convincing radiocarbon evidence of maize horticulture east of the Green River (e.g., Yampa River, Douglas Creek). There is also minimal evidence of maize horticulture in the canyon drainages south of the Uinta Basin. One exception may be maize samples from a large stone and adobe storage facility in Nine Mile Canyon that yielded a calibrated radiocarbon date of A.D. 360 (Spangler 1995). This site is more reflective of Basketmaker II sites on the northern Colorado Plateau than they are of the hunter-gatherer encampments of the Browns Park-Clay Basin area (cf. McKibbin 1992; Tucker 1986).

Masonry storage structures have not been described in Late Archaic contexts in Browns Park or Clay Basin; however, they are common in the Yampa River area of Dinosaur National Monument (Burgh and Scoggin 1948), although none have yet produced Late Archaic radiocarbon dates. The Nine Mile Canyon site could imply the movement of Basketmaker II-like peoples or horticultural technology into the southern periphery of the Uinta Basin about A.D. 350. It would be speculative to suggest a relationship between maize horticultural activities in Nine Mile Canyon and concurrent activities in the Uinta Basin. However, the burial data from Steinaker Reservoir from this same period also feature Basketmaker II-like characteristics. Such influences suggest a strong northern Colorado Plateau influence on Late Archaic peoples in this region (Talbot and Richens 1994).

As effectively summarized by Janetski (1993), maize horticulture, storage facilities, and pithouse architecture had all become well established in the centuries prior to A.D. 500 at numerous sites north of the Colorado River. Whether this represents a migration of Basketmaker II peoples into the northern Colorado Plateau (M. Berry 1982; Coltrain 1994a, 1994b, 1994c) or the accretion of Basketmaker-like traits by indigenous Late Archaic peoples (Wilde et al. 1986) remains a matter of considerable debate and little consensus.

It can be stated with some confidence that the Late Archaic was a period of dramatic change in areas north of the Colorado River and that this change included the appearance of new technologies and lifeways, some with generalized Basketmaker-like similarities. An actual migration of Basketmaker II peoples into the Uinta Basin region is not supported by the existing data, although it is possible that small migratory groups of people with Basketmaker-like traits may have occupied sites like Rasmussen Cave and Big Wash Cave on the Tavaputs Plateau, and Steinaker Gap in the central Uinta Basin. These groups may have been responsible for the introduction of maize horticulture into the Uinta Basin region, but such conclusions are conjectural given the data currently available.

In contrast to the possible northern Colorado Plateau influences, copious data from Browns Park and Clay Basin

prompted McKibbin (1992) to suggest a temporal sequence corresponding to that defined for the Wyoming Basin and northwestern Colorado. McKibbin's investigations demonstrated a continuity of occupations, traits and subsistence patterns that began between 200 B.C. and A.D. 150 and persisted through the Late Prehistoric. The florescence of Fremont culture was not observed in the Browns Park region, although maize may have been grown or processed in Browns Park by about A.D. 250 (1992:418–419), a date corresponding with horticultural activities at Steinaker Gap (Talbot and Richens 1994). McKibbin interpreted the data as

> reflecting a transition from the Archaic to Late Prehistoric at about 1700–1800 B.P. This transition is marked by notable increases in dated components that cannot be accounted for solely on the basis of site preservation, the introduction of the bow-and-arrow (which is manifested in both regions by the florescence of Rose Springs points), and by a general diversification in resource utilization [McKibbin 1992:417].

McKibbin's assignment of a Plains temporal sequence to sites in the Browns Park area is extremely tenuous given the evidence for possible expansion of Colorado Plateau influences into the contiguous Uinta Basin at the same time, and the fact that radiocarbon date frequency patterns are similar for both the Uinta Basin and Browns Park areas (Spangler 1995; see also Figure 5.3). Unlike the Uinta Basin to the south, the northwestern Plains people appear to have been slower to adopt transitional technologies and lifeways (Frison 1991).

Semipermanent architecture is evident at some southwestern Wyoming sites, but does not become common in the archaeological record until after A.D. 500. Bow-and-arrow technology may have appeared as early as A.D. 250 in the northwestern Plains, but an A.D. 500 date is generally accepted by Plains archaeologists. Maize horticulture appears never to have been adopted in the northwestern Plains, probably due to environmental conditions unfavorable for horticulture. Conversely, Plains influence on Uinta Basin peoples from 500 B.C. to A.D. 500 cannot be adequately demonstrated. Given the presence of bow-and-arrow technology and maize, the Browns Park data could be interpreted as evidence of seasonal hunting and gathering camps associated with Late Archaic horticultural farmsteads in the Uinta Basin.

It should also be noted that hunter-gatherer encampments in the northwestern Plains are considerably more complex than anything yet described in the Uinta Basin. Communal hunting activities, a characteristic subsistence strategy on the Plains, may have occurred in the Uinta Basin but cannot yet be demonstrated archaeologically. Likewise, the procurement and processing of significant quantities of large mammals (antelope, bison) at a single site was a common feature of Late Archaic adaptations in southwestern Wyoming, but no significant kill or processing sites have been identified in the Uinta Basin.

Several sites in the Browns Park area share affinities with the procurement-processing sites in the Wyoming Basin to the north, but the Browns Park sites are considerably less complex. The differences in size and complexity of hunter-gatherer encampments may be a function of different topographies. The open plains of Wyoming allowed aggregations of large herds of ungulates; this herd behavior was subsequently conducive to exploitation by larger human populations. On the other hand, human populations in the more topographically varied Uinta Basin were forced to exploit smaller herds of deer, elk, bison, and antelope; these smaller herds may have afforded fewer opportunities for population aggregations.

Influences from the eastern Great Basin also remain a possibility. In the eastern Great Basin, the Late Archaic was characterized by a decrease in population, based on the decrease in the number of sites yielding radiocarbon dates (Madsen 1978, 1982). This depopulation apparently coincided with an increase in Late Archaic populations in the Uinta Basin (based on an increase in number of sites yielding radiocarbon dates). The appearance of Great Basin-influenced Rose Springs projectile points in preceramic Uinta Basin contexts could be additional evidence of an eastward expansion of Great Basin hunters and gatherers into the previously sparsely populated Uinta Basin. This possibility has not been tested, and no formal hypotheses have been offered for the Uinta Basin, although Gordon et al. (1983) suggested this possibility in their discussion of Archaic settlement patterns in northwestern Colorado.

When taken collectively, the Uinta Basin data suggest that two distinct settlement patterns or subsistence strategies had emerged by the end of the Late Archaic, one focused on mobility and the procurement of wild plants and animal resources, and the other reflected a mixed farming and foraging strategy that resulted in a marked increase in sedentism. The co-occurrence of hunter-gatherer sites (e.g., McKibbin 1992) and semisedentary farmsteads (e.g., Talbot and Richens 1994; Tucker 1986) may reflect dynamic subsistence strategies employed by the same groups of people, some who remained at horticultural sites and others who engaged in procurement of wild floral and faunal resources.

A population aggregation may have occurred in the fall when cultivated resources were harvested or in winter months when sedentary populations became mobile to exploit the winter ranges of deer, elk, and bighorn sheep. Based on the distribution of radiocarbon dates, the hunter-gatherer strategy appears to have been geographically restricted to the Green River drainage in the Browns Park, Clay Basin, and Dinosaur National Monument areas. The farmer-forager strategy appears to have been focused along Green River tributaries of Nine Mile Canyon, Cliff Creek and Ashley Creek, and perhaps the Yampa River.

Late Archaic sites in the Douglas Creek Arch region of northwestern Colorado appear more reflective of hunting and gathering subsistence strategies with Great Basin influences; dependence on horticulture and increased sedentism has not been convincingly demonstrated in this region. Despite the abundance of Late Archaic radiocarbon dates, temporally diagnostic artifacts in stratigraphically controlled contexts are surprisingly rare in northwestern Colorado. For example, Rose Springs arrow points are not abundant in northwestern Colorado, and none have been reported from well-controlled deposits radiocarbon dated prior to about A.D. 400 (Grady 1984). And only one site in the region has yielded evidence of Late Archaic horticulture (Baker 1992a), but these data are not convincing. No hypotheses have been offered as to why peoples in the Uinta Basin would quickly embrace new lifeways and technologies at the same time contemporaneous peoples in northwestern Colorado retained basic Archaic hunter-gatherer lifeways.

The increase in sedentism and increasing reliance on maize horticulture has prompted recent researchers to extend the Fremont culture in the Uinta Basin as early as A.D. 200. These subsistence strategies and settlement patterns are admittedly similar to Basketmaker II strategies in the Southwest, which have traditionally been assigned to the Formative stage. Talbot and Richens (1994:254) have argued that these peoples "are unquestionably early Fremont." Gordon Tucker (1986) has also argued for an early Fremont Cliff Creek phase from A.D. 350 to 600 in the Uinta Basin, based on the presence of Fremont-like architecture at the Cockleburr Wash site.

The assignment of the Steinaker Gap (Talbot and Richens 1994) and Cockleburr Wash (Tucker 1986) to the Fremont temporal sequence is problematic given the fact that both sites lack important traits considered characteristic of Formative stage adaptations. Although the Steinaker Gap site yielded convincing evidence of heavy reliance on maize, no evidence of ceramics or permanent architecture was reported. Although the Cockleburr Wash site contained evidence of permanent architecture, no evidence of ceramics or horticulture was reported. Rather than engage in an esoteric and perhaps irrelevant debate over what constitutes "Fremont" or Formative cultures, both sites are herein considered Late Archaic sites offering evidence of in situ transition from a hunting and gathering lifeway to increasing dependence on maize and a concomitant increase in sedentism.

Summary

Human adaptations during the Archaic Stage were characterized by a sparse—but relatively consistent—hunter-gatherer subsistence strategy and settlement pattern featuring seasonal mobility focused on the procurement of plant and animal resources. This strategy was likely characterized by mobility within reduced spatial ranges during periods of increased effective moisture, and longer-distance forays during periods of climatic deterioration. The Late Archaic was characterized by a gradual increase in sedentism, the eventual incorporation of horticulture into local economic strategies, and the utilization of bow-and-arrow technologies.

How and when these changes in local lifeways appeared in the Uinta Basin archaeological record is not clear from the few sites investigated. Temporary architecture appears to have become part of the Late Archaic settlement patterns by about 300 B.C. in the Browns Park area (McKibbin 1992; Tucker 1986) and the Cockleburr Wash site (Tucker 1986). Bow-and-arrow technologies may have appeared in the Uinta Basin region as early as 50 B.C. (McKibbin 1992), but an A.D. 200 date is a more conservative estimate (Spangler 1995).

Maize horticulture appears to have a long history in the Uinta Basin region, perhaps as early as A.D. 50. Based on evidence from the Steinaker Reservoir area (42Un2004), a well-developed subsistence strategy based on maize horticulture was in place by A.D. 250 (Coltrain 1994a, 1994c). These data are consistent with the presence of maize in Nine Mile Canyon (42Cb667) dated to about A.D. 360 (Spangler 1993a), but evidence of a mixed farming-foraging subsistence strategy is lacking outside the central Uinta Basin and Browns Park areas. Permanent architecture reflective of increased sedentism appears in the archaeological record perhaps as early as A.D. 84 at Burnt House Village (Truesdale 1990), but certainly by about A.D. 400 at Cockleburr Wash (Tucker 1986).

These data suggest that two distinct lifeways had begun to emerge perhaps as early as A.D. 1, but certainly by A.D. 200. One strategy, evident in the Browns Park and Clay Basin areas, was focused predominantly on the procurement of wild plant and animal resources. These groups may have been practicing foraging strategies reflective of both the northwestern Plains and the eastern Great Basin. The second strategy appears to have involved some level of sedentism, perhaps seasonal sedentism, that precipitated the construction of increasingly complex residential structures. These structures may have been associated with incipient maize horticulture, but also could have functioned as relatively permanent base camps for the exploitation of wild plants and animals in a more geographically restricted area. This strategy is more reflective of influence from the northern Colorado Plateau. A dramatic displacement of Archaic hunter-gatherers is not evident in the archaeological data reported.

Based on the comparative abundance of radiocarbon dates attributed to Late Archaic occupations, it is suggested that the Uinta Basin experienced a steady population increase after about 500 B.C., and that populations increased very rapidly after A.D. 1. This population increase apparently occurred at the same time the eastern Great Basin

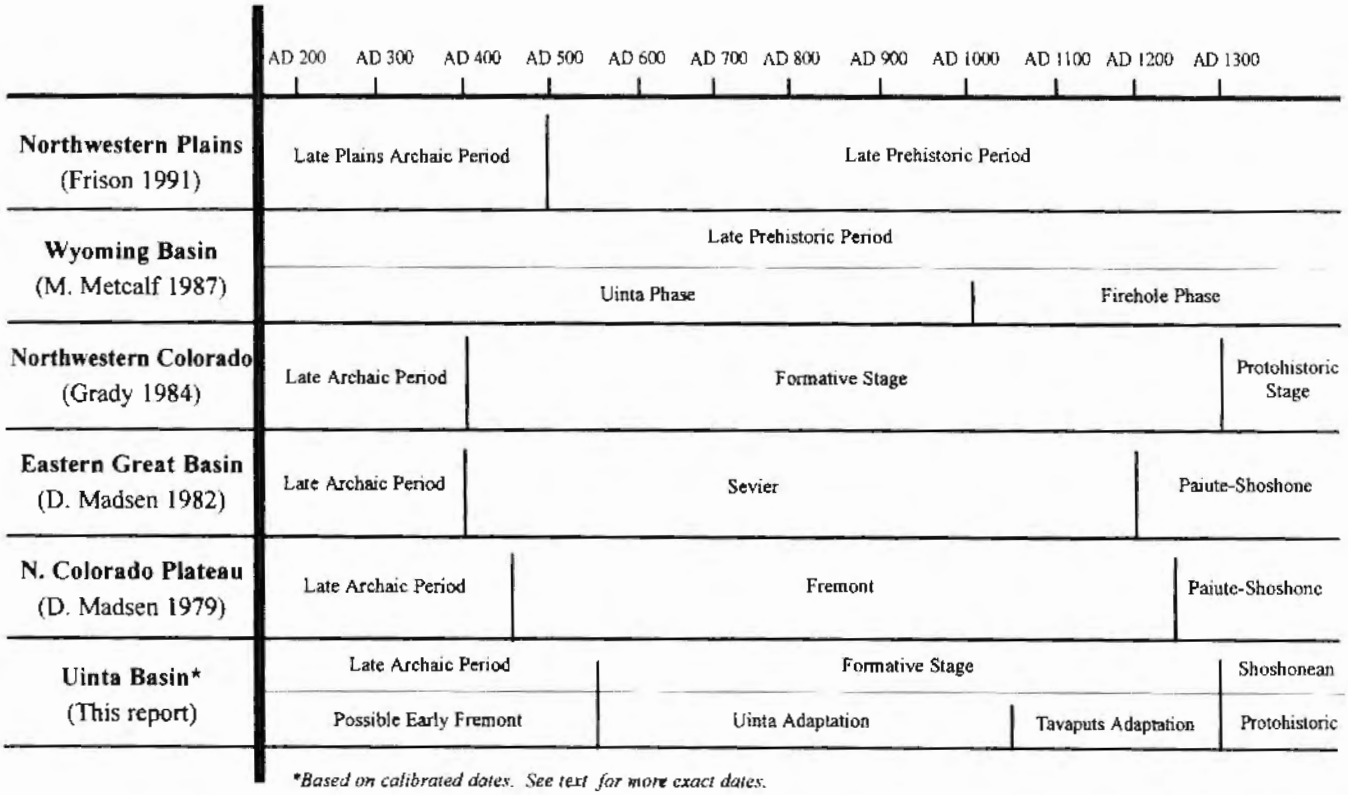

Figure 5.4. Various formative stage sequences proposed for the Uinta Basin and contiguous areas.

experienced a decrease in population, presumably due to rising lake levels that flooded shoreline environments previously rich in floral and avian resources. It is suggested that a population increase in the Uinta Basin region can be attributed, in part, to a movement of eastern Great Basin foragers into the region already occupied by Uinta Basin foragers who may have been ethnically related to the immigrants.

The paucity of Plains projectile points may imply a withdrawal of Plains influence during this period due to increased competition with foraging populations having Great Basin cultural affinities. The appearance of bow-and-arrow technology in the Uinta Basin by A.D. 200 (or earlier) may be attributed to continued cultural association between Uinta Basin and eastern Great Basin kin groups.

The appearance of semisubterranean brush residential structures in the Browns Park area (McKibbin 1992; Tucker 1986) may also be evidence of influence from the eastern Great Basin. Great Basin peoples, adapted to sedentary foraging in areas around the Great Salt Lake, may have foraged in spatially reduced ecozones that permitted the construction of semipermanent residential structures. As human populations increased throughout the Late Archaic period, competition for food resources increased. During periods of climatic instability, the unpredictability of floral and faunal resources would have intensified this competition.

Beginning about A.D. 200, some groups added horticulture to their hunting and gathering subsistence strategies. Horticultural technologies may have been introduced to the area by small groups of farmers who were practicing a Basketmaker II-like strategy. Horticulturalists may have experimented with maize cultivation in Tavaputs Plateau drainages, but this region was not extensively exploited at this time. As horticulture became increasingly successful in the Uinta Basin, Late Archaic populations became more sedentary, expending greater energy in the construction and maintenance of residential structures. Temporary brush structures were eventually replaced by formal semisubterranean pithouse architecture featuring floors of compacted soils and occasionally masonry wall construction. This settlement pattern may have had its origin on the northern Colorado Plateau.

Although horticulture mandates significant commitment of time and energy, horticultural populations appear to have made seasonal forays into the Browns Park, Dinosaur National Monument, Blue Mountain, and Douglas Creek areas to procure faunal resources. Floral resources may also have been procured, but these resources became increasingly subordinate to domesticated maize in the cen-

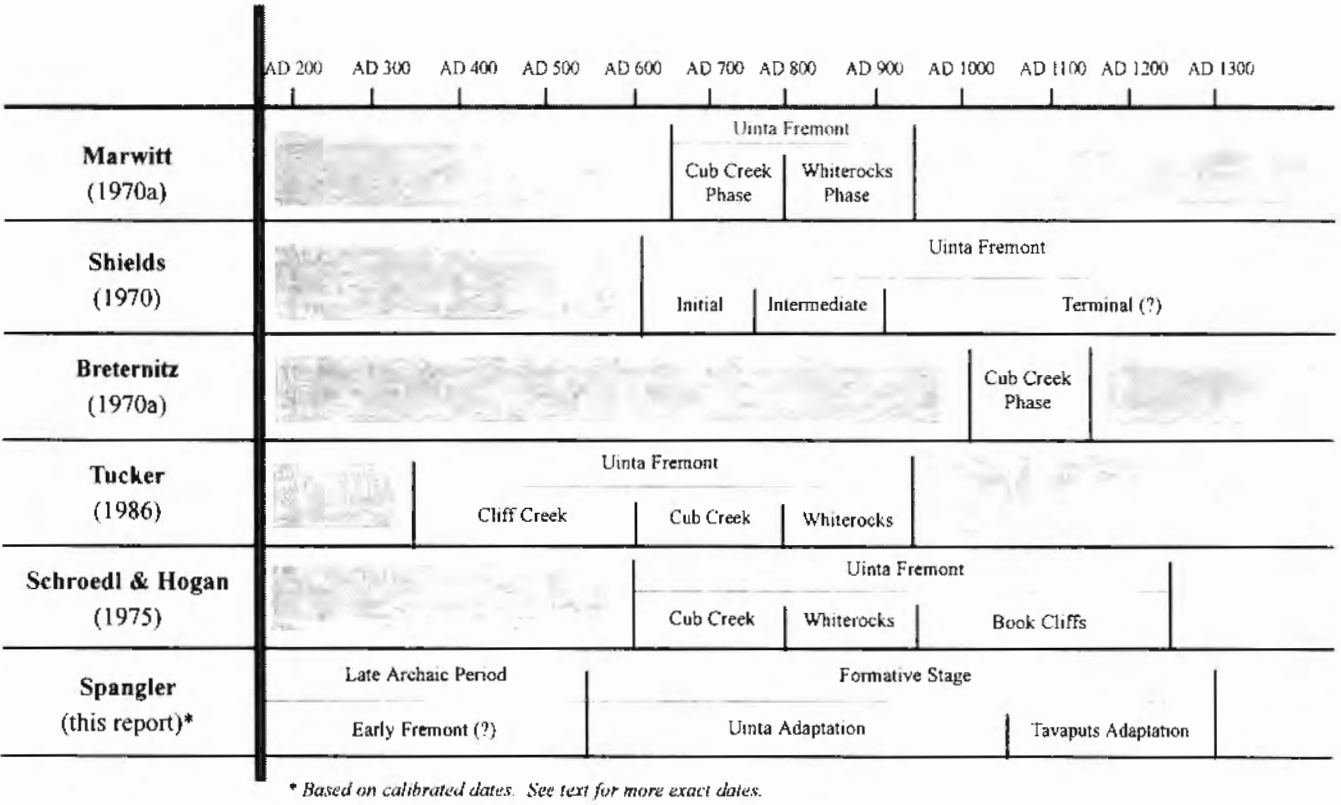

Figure 5.5. Various Fremont culture phase sequences proposed for the greater Uinta Basin area.

tral Uinta Basin. It is suggested that many hunting and gathering encampments in the Browns Park area are actually indicative of an emerging farming-foraging strategy.

Maize recovered at such sites is probably reflective of stored food resources carried into the area by farmers engaged in seasonal foraging activities. However, it is emphasized that not all Uinta Basin populations were engaged in horticultural activities. In the Yampa River and Douglas Creek areas, in particular, a continuation of differential Archaic hunting and gathering strategies is evident. Foragers in this region were much slower to incorporate horticulture into local subsistence strategies; consequently, settlement patterns reflect considerably less sedentism.

Based on the significant increase in the number of radiocarbon dates during the latter half of the Late Archaic period, it is possible the area experienced an increase in population. This may be attributed to an influx of northern Colorado Plateau peoples practicing a Basketmaker II-like strategy, or perhaps eastern Great Basin peoples displaced by rising lake levels. It is also plausible that horticulture and the concomitant increase in sedentism improved fertility rates, decreased infant mortality, and generally increased the biological viability of in situ populations. It is also possible that the radiocarbon frequency curve is statistically biased by intensive investigations at Steinaker Gap and in Browns Park that have produced the most quantitative Late Archaic radiocarbon dates from the Uinta Basin.

THE FORMATIVE STAGE

Defining the spatial and temporal range of the Fremont culture in the Uinta Basin and Tavaputs Plateau is problematic and perhaps futile given the lack of consensus as to what constitutes the Fremont culture elsewhere. Although there is considerable disagreement as to the spatial and temporal nature of Formative stage archaeological phenomena in the Uinta Basin and Tavaputs Plateau (Figures 5.4 and 5.5), a comparison of these data to concurrent manifestations in surrounding areas of the northern Colorado Plateau, eastern Great Basin, and northwestern Plains would suggest that peoples in these areas were engaged in variable subsistence and settlement patterns that included both farming and foraging. As suggested by Madsen (1989), the term Fremont is retained as an "umbrella" to describe a multitude of adaptations in the eastern Great Basin and northern Colorado; however, it is not intended to imply that Formative groups were homogenous or even ethnically related.

The term Fremont as used in this paper is intended to describe a variety of different adaptations from about A.D.

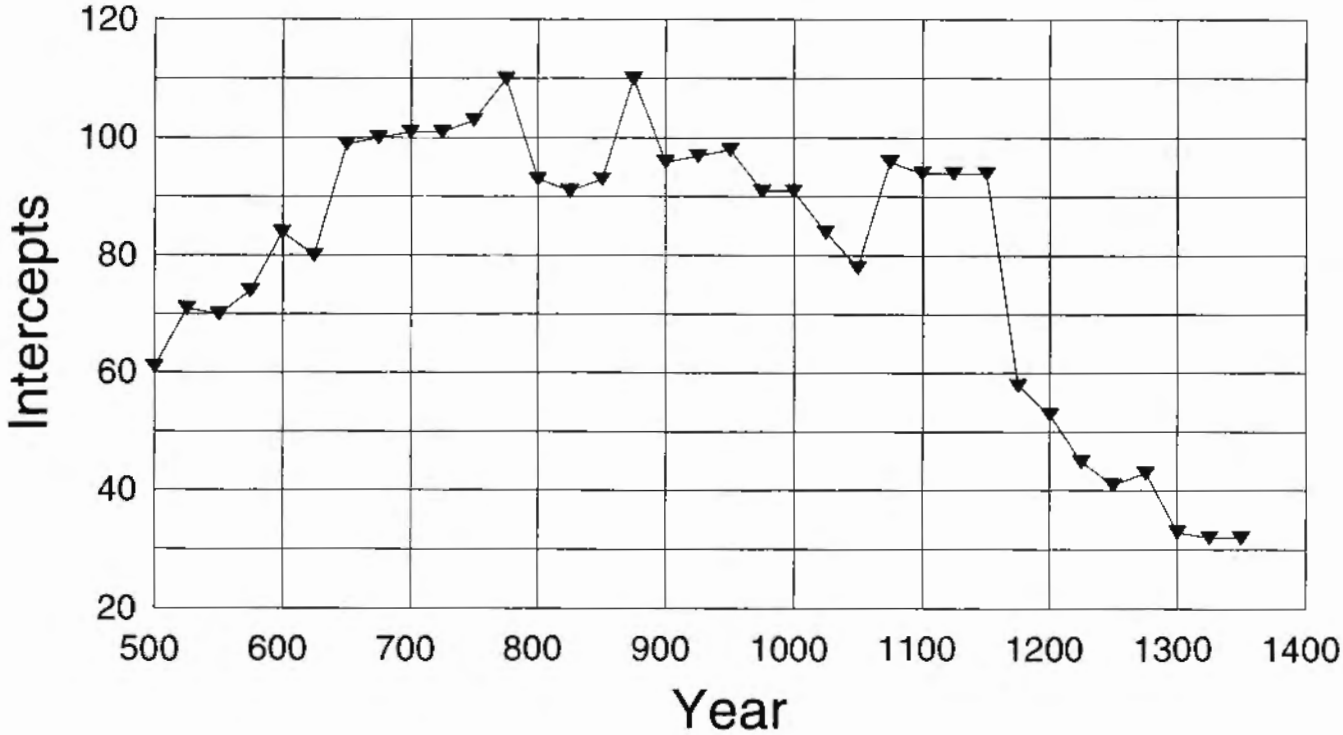

Figure 5.6. Formative stage radiocarbon date frequency curve for the greater Uinta Basin area (A.D. 550 to 1300), based on calibrated dates (two-sigma ranges).

550 to 1300, a period generally referred to as the Formative stage. These adaptations were characterized by a *lack* of cultural homogeneity as human populations adapted to different environments in decidedly different ways at different times. Variable subsistence strategies (predominantly horticulture, mixed horticulture and foraging, and exclusive foraging) consequently mandated different settlement patterns both in time and space. The Formative stage temporal span of about 750 years should not be interpreted to imply that all areas of the Uinta Basin and Tavaputs Plateau were occupied continuously or concurrently.

A somewhat continuous occupation of the Uinta Basin by Fremont-like peoples can be demonstrated from about A.D. 250 to 1000; however, this occupation gradually decreased in intensity after about A.D. 700, and cannot be convincingly demonstrated after about A.D. 1000 (Figure 5.6). A Fremont-like occupation in the Tavaputs Plateau area can be demonstrated perhaps as early as A.D. 800, but a florescence of horticulture, sedentary lifeways, and complex storage strategies did not occur until about A.D. 1000, disappearing from the archaeological record by about A.D. 1300. The appearance of surface masonry architecture in northwestern Colorado after about A.D. 1000 (Creasman 1981) would appear to correspond with adaptive strategies described for the Tavaputs Plateau (Spangler 1993a, 1993b; also see Spangler, Chapter 3).

A rather continuous occupation of the Dinosaur National Monument and Browns Park areas by foragers, presumably Fremont peoples with access to maize and ceramics, has been demonstrated by a wealth of radiocarbon dates representative of the entire Formative stage sequence (McKibbin 1992; Tucker 1986). The frequency of radiocarbon dates associated with these forager occupations appear to have increased and decreased in direct proportion to an increase or decrease in horticultural occupations in the central Uinta Basin.

It would seem logical that Fremont peoples in the Uinta Basin and Tavaputs Plateau would have been influenced to a greater or lesser degree by people in surrounding areas. For example, architectural styles in the Uinta Basin share numerous affinities with the Willard and Grantsville sites in the eastern Great Basin (Steward 1933b) and with Snake Rock Village in the San Rafael Swell (Aikens 1967). The dry-laid masonry architectural styles common to the Tavaputs Plateau are virtually absent elsewhere in the Fremont culture area (Spangler 1993b), but are somewhat similar to architectural manifestations in the Yellowjacket area of southwestern Colorado (Fewkes 1917a, 1917b). However, three important sites—Valley Village and Sky House in Nine Mile Canyon (Gillin 1938) and the Turner-Look site on the southern escarpment of the Book Cliffs (Wormington 1955)—featured adobe-rimmed firepits or prepared clay floors that are strikingly characteristic of Uinta Basin architectural features. Similar variability is observed with

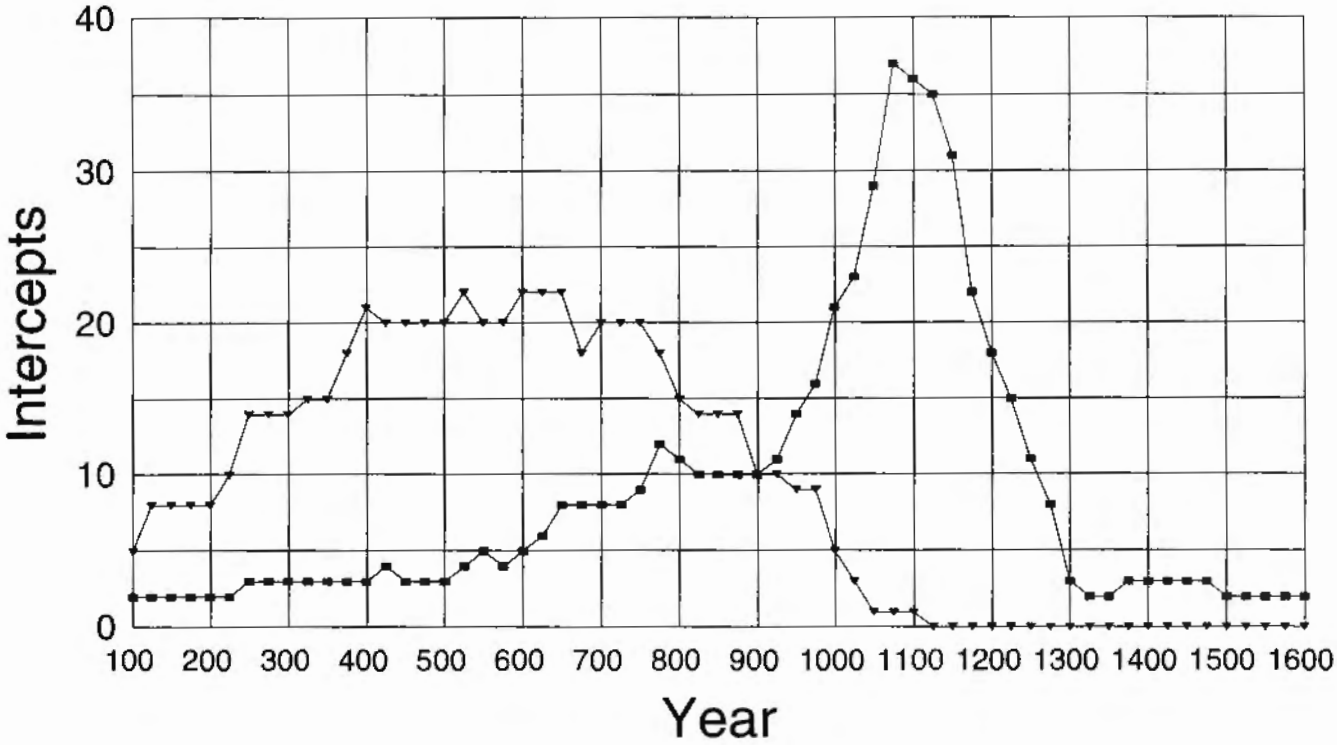

Figure 5.7. Radiocarbon date frequency curve comparison of sedentary horticultural sites north and south of the Duchesne and White rivers, based on calibrated dates (two-sigma ranges).

settlement patterns, storage strategies, and artifact assemblages.

Differences in settlement patterns may have reflected differences in local topographies. In the Uinta Basin, residential sites were generally located in broad alluvial areas and Pleistocene river terraces in the Uinta Mountain foothills with easy access to permanent steams (Ambler 1966; Shields 1967). In the Tavaputs Plateau area, residential sites were narrowly distributed along stream terraces and on outcrops in deeply dissected canyons, primarily Nine Mile, Hill Creek, and Willow Creek canyons. Access to permanent water was a critical factor in site location in both regions; access to pinyon-juniper resources and arable lands were also critical factors for site location in the Tavaputs Plateau (Spangler 1993b; see also Spangler, Chapter 3).

There are also significant differences in storage strategies between the two regions (Spangler 1993b; 1995) that may reflect different subsistence strategies, as well as differences in local topography. In the central Uinta Basin, Fremont horticulturalists employed a variety of subsurface storage cists and surface storage structures, usually in close proximity to residential structures. In contrast, horticulturalists in the Tavaputs Plateau region employed a complex storage strategy that included large and energy-expensive storage structures on cliff ledges and crevices, as well as camouflaged caches in protective overhangs. Whereas the Uinta Basin storage structures imply expedient access by resident populations, the pattern observed in the Tavaputs Plateau implies periodic abandonment of the region, either seasonally or for longer periods of time.

Another significant difference between the two regions was the utilization of ceramics. In the Uinta Basin, calcite- or limestone-tempered Uinta Gray pottery is abundant at residential sites after about A.D. 550. In the Tavaputs Plateau area, the ceramic assemblage is dominated by Emery Gray types believed to have been tempered with basalt. Unlike the Uinta Basin, where ceramics appear to have been a moderately significant part of the Fremont lifeway, pottery sherds are extremely rare at Tavaputs Plateau sites; in fact, many sites of suspected Fremont cultural affiliation are aceramic.

Consequently, two distinct adaptations are herein discussed. The Uinta adaptation (A.D. 550 to 1000) includes various foraging and horticultural strategies evident in the

archaeological record of the Uinta Basin, Browns Park, and Dinosaur National Monument areas from about A.D. 550 to 1000 (calibrated). This adaptation is characterized by permanent architecture, significant reliance on maize, the utilization of ceramics, and the aggregation of some populations into small villages. This period was also characterized by a continuation of hunting and gathering in the Dinosaur-Browns Park area where some foraging camps during this period also yielded evidence of ceramics or maize subsistence. The adaptation may extend beyond A.D. 1000 (calibrated), but that cannot yet be supported by chronometric data.

No Uinta Basin Fremont residential sites have yet yielded radiocarbon dates after about A.D. 1000 (Figure 5.7), and the chronometric data, although limited, would suggest that sedentary lifeways and horticultural strategies may have been abandoned about that time. The continuation of maize and ceramics at foraging sites in the Dinosaur-Browns Park region, and the florescence of maize and sedentism in the Tavaputs Plateau area after that time, imply that Fremont peoples did not abandon the region. Rather, they shifted subsistence strategies and settlement patterns, perhaps in response to climatic factors or competition with foragers.

The Tavaputs adaptation (A.D. 1000 to 1300) includes various foraging and horticultural strategies evident in the archaeological record of the Tavaputs Plateau. This region is dissected by deep canyons with limited natural resources necessary for maize horticulture; however, maize horticulture appears to have been a dominant activity at most Tavaputs sites investigated thus far. Human occupations appear to have been limited to portions of those drainages (e.g., Nine Mile Canyon, Hill Creek, Willow Creek) that offered an optimal combination of permanent water, arable lands, and pinyon-juniper resources. Residential structures were characterized by abundant dry-laid masonry construction and settlement patterns featuring clusters of semisubterranean pithouses on stream terraces and surface masonry architecture on rock outcrops, pinnacles and cliff ledges, many in arguably defensive postures some 100 to 200 m above permanent water sources.

Any proposed reconstruction of Fremont lifeways is complicated by the variety of subsistence strategies and settlement patterns evident in the region after A.D. 550. The delineation of a Formative stage, as used in this report, is based on several factors: (1) Horticulture appears to have assumed an even greater, perhaps dominant, importance in prehistoric subsistence (Coltrain 1994a, 1994b, 1994c); (2) Storage structures, typically associated with the production of food surpluses, became increasingly large and reflected a variety of storage and caching strategies (Spangler 1993b); (3) Residential architecture became increasingly complex with the addition of prepared clay floors, adobe-rimmed firepits, and coursed masonry architecture (Breternitz 1970a; Shields 1967; Spangler 1993b); (4) Enhanced social complexity was reflected by population aggregations into small villages and farmsteads (Breternitz 1970a; Jennings and Sammons-Lohse 1981; Marwitt 1970a), and perhaps by the construction of ceremonial architecture (Spangler 1995); (5) An elaborate rock art and figurine complex with broad regional implications appeared in the archaeological record (Morss 1954); and (6) Ceramics were added, to a greater or lesser degree, to local lifeways (Spangler 1995).

It is recognized that different types of human adaptations to a varied environmental landscape likely occurred throughout the Formative stage, but these manifestations may not yet be identified or have not been subjected to chronometric analyses. Various phase sequences proposed for the Uinta Basin are rejected as inadequately supported by quantitative radiocarbon data. The continued utilization of phase nomenclature based on limited and noncorroborating investigations constitutes little more than phase-stacking (Berry and Berry 1986), a practice that is not only theoretically indefensible but one that creates illusions of temporal continuity that may, in fact, be nothing more than different (and not necessarily sequential) adaptations in time and space. Various temporal sequences proposed by various researchers are summarized in Figures 5.4 and 5.5.

The Uinta Adaptation

As previously discussed, the Uinta adaptation ranges from about A.D. 550 to 1000, and includes a variety of horticultural and foraging subsistence strategies. Beginning about A.D. 250, horticultural strategies were implemented by some groups in the Uinta Basin, but hunting and gathering remained the dominant subsistence strategy. As horticulture proved successful, horticultural sites became increasingly large and architecture exhibited greater permanence. Farmsteads with permanent architecture are evident by at least A.D. 550 when ceramics appeared in significant quantities in the archaeological record. Populations appear to have increased dramatically between A.D. 550 and 700 (see Figures 5.6 and 5.7), perhaps bringing Fremont farmer-foragers into increasing competition with full-time foragers, who maintained a competitive advantage over part-time foragers.

The Farmers. Based only on those sites yielding radiocarbon dates, residential architecture between about A.D. 550 and 700 was relatively uniform, consisting of circular or semicircular structures with concave, slightly semisubterranean floors of compacted soils. These structures featured centrally located, adobe-rimmed fire hearths and postholes, typically four, around the hearths, which implied the presence of central roof supports. Subsurface pits, including bell-shaped pits, are typically located inside the dwelling features. Wall construction often featured a base of vertical

slabstones, above which was erected a brush superstructure daubed with adobe. Coursed adobe structures and prepared clay floors are absent during this period. Radiocarbon dated sites attributed to the first half of the period include the Dam site, Caldwell Village, Wagon Run, and Wholeplace Village (Ambler 1966; Breternitz 1970a; Shields 1967), among others (see Appendix 5.1).

After about A.D. 700, the larger Uinta Basin populations began to fission. Small groups of horticulturalists began to occupy canyon drainages and other environmental niches that were previously peripheral to Fremont horticultural strategies. Fremont horticulturalists may have occupied Douglas Creek in increasing numbers, and other groups may have begun exploiting Nine Mile and Hill Creek canyons. Yet other groups remained in the Uinta Basin, employing a variety of settlement patterns, including the occupation of buttes in possibly defensive postures and aggregating at village sites like Whiterocks and Caldwell Village. Residential architecture became increasingly complex from A.D. 700 to 900 with the addition of prepared clay floors, adobe-rimmed hearths, antechambers and above-ground storage structures. Not enough is known of Tavaputs Plateau adaptations during this period to offer valid comparisons, but Valley Village and Beacon Ridge (Gillin 1938) in Nine Mile Canyon and the Turner-Look site (Wormington 1955) in the southern Tavaputs Plateau may offer evidence of similar adaptations in those regions.

The increased variability in architectural styles and settlement patterns was evident at several sites dating after A.D. 700. For example, the Gilbert site, located on a butte above Lake Fork and Zimmerman Wash without immediate access to permanent water or arable lands, yielded a radiocarbon date of 1280 ± 60 years B.P. (A.D. 739 calibrated) in association with a structure 12 ft sq and constructed of horizontally wet-laid sandstone slabs separated by 2 to 3 inches of mortar. Two floors of prepared clay were present, indicating at least two occupations. In the center of the structure was a basin-shaped, adobe-rimmed fire hearth. At the Goodrich site, located along a narrow ridge above Deep Creek, three residential structures were identified, all of which were circular with centrally located, adobe-rimmed fire hearths, subsurface pits, internal postholes and prepared floors of puddled clay. Structure 2, which may have been a surface structure, yielded a radiocarbon date of 1240 ± 85 years B.P. (A.D. 782 calibrated) (Shields 1967:8–16).

About A.D. 900, a depopulation of the Uinta Basin may have begun, based on a significant reduction in the number of radiocarbon dates after this time (see Figure 5.7). Those few Uinta Basin horticultural sites that have been investigated suggest that populations may have been aggregating into larger village settings, perhaps with defensive orientations. These settlement patterns were certainly evident at Whiterocks Village, located in the Uinta Mountains foothills near the Uinta River, where Structure 2 yielded radiocarbon dates of 1130 ± 80 years B.P. (A.D. 914 calibrated) and 1090 ± 60 years B.P. (A.D. 978 calibrated). This structure was circular, measuring 17 ft in diameter and featuring a floor of prepared clay. Two superimposed, centrally located fire pits were located, both of which featured adobe rims (Shields 1967:18–19).

The significant decline in Uinta Basin radiocarbon dates after A.D. 1000 appears to have coincided with an increase in the intensity of Fremont occupations in the Nine Mile Canyon area where a dual settlement pattern of stream terrace pithouses and dry-laid masonry architecture on pinnacles and outcrops may have been an elaboration of the less-complex defensive architecture evident at some Uinta Basin sites occupied after about A.D. 700. The remarkable complexity and considerable energy expended in the construction of the Tavaputs Plateau architectural sites dated after A.D. 1000 imply that defensive strategies may have evolved into a significant part of local settlement patterns.

The appearance of defensively oriented architecture in Nine Mile Canyon about A.D. 1000 also coincides with the appearance of Desert Side-Notched projectile points in Level 3 deposits at Deluge Shelter (A.D. 1014 calibrated). The appearance of these points, considered by many to be evidence of Shoshonean expansion, also coincided with a significant deemphasis on horticultural resources. It is suggested that the appearance of Desert Side-Notched points at the same time Fremont horticulturalists of the Tavaputs Plateau were constructing defensive architecture is not coincidental. Rather, this phenomenon may be evidence of cultural conflict between hunter-gatherers and horticulturalists (not necessarily between Shoshoneans and non-Shoshoneans). Not only did the deeply dissected canyons of the Tavaputs Plateau offer a topography conducive to defensive strategies, but higher elevations of the Tavaputs Plateau may have offered an acceptable combination of biotic resources that had been subjected to only sporadic foraging activities in earlier times. The presence of Fremont-like ceramics and maize at some foraging encampments in the Browns Park-Dinosaur National Monument area after A.D. 1000 suggest this region continued to be exploited by Fremont foragers, but the intensity of this exploitation was significantly reduced.

The Foragers. Most discussions of Fremont adaptations in the Uinta Basin have emphasized horticulture and semisedentary lifeways. But as demonstrated by the wealth of radiocarbon data reported from the Browns Park, Dinosaur National Monument, Yampa Canyon, and Douglas Creek areas, foraging activities were a significant part of subsistence strategies throughout the Formative stage. In fact, more radiocarbon dates have been reported from hunter-gatherer sites (temporary hunting camps and long-term base camps) than have been reported from Fremont horticultural sites with permanent architecture (Figures 5.7 and

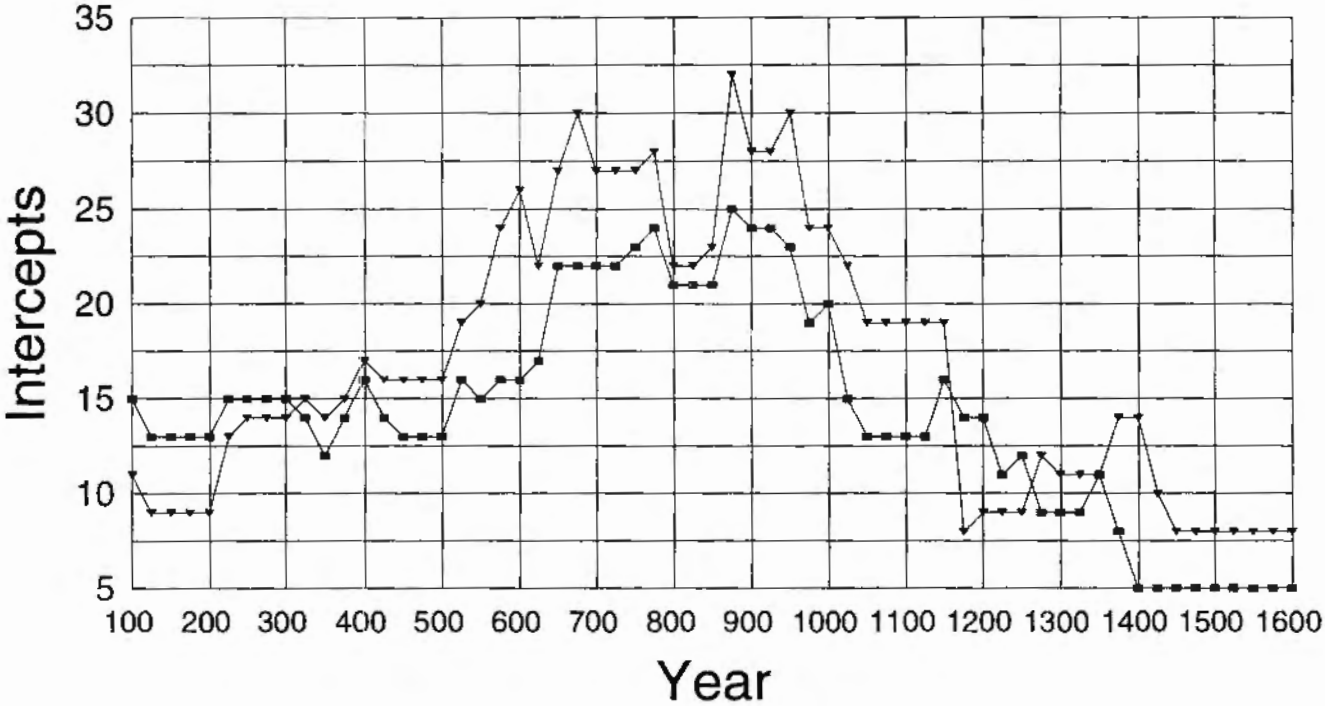

Figure 5.8. Radiocarbon date frequency curve comparison of hunter-gatherer campsites and rockshelters north and south of the Duch-

5.8). These data are strongly suggestive of Fremont seasonal foraging strategies that may have included horticulture at certain times of the year and procurement of faunal resources at other times of the year. It is probable that these foragers were Fremont peoples or were groups with socioeconomic association with Fremont peoples.

Six of the seven Dinosaur-Browns Park sites containing Rose Springs projectile points (admittedly a poor measure of Fremont cultural affiliation) also yielded maize or ceramics. Furthermore, 13 of the 15 sites in this area yielding radiocarbon dates also contained evidence of maize or ceramics. The small sample size of radiocarbon-dated sites makes any statistical conclusions speculative, but it would appear that foragers in the Browns Park-Dinosaur area at least had access to maize and ceramics.

Within this context, maize and ceramics recovered at foraging sites could be evidence of a late fall-winter migration by Fremont farmers into the Green River drainage to exploit deer and elk winter ranges. These foragers could have brought with them processed maize as a supplemental food resource. Ceramics found at forager encampments could have been manufactured at the winter base camps or carried in small quantities to the camps from farmsteads or villages in the Uinta Basin. Another possibility (discussed in greater detail later in this paper) is that hunter-gatherers developed a symbiotic socioeconomic relationship with sedentary horticulturalists. Under this model, foragers could have exchanged faunal resources for maize and ceramics.

It should also be noted that Formative stage peoples of northwestern Colorado appear to have also incorporated a variety of subsistence strategies, dominated by hunting and gathering of wild resources, but also utilizing maize to some degree. Data indicate that the Fremont of Douglas Creek did not become reliant on maize horticulture as much as other Fremont peoples and may have remained "very much entrenched in lifestyles developed during earlier Archaic times" (Creasman 1981:vi7). The nature of the farming-foraging subsistence strategy is poorly understood in this region.

Summary. Fremont occupations of the Uinta Basin appears to have been relatively continuous from about A.D. 550 to about 1000, although the intensity of these occupations

may have varied considerably. However, an occupation of the region by Fremont horticulturalists after that period cannot be adequately demonstrated given the paucity of radiocarbon dates. Whether this represents an abandonment of the Uinta Basin by sedentary Fremont peoples or a bias in the sites selected for radiocarbon analysis cannot be determined from the available data.

The rapid decline in Fremont occupations in the Uinta Basin after A.D. 900 is intriguing in light of chronometric data reported elsewhere in Utah that demonstrate an expansion of Fremont horticultural strategies from about A.D. 950 to 1150 (Talbot and Wilde 1989). It has been hypothesized that greater effective moisture during this period permitted greater reliance on domesticated resources. This hypothesis may be supported by data from the Tavaputs Plateau, which show an expansion of horticultural activities after A.D. 1000. But the central Uinta Basin appears to have been sparsely populated during this time. If climatic conditions were indeed favorable during this period, the depopulation of the Uinta Basin may have been precipitated, at least in part, by nonenvironmental factors, perhaps increased competition with hunter-gatherers for limited resources.

The relationship between farmers and foragers in the Uinta Basin is unresolved. A wealth of radiocarbon dates from forager camps in the Dinosaur National Monument and Browns Park areas and corresponding chronometric data from the Uinta Basin offer considerable research potential. Interestingly, the frequency of Uinta Basin radiocarbon dates, generally associated with sedentary horticultural activities, is virtually identical to the frequency of Browns Park-Dinosaur National Monument radiocarbon dates generally associated with hunting and gathering activities (Figures 5.7 and 5.8).

A continued occupation of the central Uinta Basin by sedentary horticulturalists is implied by circumstantial evidence. This includes the presence at some Uinta Basin sites of Anasazi trade wares that have been dated in Southwestern contexts after A.D. 1000, and concurrent and complex Fremont occupation in the environmentally inferior Tavaputs Plateau region adjacent to the Uinta Basin. Additionally, the presence of ceramics and maize at encampments dating as late as A.D. 1300 in Dinosaur National Monument and Browns Park, as well as a Fremont-like presence in northwestern Colorado that persisted well after A.D. 1000, exhibit features similar to those observed in the Uinta Basin.

Three possible explanations are offered as to the paucity of Uinta Basin radiocarbon dates after A.D. 1000: (1) No abandonment occurred and the paucity of post-A.D.1000 radiocarbon dates is a function of sampling bias, (2) Uinta Basin horticulturalists shifted settlement patterns to locations not yet identified or subjected to chronometric analysis, or (3) An expansion of foraging activities in the Uinta Basin beginning about A.D. 900 may have forced sedentary populations to adjust settlement patterns to include defensible site locations in the Uinta Basin, and later to migrate to more defensible environments in the deeply incised canyons of the Tavaputs Plateau.

The Tavaputs Adaptation

Researchers have long recognized that horticultural adaptations in the Nine Mile Canyon, Hill Creek, and Willow Creek areas of the Tavaputs Plateau were substantially different than those in the Uinta Basin to the north or the San Rafael Swell to the south. Among the distinct adaptations evident in the Tavaputs Plateau area are: (1) dry-laid masonry structures, some of massive size, (2) masonry towers and other architectural features situated on ridge tops and buttes hundreds of meters above any arable land, (3) the absence of a local ceramic tradition, and (4) a complex storage strategy unparalleled elsewhere on the northern Colorado Plateau. (The Tavaputs adaptation is discussed in detail in Chapter 3.)

Given spatial distribution of chronometric data, it is likely not coincidence that horticulturalists practicing Fremont-like strategies appeared in Tavaputs Plateau drainages at about the same time horticultural strategies appear to have been decreasing in intensity in the central Uinta Basin. However, there is limited archaeological evidence to support the hypothesis of an actual population shift from the Uinta Basin to the Tavaputs Plateau. In fact, there are significant differences in settlement patterns, subsistence strategies, and artifact assemblages.

There are also significant temporal differences between the two areas (Figure 5.7). The florescence of Fremont residential sites in the Uinta Basin occurred between about A.D. 550 and 700 (20 radiocarbon dates), but continued for another 200 years (10 radiocarbon dates between A.D. 700 and 900). In the Tavaputs Plateau region, the Fremont presence appears to have been sparse prior to about A.D. 1000. Between A.D. 1000 and 1300, eight radiocarbon dates have been reported, as well as some 40 tree-ring dates from four different Tavaputs Plateau sites that reflected construction dates between A.D. 1000 and 1200.

The frequency curves for residential sites in the region (Figure 5.7) seem to support a hypothesis that a migration of horticulturalists from the Uinta Basin to the Tavaputs Plateau may have occurred during the late A.D. 900s and early A.D. 1000s. However, there is surprisingly little archaeological evidence to support such a hypothesis. Among the evidence mitigating such a hypothesis: (1) The paucity of Tavaputs Plateau sites dated prior to A.D. 800 is likely a function of statistical bias due to the small number of sites subjected to chronometric analyses; (2) A continued Fremont-like foraging subsistence strategy is evident in the archaeological record of Dinosaur National Monument and

Browns Park to the *north* of the Uinta Basin during this same time period; (3) There is little direct evidence of social conflict at sites in the Uinta Basin or Tavaputs Plateau; (4) Architectural styles and settlement patterns are decidedly different between the two regions; (5) Storage strategies are extremely complex in the Tavaputs Plateau area and appear to reflect periodic or seasonal abandonments, but this strategy is virtually absent in the Uinta Basin; (6) Tavaputs Plateau gray wares are dominated by what appears to be basalt temper, an exotic material derived from the San Rafael Swell area, instead of limestone or calcite tempering agents preferred by Uinta Basin peoples and which are readily available throughout the Tavaputs Plateau; (7) Ceramics appear to have been a moderate part of Fremont adaptations in the Uinta Basin, but are an inconsequential part of the artifact assemblage at most Tavaputs Plateau sites; (8) The Tavaputs Plateau exhibits a Fremont rock art style decidedly different from that in the Uinta Basin; and (9) Characteristic Fremont traits (e.g., Utah type metates, figurines, applique pottery) are extremely rare in the Uinta Basin but are relatively common in the Tavaputs Plateau area (Spangler 1995).

Taken collectively, these traits argue for a separate Fremont adaptation uniquely suited to the deeply incised canyons of the Tavaputs Plateau. This adaptation was likely present prior to A.D. 1000, but becomes conspicuous in the archaeological record after that time with the addition of large masonry architectural structures — a phenomenon unprecedented anywhere else in the Fremont culture area north of the Colorado River. The florescence of the Fremont culture in this region was likely influenced by concurrent adaptations in the Uinta Basin and San Rafael Swell, but is spatially, temporally, and artifactually distinct.

An abandonment of horticultural lifeways on the Tavaputs Plateau area may have occurred by about A.D. 1300, although evidence at some sites in northwestern Colorado imply the Fremont may have persisted as a recognizable entity in isolated areas until about A.D. 1500. For example, 5Rb699 yielded evidence of maize and a radiocarbon date of A.D. 1287. Sand-tempered Fremont gray wares were recovered from 5Rb3182, which yielded a radiocarbon date of A.D. 1284, and from sites 5Rb2828 and 5Rb3182, which yielded radiocarbon dates of A.D. 1284 and A.D. 1367, respectively. A sandstone ball, typically considered a Fremont material culture trait, was recovered at 5Rb2873 in association with Desert Side-Notched points; this site yielded a radiocarbon date of A.D. 1295.

Two sites in particular may be reflective of post-A.D. 1300 Fremont occupations. The Edge site (5Rb748) yielded Fremont artifacts and a radiocarbon date of A.D. 1421, and the Texas Creek Overlook site (5Rb2435) yielded Fremont ceramics and a radiocarbon date of A.D. 1449 (Creasman 1981; Creasman and Scott 1987; LaPoint et al. 1981). Both sites exhibit architectural traits similar to those described for the Tavaputs adaptation, while artifacts recovered from both sites may share cultural affinities with the Uinta Basin. Collectively, these data imply the persistence of adaptive strategies with Fremont-like traits in isolated areas throughout the late Formative and early Shoshonean stages, even though climatic conditions were deteriorating.

It should be emphasized that post-A.D. 1000 Fremont populations in the Tavaputs Plateau and Douglas Creek areas were never numerous; the susceptibility of small populations to predation may have mandated the defensive strategies evident in the architectural record. These defensive sites were not refuges from invading Shoshoneans; rather, they offer circumstantial evidence of temporary refuge by horticulturalists subjected to increased competition from hunters and gatherers. It should also be noted there is little chronometric data from the Tavaputs Plateau region to support a hypothesis that farmers were also engaged in hunting and gathering activities.

Summary. The relative paucity of Tavaputs Plateau sites yielding radiocarbon dates prior to A.D. 1000 is likely a perceptual problem perpetuated by a small sample of radiocarbon dates (this region has not been subjected to the intensive hydrocarbon development and pipeline construction as has the Uinta Basin and Browns Park areas). As discussed earlier, a robust Fremont presence prior to A.D. 1000 has been documented in the Uinta Basin to the north in canyon environments in the San Rafael Swell to the south. A significant pre-A.D. 1000 Fremont presence may yet be demonstrated in the Tavaputs Plateau.

However, current chronometric data suggest that horticulture flourished in the region after about A.D. 1000, although human populations were never large given the environmental constraints of limited arable lands and water. The frequency of chronometric data between about A.D. 1000 and 1300 suggest human populations were increasing during this period. This expansion could reflect (1) improved climatic conditions throughout the Colorado Plateau that facilitated expansion of horticultural activities, or (2) a migration of horticulturalists from the Uinta Basin into the environmentally inferior Tavaputs Plateau. It could also be a function of statistical bias in which sites occupied prior to A.D. 900–1000 have not yet been subjected to chronometric analyses.

Regardless of the temporal range of horticultural adaptations in the Tavaputs Plateau, it is emphasized that unique geographical and environmental variables precipitated human adaptations unique on the northern Colorado Plateau. Consequently, the various "phases" and "variants" hypothesized by various researchers (Jennings 1978; Marwitt 1970a; Schaafsma 1971; Schroedl and Hogan 1975) are rejected. These designations are theoretically flawed attempts to explain cultural variability in the Tavaputs Plateau through diffusion of material culture traits from the

Uinta Basin or San Rafael Swell. These labels inherently militate against an independent adaptation to unique environmental variables characteristic of the Tavaputs Plateau region, ignoring explanations as to how or why prehistoric peoples adapted to their Tavaputs Plateau environment in such a distinct manner.

THE SHOSHONEAN STAGE

The hypothesized Numic expansion into the eastern Great Basin and contiguous territories remains a popular explanation for abandonment of Fremont lifeways. It is widely accepted that the period from about A.D. 1000 to 1500 was characterized by widespread cultural migrations that precipitated tremendous social interaction. As described by Lindsay (1986) and others, it was also a time of significant climatic change that disrupted agricultural lifeways throughout the Southwest (see also Gumerman 1988). The predominance of a hunter-gatherer lifeway after A.D. 1300, therefore, is likely dynamic, reflecting human adaptation to changing environments through population migration *and* shifting subsistence strategies in which horticulture was no longer viable.

The relationship of Fremont peoples to historic Numic-speakers is wholly unresolved. While acknowledging a Numic expansion at different points in time, Grayson (1994a), Gunnerson (1962, 1969) and Holmer (1994) see the Fremont as ancestors of the Utah Shoshoneans. However, others see the disappearance of horticulture and sedentism as evidence for a displacement of non-Numic peoples by Shoshonean newcomers (Bettinger and Baumhoff 1982; Sutton 1986, 1987). The problem is aggravated by the fact that nonperishable material culture of the prehistoric Shoshoneans "is so scanty and nondistinctive that almost no archaeological evidence of the tribes or their lifeway can be gathered except through ethnographic and linguistic sources" (Jennings 1978:235).

Abandonment of horticultural subsistence strategies in the Uinta Basin region and the subsequent appearance of Shoshonean foragers in the archaeological record remains a perplexing and inadequately studied problem. None of the recent models (Aikens and Witherspoon 1986; Bettinger and Baumhoff 1982; Sutton 1986, 1987) specifically addressed archaeological phenomena in the Uinta Basin region, although each appears to have some merit to a discussion of post-A.D. 1300 manifestations in the study area.

It is probable that a variety of climatic and social factors led to a disintegration of sedentary, horticulture-based lifeways about the same time Anasazi agricultural-based societies were collapsing in the Southwest. This climate-induced abandonment may have been accelerated by increasing populations of Shoshonean foragers. With the exception of recently obtained radiocarbon dates for certain Numic artifacts, no research is being conducted related to the Shoshonean presence in the Uinta Basin or Tavaputs Plateau region. A coexistence of sedentary Fremont peoples and Numic foragers cannot be conclusively demonstrated at the current time, but should not be rejected given the paucity of research.

Researchers in the Uinta Basin region have emphasized that the hunting and gathering strategies employed after A.D. 1300 did not differ markedly from those in preceding Archaic and Formative stages. As noted by several researchers (Bright and Simms 1994; Grady 1980; Simms 1986; Ugan and Simms 1994), the Fremont-Shoshonean interface may not reflect a cultural displacement as much as it does an abandonment of horticulture and greater emphasis on hunting and gathering subsistence strategies. The material culture record associated with this strategy was distinguished from that of earlier Fremont peoples primarily on the basis of Desert Side-Notched projectile points and Shoshonean pottery sherds, and rarely, basketry and Shoshonean knives. Rock art styles attributed to post-A.D. 1300 occupations are also in decided contrast to earlier Fremont styles.

As discussed earlier, these artifacts were utilized by historic Shoshonean populations in the same region. It is not unreasonable, therefore, to postulate that these same artifact types, when recovered in prehistoric contexts, were manufactured by ancestral Shoshonean peoples (cf. A. Reed 1994a). The theoretical problems of assigning ethnicity to material culture are acknowledged.

The paucity of Shoshonean stage chronometric data from the region is perplexing and may well be a function of statistical bias. Researchers throughout the Uinta Basin have described sparse evidence suggesting the region was exploited by Shoshonean hunter-gatherers. Numic activities may be represented by rockshelter habitations, dune encampments and rock art sites in the Natural Buttes, Bonanza, and Riverbend areas, all of which appear to have been sparsely exploited during the Formative stage; however, there is no chronometric data to support the concept of expanded foraging ranges. In fact, Shoshonean stage manifestations are not particularly common anywhere in the central Uinta Basin.

With the possible exception of the rock art in the Nine Mile and Hill Creek Canyon areas, there is also little evidence for an extensive Shoshonean occupation of the Tavaputs Plateau; however, the lack of recorded sites may be reflective of the mobile lifeway of Shoshonean foragers and the inability of archaeologists to recognize these ephemeral settlement patterns and subsistence strategies. It should be noted that Shoshonean pottery has not been recovered from chronometrically controlled contexts in the Tavaputs Plateau region, and only one Desert Side-Notched point has been recovered from a context yielding a Shoshonean stage radiocarbon date.

An occupation of the Tavaputs Plateau region by Sho-

shonean hunter-gatherers is implied by the recovery of several temporally diagnostic artifacts and the abundance of post-Fremont rock art. However, interpretations of prehistoric Shoshonean lifeways is hampered by the fact that no radiocarbon dates have been reported from stratified deposits. Given the limited data from the Tavaputs Plateau region, it could be reasonably postulated that this region was exploited by small, highly mobile groups of hunters, perhaps individual hunters, who periodically cached bundles of food, clothing, and raw materials throughout their foraging range. There is no evidence to suggest social organization on the band level during prehistoric times. Some areas (e.g., Nine Mile Canyon) may have been exploited by families who also gathered floral resources, as evidenced by the large Numic basket recovered in that region (Spangler 1993b), but such evidence is rare.

Data related to the Shoshonean stage present intriguing archaeological and ethnographical questions that, unlike earlier periods of culture history, allow direct comparisons between the ethnographically observed behavior and the archaeologically described past. Unfortunately, little research has been conducted in the Uinta Basin or the Tavaputs Plateau related to prehistoric Shoshonean adaptations. This region is frequently included in various models for Fremont abandonment and Shoshonean expansion, but with few exceptions these regional hypotheses do not cite actual data from the study area.

The paucity of prehistoric Shoshonean sites yielding stratified deposits is frustrating. The only stratified sites to date are found in the Browns Park area (McKibbin 1992), but the value of those data to an explanation of Shoshonean lifeways is marginal, at best. Other radiocarbon dates have been derived from isolated components and individual artifacts that offer little in the way of explanation of shifting subsistence strategies or settlement patterns. The entire prehistoric Shoshonean occupation of the Uinta Basin and Tavaputs Plateau must be considered a significant gap in the corpus of archaeological data, and any hypotheses, conclusions, and interpretations must be considered extremely tenuous.

As emphasized in the previous discussion on the Formative stage, the appearance of Desert Side-Notched points in hunter-gatherer contexts in the Uinta Basin at the same time horticulturalists were constructing defensively oriented architecture in the Tavaputs Plateau is probably not coincidental. Whether this represents an expansion of Shoshonean hunters and gatherers into the Uinta Basin region about A.D. 1000 cannot be stated. Rather, this phenomenon should be viewed within the context of increased competition between horticulturalists who also foraged and those who relied exclusively on hunting and gathering. It is certainly possible that practitioners of both adaptive strategies were Shoshonean-speakers. It does appear that hunting and gathering had become the dominant subsistence strategy by at least A.D. 1300, and that this strategy included the utilization of local lithic sources, ceramics, and basketry considered characteristic of historic Shoshonean peoples.

The coexistence of horticulturalists and hunter-gatherers is not only considered possible but probable during the latter part of the Formative stage and early in the Shoshonean stage. The ethnohistoric observations of William Henry Jackson are considered relevant to the hypothesis proposed here. In his interviews with Puebloan peoples, Jackson observed that prehistoric farmers were

> . . . living by agriculture rather than by chase. About a thousand years ago, however, they were visited by savage strangers from the North, whom they treated hospitably. Soon these visits became more frequent and annoying. Then their troublesome neighbors—ancestors of the present Utes—began to forage among them, and, at last, to massacre them and devastate their farms so, to save their lives at least, they built houses high on cliffs, where they could store food and hide away till the raiders left. But one summer the invaders did not go back to their mountains as the people expected, but brought their families with them and settled down. So, driven from their homes and lands, starving in their little niches on the high cliffs, they could only steal away during the night . . . [Jackson 1876:380].

The ethnohistoric record also indicates that Ute hunters frequently visited Puebloan settlements in New Mexico and Arizona in the 1500s, 1600s, and 1700s, trading faunal resources for maize and textiles and exchanging captives. At other times of the year, Ute peoples were in almost-constant conflict with Puebloan peoples (Tyler 1951). It is possible, therefore, that hunters and gatherers developed a symbiotic relationship with sedentary farmers, raiding sedentary groups during certain seasons and engaging in socioeconomic intercourse during other seasons.

Based on the archaeological evidence currently reported, the number of Shoshonean hunters and gatherers does not appear to have been significant, certainly not enough to displace larger numbers of horticulturalists. However, if the raiding activities of hunters and gatherers eventually displaced horticulturalists, the foragers may have responded by relocating to areas where a symbiotic socioeconomic relationship with horticulturalists (e.g., Puebloan and Apachean peoples) could be resumed.

Of possible significance, 18 of the 25 Shoshonean stage radiocarbon dates from northwestern Colorado sites occur between A.D. 1300 and 1500; this period coincides with a postulated late Fremont presence at sites like the Edge site and Texas Creek Overlook. By comparison, only 6 Shoshonean stage radiocarbon dates have been reported from Uinta Basin contexts during that same time period; no post-A.D. 1300 Fremont occupation has been unequivocally demonstrated in either the Uinta Basin or Tavaputs Plateau. The comparative paucity of Shoshonean Stage radio-

carbon dates after A.D. 1500 (10 in the Uinta Basin, 7 in northwestern Colorado) may represent a movement of many, but not all, early Shoshonean peoples southward into southwestern Colorado and northern New Mexico. The ethnohistoric record indicates that Ute populations were increasing rapidly in that area after A.D. 1600, and that these hunter-gatherers were engaged in regular economic intercourse with sedentary populations in that region (Tyler 1951).

It is emphasized that small groups of ancestral Utes probably remained in the Uinta Basin and northwestern Colorado, but the number was comparatively small. Although the number of Shoshonean stage radiocarbon dates (25 in northwestern Colorado, 16 in the Uinta Basin and Tavaputs Plateau) is insufficient to demonstrate spatial and temporal changes, it is postulated that the Uinta Basin region was exploited by small numbers of hunters and gatherers with Shoshonean technologies. The pre-equestrian adaptations during the Shoshonean stage were characterized by mobile hunting and gathering strategies reminiscent of Archaic stage strategies.

It is also probable that Shoshonean hunter-gatherers coexisted with horticulturalists. For example, at the Moss Shelter site in Yampa Canyon, researchers described about 60 box elder poles averaging 12 ft in length, grouped about lodges or house floors. The floors were indicated by circles of rock 8 to 15 ft in diameter, "which would seem to indicate their use as tepee poles." Artifacts in association with the structures included notched wooden foreshafts, corncobs, scrapers, triangular projectile points, rubbing stones, and pottery sherds (Baldwin et al. 1947:8–9). The association of Shoshonean domestic structures, maize, and ceramics cannot be readily explained, although Baldwin suggested "this shelter represents a late prehistoric Ute site" (1947:33). It is also possible this site represents a concurrent exploitation of the region by Shoshonean and Fremont peoples.

The combination of deteriorating climatic conditions and sparse populations precipitated a resumption of long-distance transhumance. Consequently, sites after A.D. 1300 should reflect mobile subsistence strategies and settlement patterns similar to those described above for the Early Archaic and Middle Archaic periods. Population aggregations in sheltered parks along the Green River were probably part of this foraging strategy, but this cannot yet be demonstrated in the Uinta Basin archaeological record. The procurement of floral and faunal resources during predetermined seasonal rounds was reminiscent of Great Basin adaptive strategies; influence from the northwestern Plains cannot be demonstrated during this period, although Plains Shoshoneans may have exploited the Browns Park and Dinosaur National Monument areas as evidenced by the presence of steatite vessels in Uinta Basin contexts.

Given the fact that Utes at the time of historic contact utilized Desert Side-Notched points, brown ware ceramics, and Numic-style basketry, and practiced a mobile hunting and gathering subsistence strategy, it is postulated that Shoshonean peoples who occupied the region after A.D. 1300 were ancestral Utes. The model presented here is clearly based on ethnohistoric evidence inasmuch as little archaeological research into Shoshonean lifeways has been reported from the Uinta Basin area.

SUMMARY

Despite the abundance of chronometric data now available to researchers in the Uinta Basin region, significant gaps in the data base complicate any comprehensive interpretations of the local chronology. No radiocarbon dates have been reported from the western Uinta Basin, nor have any dates been reported from the White River drainage in the southeast Uinta Basin. The abundant Formative stage manifestations in Hill and Willow Creek have produced tenuous tree-ring dates, but no radiocarbon studies have been initiated. Sites in Nine Mile Canyon, arguably the most intensively investigated drainage in northeastern Utah, have only recently been subjected to radiocarbon analyses, and the small number of dates reported from the Tavaputs Plateau may have created a statistical illusion of a late Fremont adaptation to the near exclusion of earlier Fremont or Late Archaic occupations.

Since early temporal classification schemes were proposed by Breternitz (1970a), Ambler (1969), Shields (1970) and Marwitt (1970a), the temporal range of human adaptations in the Uinta Basin region has been gradually expanded to include Archaic hunters and gatherers, Late Archaic and Formative horticulturalists *and* foragers, and Shoshonean hunters and gatherers. Despite the more than 400 radiocarbon dates now available to researchers, the significant gaps in the chronometric data base make it difficult to propose anything but broad temporal sequences. Labels like Cub Creek phase and Cliff Creek phase (see Figure 5.5), based in large part on limited archaeological investigations, remain theoretically untenable (see Berry and Berry 1986) and should probably be discarded.

It is suggested the collective radiocarbon data be used as a broad framework for cultural change in northeastern Utah. Given the data available, it can be speculated that small groups of hunters and gatherers exploited the region by about 3000 B.C., but these occupations were sparse until about 500 B.C. when a steady increase in the number of radiocarbon dates may coincide with increased human populations. The appearance of maize horticulture about A.D. 250 coincides with a dramatic increase in the number of radiocarbon dates; the number of sites yielding radiocarbon dates continues to increase, peaking about A.D. 700 and gradually declining thereafter. The paucity of Uinta Basin radiocarbon dates after A.D. 1000 and the comparative abundance of dates in the Tavaputs Plateau between A.D. 1000 and 1300 may imply a spatial shift. With the possible exception of isolated sites in the Douglas Creek area,

horticultural lifeways appear to have disappeared by about A.D. 1300. Shoshonean peoples, who may or may not have been ethnically or linguistically related to Fremont horticulturalists, continued to occupy the region after A.D. 1300, practicing hunting and gathering strategies similar to those described for the Archaic stage.

NOTE ON METHODOLOGY

The chronometric data base was created using a Quatro Pro V spreadsheet program. All radiocarbon dates were first calibrated as per Stuiver and Reimer (1993). The two-sigma range of each date was then plotted on a horizontal axis (calendar dates). A value of 1 was assigned to each 25-year intersect represented within the two-sigma range. Tree-ring dates were also added to the data base in the same manner. The outer ring date was assigned a corresponding value of 1 on the horizontal axis. Dendro samples with bark present (B) were assigned 50-year ranges, samples with variable rings (V) were assigned 100-year ranges, samples with very variable (VV) outer rings were assigned 150-year ranges and those samples without ring specifications were assigned 200-year ranges. The spreadsheet program then calculated the total number of intersects within each 25-year period. All radiocarbon and tree-ring dates were added to the data base; no attempts were made to subjectively eliminate those samples deemed to be erroneous (an exception was radiocarbon samples that returned "modern" dates).

Appendix 5.1.
Radiocarbon Dates from the Uinta Basin

Site No.	Lab. No.	Site Type	C-14 Date BP	2 Sigma Range	Calen. Date	Calib. Date	Comments
5Rb726	W-4264	Foraging	9120 ±130	8420–7936 B.C.	7170 B.C.	8088 B.C.	Site: Campsite with hearth, lithic debitage, no diagnostic artifacts. Location: Douglas Creek, DCA (Grady 1984).
5Rb298	UGa-1698	Foraging	7545 ±205	6993–5969 B.C.	5595 B.C.	6382 B.C.	Site: Data not available. Location: Douglas Creek Arch (in Grady 1984).
5Rb298	UGa-1705	Foraging	4945 ±415	4673–2620 B.C.	2995 B.C.	3707 B.C.	Site: Data not available. Location: Douglas Creek Arch (in Grady 1984).
5Rb670	W-4244	Foraging	4720 ± 90	3692–3149 B.C.	2770 B.C.	3400 B.C.	Site: Data not available. Location: Douglas Creek Arch (in Grady 1984).
5Rb1008	RL-1147	Foraging	4660 ±160	3773–2917 B.C.	2710 B.C.	3467 B.C.	Site: Hearth, lithic scatter. Sample: Charcoal. Location: White River, DCA (Chandler and Nickens 1979; Grady 1984).
5Rb298	UGa-1716	Foraging	4605 ±500	4456–1939 B.C.	2855 B.C.	3358 B.C.	Site: Data not available. Location: Douglas Creek Arch (in Grady 1984).
42Da485	B-32511	Foraging	4540 ±210	3755–2621 B.C.	2590 B.C.	3336 B.C.	Site: Multioccupation base camp. Sample: Charcoal from isolated hearth. Location: Green River, Browns Park (McKibbin 1992).
5Mf476	———	Foraging	4260 ±	———	2310 B.C.	2886 B.C.	Lay Site: McKean complex artifacts with hearths. Sample: Not given. Location: Lay Creek, Yampa Basin (in LaPoint 1987).
42Un126	M-783	Foraging	4230 ±250	3610–2061 B.C.	2280 B.C.	2879 B.C.	Thorne Cave: Rockshelter with floral/faunal remains. Sample: Charcoal from Level 2. Location: Cliff Creek, Uinta Basin (K. Day 1964).
5Mf476	———	Foraging	4185 ±	———	2235 B.C.	2773 B.C.	Lay Site: McKean complex artifacts with hearths. Location: Lay Creek, Yampa Basin (in LaPoint 1987).
42Un126	W-1359	Foraging	4170 ±250	3496–1989 B.C.	2220 B.C.	2755 B.C.	Thorne Cave: Rockshelter with faunal/floral remains. Sample: Charcoal from Level 7. Location: Cliff Creek, Uinta Basin (K. Day 1964).

* The Office of Public Archaeology at Brigham Young University conducted excavations at Steinaker Reservoir in 1995. Data from those investigations were not available for this overview, but the radiocarbon dates were graciously provided by Rich Talbot.

Radiocarbon dates from the Sandshadow site in northwestern Colorado were not formally reported at the time the data base was created, but were graciously provided by Steven G. Baker and are herein calibrated as per Stuiver and Reimer (1993).

Abbreviations in the appendix are as follows: DCA, Douglas Creek Arch; DNM, Dinosaur National Monument; ETP, East Tavaputs Plateau; WTP, West Tavaputs Plateau.

Site No.	Lab. No.	Site Type	C-14 Date BP	2 Sigma Range	Calen. Date	Calib. Date	Comments
5Mf476	—	Foraging	4165 ±	—	2215 B.C.	2748 B.C.	Lay Site: McKean complex artifacts with hearths. Location: Lay Creek, Yampa Basin (in LaPoint 1987).
5Mf476	———	Foraging	4150 ±	———	2200 B.C.	2693 B.C.	Lay Site: McKean complex artifacts with hearths. Location: Lay Creek, Yampa Basin (in LaPoint 1987).
42Un1	GX-0898	Foraging	3840 ±210	2886–1689 B.C.	1890 B.C.	2285 B.C.	Deluge Shelter: Multioccupation shelter with faunal/floral processing. Sample: Charcoal from Level 11. Location: Jones Hole, DNM (Leach 1970).
5Mf429	———	Foraging	3740 ±325	3022–1324 B.C.	1790 B.C.	2137 B.C.	Site: Data not available. Location: Yampa Basin (in LaPoint 1987).
5Mf428	———	Foraging	3700 ±550	3631–797 B.C.	1750 B.C.	2084 B.C.	Site: Open campsite with Mallory points, hearths. Sample: Data not available. Location: Yampa Basin (in LaPoint 1987).
5Rb312	RL-776	Foraging	3690 ±130	2462–1699 B.C.	1740 B.C.	2089 B.C.	Site: Data not available. Location: Douglas Creek Arch (in Grady 1984).
42Un1	GX-0899	Foraging	3630 ± 85	2201–1745 B.C.	1680 B.C.	1972 B.C.	Deluge Shelter: Multioccupation shelter with faunal/flora processing. Sample: Bone from Level 12. Location: Jones Hole, DNM (Leach 1970).
5Rb298	UGa-1704	Foraging	3620 ±540	3503–771 B.C.	1670 B.C.	1957 B.C.	Site: Data not available. Location: Douglas Creek Arch (in Grady 1984).
5Rb312	RL-777	Foraging	3600 ±130	2317–1618 B.C.	1650 B.C.	1936 B.C.	Site: Data not available. Location: Douglas Creek Arch (in Grady 1984).
42Da485	B-35421	Foraging	3550 ± 70	2114–1685 B.C.	1600 B.C.	1884 B.C.	Site: Multioccupation base camp with ephemeral structures. Sample: Charcoal from Level 3. Location: Green River, Browns Park (McKibbin 1992)
5Mf2637	B-27678	Foraging	3500 ± 70	2013–1632 B.C.	1550 B.C.	1843 B.C.	Site: Isolated basin-shaped hearth. Sample: Charcoal from Feature 1. Location: Sand Creek, DNM (Truesdale 1989).
5Rb148	RL-0	Foraging	3510 ±150	2273–1450 B.C.	1560 B.C.	1811 B.C.	Site: McKean point in association with site, but no other data available. Location: Douglas Creek Arch (in Grady 1984).
5Mf607	UGa-1852	Foraging	3490 ± 60	1946–1673 B.C.	1540 B.C.	1847 B.C.	Site: Data not available. Location: Yampa Basin (in Grady 1984).
42Un1	GX-0899B	Foraging	3420 ±110	2013–1442 B.C.	1470 B.C.	1721 B.C.	Deluge Shelter: Multioccupation shelter with faunal/floral processing. Sample: Bone from Level 12. Location: Jones Hole, DNM (Leach 1970).
5Rb454	B-34173	Foraging	3360 ±130	1961–1391 B.C.	1410 B.C.	1664 B.C.	Hanging Hearth: Multioccupation shelter with pit-house features. Sample: Charcoal from Hearth B. Location: Four Mile Wash, DCA (Hauck 1993).

Site No.	Lab. No.	Site Type	C-14 Date BP	2 Sigma Range	Calen. Date	Calib. Date	Comments
42Un2083	B-69507	Foraging	3310 ± 80	1749–1413 B.C.	1360 B.C.	1568 B.C.	Bean Draw Burial: Hearth in proximity to a burial (later date). Sample: Charcoal. Location: Bean Draw, Uinta Basin (H. B. Phillips 1992).
42Un1	GX-0897	Foraging	3260 ±120	1869–1262 B.C.	1310 B.C.	1518 B.C.	Deluge Shelter: Multioccupation shelter with faunal/floral processing. Sample: Charcoal from Level 8 hearth. Location: Jones Hole, DNM (Leach 1970).
5Rb454	B-42361	Foraging	3250 ± 80	1731–1324 B.C.	1300 B.C.	1516 B.C.	Hanging Hearth: Multiple occupation shelter with pithouse features. Sample: Charcoal from Hearth T. Location: Four Mile Wash, DCA (Hauck 1993).
5Rb148	RL-0	Foraging	3150 ±150	1743–999 B.C.	1200 B.C.	1414 B.C.	Site: McKean point, other data not available. Location: Douglas Creek Arch (in Grady 1984).
5Rb2685	B-12968	Foraging	3140 ±130	1683–1021 B.C.	1190 B.C.	1410 B.C.	Site: Slab-lined hearth, side-notched point. Sample: Charcoal from Feature 1 hearth. Location: Near Rangely, DCA (Tucker 1986).
5Rb454	B-42354	Foraging	3130 ± 80	1525–1138 B.C.	1180 B.C.	1405 B.C.	Hanging Hearth: Multioccupation shelter with pit-house features. Sample: Charcoal from Hearth G. Location: Four Mile Wash, DCA (Hauck 1993).
42Da61	B-13675	Foraging	3120 ± 90	1590–1124 B.C.	1170 B.C.	1401 B.C.	Site: Multioccupation campsite with hearths. Sample: Charcoal from Feature 20 hearth. Location: Green River, Browns Park (Tucker 1986).
5Rb454	B-42353	Foraging	3110 ± 60	1512–1211 B.C.	1160 B.C.	1396 B.C.	Hanging Hearth: Multioccupation shelter with pit-house features. Sample: Charcoal from Hearth F/G. Location: Four Mile Wash, DCA (Hauck 1993).
5Rb454	B-56582	Foraging	3060 ± 60	1430–1123 B.C.	1110 B.C.	1312 B.C.	Hanging Hearth: Multioccupation shelter with pit-house features. Sample: Charcoal from Hearth AC. Location: Four Mile Wash, DCA (Hauck 1993).
5Rb454	B-51341	Foraging	3060 ± 60	1430–1123 B.C.	1110 B.C.	1312 B.C.	Hanging Hearth: Multioccupation shelter with pit-house features. Sample: Charcoal from Hearth U. Location: Four Mile Wash, DCA (Hauck 1993).
42Un1476	B-14469	Foraging	3030 ± 90	1496–998 B.C.	1080 B.C.	1265 B.C.	Site: Hearths in association with features dating to Late Archaic. Sample: Charcoal specks from Feature 12. Location: Cliff Creek, Uinta Basin (Tucker 1986).
5Rb2685	B-12967	Foraging	3030 ± 75	1430–1020 B.C.	1080 B.C.	1265 B.C.	Site: Slab-lined hearth, Archaic side-notched point. Sample: Charcoal from Feature 1 hearth. Location: Near Rangely, DCA (Tucker 1986).
5Rb454	B-51345	Foraging	2990 ± 50	1388–1031 B.C.	1040 B.C.	1243 B.C.	Hanging Hearth: Multioccupation shelter with pit-house features. Sample: Charcoal from Level 10. Location: Four Mile Wash, DCA (Hauck 1993).

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42Da485	B-32837	Foraging	2960 ± 50	1372–1003 B.C.	1010 B.C.	1145 B.C.	Site: Multioccupation base camp with ephemeral structures. Sample: Charcoal from hearth. Location: Green River, Browns Park (McKibbin 1992).
5MF476	—	Foraging	2950 ±		1000 B.C.	1149 B.C.	Lay Site: McKean complex artifacts, but other data not available. Location: Yampa Basin (in LaPoint 1987).
5Rb454	B-51337	Foraging	2940 ± 60	1371–932 B.C.	990 B.C.	1125 B.C.	Hanging Hearth: Multioccupation shelter with pit-house features. Sample: Charcoal from Hearth A. Location: Four Mile Wash, DCA (Hauck 1993).
42Da485	B-35096	Foraging	2900 ± 90	1382–836 B.C.	950 B.C.	1045 B.C.	Site: Multioccupation base camp with ephemeral structures. Sample: Charcoal from hearth. Location: Green River, Browns Park (McKibbin 1992).
5Rb454	B-56584	Foraging	2900 ± 60	1263–909 B.C.	950 B.C.	1045 B.C.	Hanging Hearth: Multioccupation shelter with pit-house features. Sample: Charcoal from Hearth AE. Location: Four Mile Wash, DCA (Hauck 1993).
5Rb454	B-42352	Foraging	2880 ± 60	1257–901 B.C.	930 B.C.	1022 B.C.	Hanging Hearth: Multioccupation shelter with pit-house features. Sample: Charcoal from Hearth C. Location: Four Mile Wash, DCA (Hauck 1993).
42Un1476	B-14969	Foraging	2850 ± 75	1257–826 B.C.	900 B.C.	999 B.C.	Site: Multioccupation open site with hearths. Sample: Charcoal specks from Feature 5 hearth. Location: Cliff Creek, Uinta Basin (Tucker 1986).
5Rb454	B-51342	Foraging	2820 ± 60	1126–826 B.C.	870 B.C.	965 B.C.	Hanging Hearth: Multioccupation shelter with pit-house features. Sample: Charcoal from Lens J. Location: Four Mile Wash, DCA (Hauck 1993).
5Rb454	B-42360	Foraging	2780 ± 90	1160–797 B.C.	830 B.C.	911 B.C.	Hanging Hearth: Multioccupation shelter with pit-house features. Sample: Charcoal from Hearth T. Location: Four Mile Wash, DCA (Hauck 1993).
5Rb454	B-56583	Semi-sedentary	2770 ± 60	1036–807 B.C.	820 B.C.	906 B.C.	Hanging Hearth: Multioccupation shelter with pit-house features. Sample: Charcoal from Structure A. Location: Four Mile Wash, DCA (Hauck 1993).
5Rb454	B-51344	Semi-sedentary	2610 ± 70	898–532 B.C.	660 B.C.	799 B.C.	Hanging Hearth: Multioccupation shelter with pit-house features. Sample: Charcoal from Structure A. Location: Four Mile Wash, DCA (Hauck 1993).
5Rb454	B-56581	Foraging	2610 ± 60	844–546 B.C.	660 B.C.	799 B.C.	Hanging Hearth: Multioccupation shelter with pit-house features. Sample: Charcoal from Structure B. Location: Four Mile Wash, DCA (Hauck 1993).
5Mf510	UGa-1355	Foraging	2595 ±100	920–406 B.C.	645 B.C.	796 B.C.	Site: Rockshelter site: other data not available. Location: Yampa Basin (in LaPoint 1987).
5MF476	———	Foraging	2590 ±	———	640 B.C.	795 B.C.	Lay Site: Data not available. Location: Lay Creek, Yampa Basin (in Grady 1984; LaPoint 1987).

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5Rb363	UGa-1496	Foraging	2570 ± 80	844–409 B.C.	620 B.C.	790 B.C.	Site: Rockshelter site; other data not available. Location: Douglas Creek Arch (in Grady 1984).
5Rb2984	B-35122	Foraging	2570 ± 70	833–419 B.C.	620 B.C.	790 B.C.	Site: Data not available. Location: Douglas Creek Arch (in Hauck 1993).
5Mf510	UGa-1356	Foraging	2560 ± 65	823–419 B.C.	610 B.C.	785 B.C.	Site: Rockshelter site; other data not available. Location: Slater Creek, Yampa Basin (in LaPoint 1987).
5Rb454	B-42364	Foraging	2540 ± 60	810–411 B.C.	590 B.C.	771 B.C.	Hanging Hearth: Multioccupation shelter. Sample: Charcoal from collapsed storage chamber. Location: Four Mile Wash, DCA (Hauck 1993).
5Rb298	UGa-1702	Foraging	2515 ±310	1408 B.C.–A.D. 122	565 B.C.	614 B.C.	Site: Campsite; other data not available. Location: Douglas Creek Arch (in Grady 1984).
5Rb454	B-42359	Foraging	2500 ± 80	810–395 B.C.	550 B.C.	632 B.C.	Hanging Hearth: Multioccupation shelter with architectural features. Sample: Charcoal from Hearth S. Location: Four Mile Wash, DCA (Hauck 1993).
5Mf510	UGa-1354	Foraging	2480 ±125	843–246 B.C.	530 B.C.	686 B.C.	Site: Data not available. Location: Slater Creek, Yampa Basin (in LaPoint 1987).
5Rb454	B-42362	Foraging	2470 ±100	814–372 B.C.	520 B.C.	699 B.C.	Hanging Hearth: Multioccupation shelter with architectural features. Sample: Charcoal from Hearth U. Location: Four Mile Wash, DCA (Hauck 1993).
5Rb454	B-42357	Foraging	2430 ± 60	780–388 B.C.	480 B.C.	450 B.C.	Hanging Hearth: Multioccupation shelter with architectural features. Sample: Charcoal from Hearth Q. Location: Four Mile Wash, DCA (Hauck 1993).
5Rb1872	DIC2262	Foraging	2430 ± 55	774–391 B.C.	480 B.C.	450 B.C.	Site: Rockshelter site; other data not available. Location: Douglas Creek Arch (in Grady 1984).
42Un1476	B-14465	Semi-sedentary	2400 ± 80	786–256 B.C.	450 B.C.	407 B.C.	Site: Multioccupation residential site. Sample: Charcoal stain, Feature 9 pithouse feature. Location: Cliff Creek, Uinta Basin (Tucker 1986).
5Mf435	UGa-2738	Foraging	2365 ± 75	765–206 B.C.	415 B.C.	400 B.C.	Duffy Shelter: Multioccupation rockshelter site. Sample: Data not available. Location: Milk Creek, Yampa Basin (in LaPoint 1987).
5Rb454	B-51343	Foraging	2360 ± 50	751–269 B.C.	410 B.C.	399 B.C.	Hanging Hearth: Multioccupation shelter with architectural features. Sample: Charcoal from Level 3. Location: Four Mile Wash, DCA (Hauck 1993).
5Mf2649	B-27983	Foraging	2340 ±100	773–172 B.C.	390 B.C.	395 B.C.	Site: Lithic scatter, Late Archaic point, hearth. Sample: Charcoal from Feature 1 hearth. Location: Echo Park Road, DNM (Truesdale 1989).

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5Mf607	UGa-1853	Foraging	2330 ±110	779–113 B.C.	380 B.C.	393 B.C.	Site: Rockshelter site; additional data not available. Location: White River (in Grady 1984).
42Un1724	B-34326	Foraging	2330 ± 80	759–192 B.C.	380 B.C.	393 B.C.	Juniper Ledge Shelter: Burden basket, maize, insects. Sample: Portion of juniper-bark basket. Location: Jones Hole, DNM (Truesdale 1991).
5Mf607	UGa-1851	Foraging	2300 ± 95	758–112 B.C.	350 B.C.	385 B.C.	Site: Rockshelter site; additional data not available. Location: White River (in Grady 1984).
5Rb699	UGa-3386	Foraging	2255 ± 55	401–176 B.C.	305 B.C.	272 B.C.	Dripping Brow: Hearths within rockshelter. Sample: Charcoal from Stratum D. Location: Douglas Creek, DCA (LaPoint et al. 1981).
5Mf2544	B-32352	Foraging	2250 ± 70	405–112 B.C.	300 B.C.	275 B.C.	Site: Multioccupation campsite with bedrock hearths. Sample: Charcoal from Hearth 3. Location: Lay Peak Ridge, Yampa Basin (Kalasz et al. 1990).
5Rb1463	B-13039	Foraging	2220 ± 90	407–36 B.C.	270 B.C.	304 B.C.	Hummingbird Rockshelter: Multioccupation rockshelter. Sample: Charcoal from Feature 1. Location: Little Bull Draw, DCA (Conner and Langdon 1989).
5Rb454	B-42356	Foraging	2220 ± 60	396–100 B.C.	270 B.C.	304 B.C.	Hanging Hearth: Multioccupation shelter with architectural features. Sample: Charcoal from Hearth P. Location: Four Mile Wash, DCA (Hauck 1993).
42Un1476	B-14467	Foraging	2210 ±120	B.C. 519–60 A.D.	260 B.C.	316 B.C.	Site: Multioccupation open site with Late Archaic pithouses. Sample: Charcoal specks from Feature 12. Location: Cliff Creek, Uinta Basin (Tucker 1986).
5Rb454	B-51339	Foraging	2190 ±60	390–49 B.C.	240 B.C.	199 B.C.	Hanging Hearth: Multioccupation shelter with architectural features. Sample: Charcoal Level 2 hearth. Location: Four Mile Wash, DCA (Hauck 1993).
42Da485	B-34685	Foraging	2180 ± 70	392–35 B.C.	230 B.C.	196 B.C.	Site: Multioccupation camp with architectural features. Sample: Charcoal from F23 hearth. Location: Green River, Browns Park (McKibbin 1992).
5Mf435	UGa-2725	Foraging	2175 ± 95	B.C. 400–84 A.D.	225 B.C.	194 B.C.	Duffy Shelter: Multioccupation rockshelter. Sample: Data not available. Location: Milk Creek, Yampa Basin (in LaPoint 1987).
42Un2180	B-82604	Semi-sedentary	2170 ±110	B.C. 405–65 A.D.	220 B.C.	187 B.C.*	Site: Probable pithouse. Sample: Fill from small pit. Location: Ashley Valley, Uinta Basin (Rich Talbot, pers. comm. 1995).

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42Da393	B-13680	Foraging	2140 ± 90	B.C. 392–67 A.D.	190 B.C.	173 B.C.	Site: Campsite with hearths, architectural features. Sample: Charcoal from interior of Feature C hearth. Location: Green River, Browns Park (Tucker 1986).
42Un2004	B-67119	Semi-sedentary	2130 ±110	B.C. 396–88 A.D.	180 B.C.	165 B.C.	Steinaker Gap: Ephemeral pithouses, maize. Sample: Charcoal from Pit 32. Location: Ashley Valley, Uinta Basin (Talbot and Richens 1994).
5Mf607	UGa-1855	Foraging	2120 ±100	B.C. 392–111 A.D.	170 B.C.	137 B.C.	Site: Rockshelter site; additional data not available. Location: White River (in Grady 1984).
5Mf435	UGa-2731	Foraging	2110 ± 60	B.C. 357–20 A.D.	160 B.C.	114 B.C.	Duffy Shelter: Multioccupation rockshelter. Sample: Data not available. Location: Milk Creek, Yampa Basin (in LaPoint 1987).
42Da485	B-34684	Foraging	2100 ± 80	B.C. 369–76 A.D.	150 B.C.	102 B.C.	Site: Multioccupation camp with architectural features. Sample: Charcoal from F15 hearth. Location: Green River, Browns Park (McKibbin 1992).
42Da485	B-32923	Foraging	2070 ± 60	B.C. 199–72 A.D.	120 B.C.	50 B.C.	Site: Multioccupation camp with architectural features. Sample: Charcoal from F43 hearth Location: Green River, Browns Park (McKibbin 1992).
5Mf435	UGa-2736	Foraging	2045 ± 65	B.C. 195–114 A.D.	90 B.C.	38 B.C.	Duffy Shelter: Multioccupation rockshelter. Sample: Data not available. Location: Milk Creek, Yampa Basin (in LaPoint 1987).
5Rb1872	DIC-2263	Foraging	2040 ± 75	B.C. 199–125 A.D.	90 B.C.	36 B.C.	Site: Data not available. Location: Douglas Creek Arch (in Grady 1984).
42Da545	B-60755	Foraging	2040 ± 60	B.C. 190–111 A.D.	90 B.C.	36 B.C.	Site: Multioccupation rockshelter site. Sample: Charcoal from Level 2. Location: Hope Spring, Uinta Mountains (Loosle et al. 1993).
5Rb1463	B-13042	Foraging	2000 ± 60	B.C. 158–130 A.D.	50 B.C.	12 A.D.	Hummingbird Rockshelter: Multioccupation shelter. Sample: Charcoal lens, Unit 2. Location: Little Bull Draw, DCA (Conner and Langdon 1989).
5Rb2686	B-12969	Foraging	1970 ±160	B.C. 381–416 A.D.	20 B.C.	59 A.D.	Site: Campsite with hearths, lithics. Sample: Charcoal from TU1, Feature 1 hearth. Location: Dripping Rock Creek, ETP (Tucker 1986).
42Da61	B-12959	Foraging	1960 ± 80	B.C. 158–240 A.D.	10 B.C.	66 A.D.	Site: complex surface campsite with hearths, lithics. Sample: Charcoal from TU2 Feature 4. Location: Green River, Browns Park (Tucker 1986).
42Da485	B-32920	Semi-sedentary	1960 ± 60	B.C. 59–217 A.D.	10 B.C.	66 A.D.	Site: Multioccupation base camp. Sample: Charcoal from Feature 27 pithouse. Associated Rose Spring point. Location: Browns Park (McKibbin 1992).
5Mf435	UGa-2726	Foraging	1955 ± 60	B.C. 55–221 A.D.	5 B.C.	69 A.D.	Duffy Shelter: Multioccupation shelter. Sample: Data not available. Location: Milk Creek, Yampa Basin (in LaPoint 1987).

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5Rb2212	— —	Foraging	1950 ± 70	B.C. 92–236 A.D.	1 A.D.	72 A.D.	Site: Campsite. Sample: Data not available. Location: Douglas Creek Arch (in Grady 1984).
42Un118	B-33907	Sedentary	1920 ± 70	B.C. 45–310 A.D.	30 A.D.	84 A.D.	Burnt House Village: Multioccupation village. Sample: Charred wood from pithouse. Location: Cub Creek, DNM (Breternitz 1970a; Truesdale 1990).
5Rb3339	B-54579	Foraging	1900 ± 60	B.C. 3–311 A.D.	50 A.D.	120 A.D.	Charred Cupule: Exposed hearth with maize cupule. Sample: Charcoal from hearth. Location: Cow Canyon, DCA (S. G. Baker 1992a).
42Da393	B-34676	Foraging	1900 ± 80	B.C. 45–330 A.D.	50 A.D.	120 A.D.	Site: Multioccupation camp with ephemeral structure. Sample: Charcoal from North Area. Location: Green River, Browns Park (McKibbin 1992).
5Rb699	UGa-3382	Foraging	1895 ± 70	B.C. 34–323 A.D.	55 A.D.	122 A.D.	Dripping Brow: Multioccupation shelter. Sample: Charcoal from Feature 21 firepit. Location: Douglas Creek, DCA (LaPoint et al. 1981).
42Da485	B-32922	Foraging	1890 ± 80	B.C. 41–336 A.D.	60 A.D.	125 A.D.	Site: Multioccupation camp with ephemeral architecture. Sample: Charcoal from F41 pit. Location: Green River, Browns Park (McKibbin 1992).
5Rb454	B-42355	Foraging	1890 ± 60	4–315 A.D.	60 A.D.	125 A.D.	Hanging Hearth: Multioccupation shelter with architecture. Sample: Charcoal from Feature 1 storage pit. Location: Four Mile Wash, DCA (Hauck 1993).
5Rb454	B-42365	Foraging	1880 ± 100	B.C. 59–398 A.D.	70 A.D.	130 A.D.	Hanging Hearth: Multioccupation shelter with architecture. Sample: Charcoal from Hearth X. Location: Four Mile Wash, DCA (Hauck 1993).
5Rb363	UGa-1495	Foraging	1875 ± 75	B.C. 6–339 A.D.	75 A.D.	132 A.D.	Site: Rockshelter site; additional data not available. Location: Douglas Creek Arch (in Grady 1984).
42Da499	B-41383	Foraging	1870 ± 60	18–325 A.D.	80 A.D.	135 A.D.	Site: Base camp with maize, hearths. Sample: Charcoal from basin-shaped hearth. Location: Whiskey Springs, Browns Park (McKibbin 1992).
42Da193	UGa-3712	Foraging	1860 ± 70	11–342 A.D.	90 A.D.	141 A.D.	Site: Base camp with maize, Archaic-Formative points. Sample: Charcoal from hearth. Location: Rye Grass Draw, Browns Park (Davenport et al. 1981).
5Rb2829	B-42347	Foraging	1850 ± 60	58–336 A.D.	100 A.D.	168 A.D.	White Rock: Shelter with Formative points, figurine. Sample: Charred branches from Feature 2 hearth. Location: West Douglas Creek, DCA (Hauck 1993).
5Rb699	UGa-2425	Foraging	1845 ± 90	B.C. 6–410 A.D.	105 A.D.	157 A.D.	Dripping Brow: Multioccupation shelter with hearths, maize. Sample: Charcoal from Level H, Unit 1. Location: Douglas Creek, DCA (Creasman 1981).

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42Da485	B-34683	Semi-sedentary	1840 ± 80	11–399 A.D.	110 A.D.	215 A.D.	Site: Multioccupation camp with architectural feature. Sample: Charcoal from F27 structure. Location: Green River, Browns Park (McKibbin 1992).
5Rb454	B-51340	Foraging	1830 ± 80	18–407 A.D.	120 A.D.	222 A.D.	Hanging Hearth: Multioccupation shelter with architecture. Sample: Charcoal from Hearth D. Location: Four Mile Wash, DCA (Hauck 1993).
5Rb704	UGa-1922	Foraging	1825 ±100	B.C. 6–426 A.D.	125 A.D.	226 A.D.	Site: Exposed firepit. Sample: Charcoal from Feature 2 firepit. Location: Douglas Creek, DCA (Creasman 1981).
5Rb699	UGa-3384	Foraging	1825 ± 60	73–379 A.D.	125 A.D.	226 A.D.	Dripping Brow: Multioccupation shelter with maize, Formative points. Sample: Charcoal from Stratum C. Location: Douglas Creek, DCA (LaPoint et al. 1981).
5Mf958	B-7021	Foraging	1790 ±130	B.C. 41–548 A.D.	160 A.D.	244 A.D.	Site: Campsite. Sample: Data not available. Location: Vermillion Creek, Wyoming Basin (in LaPoint 1987).
5Rb2792	B-60598	Sedentary	1790 ±100	18–447 A.D.	160 A.D.	244 A.D.	Rimrock Hamlet: Dry-laid masonry structure. Sample: Dispersed charcoal. Location: Douglas Creek, DCA (S. G. Baker and Sanburg 1993).
42Un1708	B-33005	Foraging	1790 ± 80	71–424 A.D.	160 A.D.	244 A.D.	Site: Hearths, formative points, ceramics. Sample: Charcoal from burial component. Location: Jones Hole, DNM (Truesdale 1990).
42Un2004	CAMS-10210	Semi-sedentary	1790 ± 60	87–408 A.D.	160 A.D.	244 A.D.	Steinaker Gap: Maize, ephemeral structures. Sample: Charcoal with Burials 2 and 3. Location: Ashley Valley, Uinta Basin (Talbot and Richens 1994).
5Rb454	B-51338	Foraging	1790 ± 50	123–391 A.D.	160 A.D.	244 A.D.	Hanging Hearth: Multioccupation shelter with architecture. Sample: Charcoal from Level 1 hearth. Location: Four Mile Wash, DCA (Hauck 1993).
42Da392	B-13677	Foraging	1780 ±100	25–532 A.D.	170 A.D.	249 A.D.	Site: Campsite with lithics, hearths, ground stone. Sample: Charcoal from Feature 1 hearth. Location: Rye Grass Draw, Browns Park (Tucker 1986).
42Un2004	CAMS-12270	Semi-sedentary	1780 ± 50	128–400 A.D.	170 A.D.	249 A.D.	Steinaker Gap: Maize, ephemeral structures. Sample: Charcoal with Burials 1 and 4. Location: Ashley Valley, Uinta Basin (Talbot and Richens 1994).
42Un2004	CAMS-11118	Semi-sedentary	1780 ± 60	118–413 A.D.	170 A.D.	249 A.D.	Steinaker Gap: Maize, ephemeral structures. Sample: Charcoal with Burials 1 and 4. Location: Ashley Valley, Uinta Basin (Talbot and Richens 1994).

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5Rb715	UGa-1921	Foraging	1775 ± 65	89–419 A.D.	175 A.D.	308 A.D.	Site: Campsite with lithics, hearths. Sample: Charcoal from Feature 2 firepit. Location: Douglas Creek, DCA (Creasman 1981).
42Da485	B-34686	Foraging	1770 ± 80	79–433 A.D.	180 A.D.	304 A.D.	Site: Multioccupation camp with architectural features. Sample: Charcoal from F34 hearth. Location: Green River, Browns Park (McKibbin 1992).
5Rb726	UGa-2424	Semi-sedentary	1760 ±275	B.C. 389–822 A.D.	190 A.D.	296 A.D.	Brady Site: Ephemeral residential structure, maize. Sample: Charcoal from structure. Location Douglas Creek, DCA (Creasman 1981).
42Da393	B-32918	Semi-sedentary	1740 ±100	75–545 A.D.	210 A.D.	281 A.D.	Site: Multioccupation camp with ephemeral structure. Sample: Charcoal from F14 pithouse. Location: Green River, Browns Park (McKibbin 1992).
5Rb699	W-4248	Foraging	1740 ± 50	150–421 A.D.	210 A.D.	281 A.D.	Dripping Brow: Multioccupation shelter with maize. Sample: Charcoal from Level K, Unit 1. Location: Douglas Creek, DCA (Creasman 1981).
42Da393	B-13678	Foraging	1730 ± 70	134–447 A.D.	220 A.D.	274 A.D.	Site: Multioccupation camp with ephemeral structures. Sample: Charcoal from Feature A hearth. Location: Green River, Browns Park (Tucker 1986).
42Un2004	B-67118	Semi-sedentary	1730 ± 90	87–542 A.D.	220 A.D.	274 A.D.	Steinaker Gap: Maize, ephemeral structures. Sample: Charcoal from Pit 17 hearth. Location: Ashley Valley, Uinta Basin (Talbot and Richens 1994).
42Da485	B-32507	Foraging	1720 ± 60	150–441 A.D.	230 A.D.	341 A.D.	Site: Multioccupation camp with architectural features. Sample: Charcoal from F7 hearth. Location: Green River, Browns Park (McKibbin 1992).
42Un2004	B-56780	Semi-sedentary	1710 ±110	79–601 A.D.	240 A.D.	360 A.D.	Steinaker Gap: Maize, ephemeral structures. Sample: Charcoal from Level 2 residence. Location: Ashley Valley, Uinta Basin (Talbot and Richens 1994).
5Rb2829	B-34174	Foraging	1710 ±110	79–601 A.D.	240 A.D.	360 A.D.	White Rock: Campsite with Formative points, ceramics. Sample: Charcoal from Feature 15 hearth. Location: West Douglas Creek, DCA (Hauck 1993).
42Cb667	B-54287	Storage	1710 ± 80	134–542 A.D.	240 A.D.	360 A.D.	Site: Masonry storage facility. Sample: Corncob from interior surface. Location: Nine Mile Canyon, WTP (Blaine Miller, pers. comm. 1995).
42Da393	B-12965	Semi-sedentary	1700 ±120	75–620 A.D.	250 A.D.	382 A.D.	Site: Multioccupation camp with ephemeral structure. Sample: Charcoal from F1 residential structure. Location: Green River, Browns Park (Tucker 1986).

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5Mf2544	B-32356	Foraging	1700 ± 60	228–532 A.D.	250 A.D.	382 A.D.	Site: Base camp with floral/faunal processing. Sample: Charcoal from Hearth 7. Location: Lay Peak Ridge, Yampa River (Kalasz et al. 1990).
42Da393	B-12964	Semi-sedentary	1690 ± 90	134–592 A.D.	260 A.D.	389 A.D.	Site: Multioccupation camp with ephemeral structure. Sample: Charcoal from F1 residential structure. Location: Green River, Browns Park (Tucker 1986).
42Un2004	B-67117	Semi-sedentary	1690 ± 80	145–548 A.D.	260 A.D.	389 A.D.	Steinaker Gap: Maize, ephemeral structures. Sample: Charcoal from Level 2, Pit 9. Location: Ashley Valley, Uinta Basin (Talbot and Richens 1994).
42Da393	B-34677	Semi-sedentary	1670 ± 70	234–548 A.D.	280 A.D.	405 A.D.	Site: Multioccupation camp with ephemeral structure. Sample: Charcoal from F4 pithouse. Location: Green River, Browns Park (McKibbin 1992).
42Un2004	B-56779	Semi-sedentary	1660 ± 80	228–597 A.D.	290 A.D.	412 A.D.	Steinaker Gap: maize, ephemeral structures. Sample: Carbon from Pit 1 floor. Location: Ashley Valley, Uinta Basin (Talbot and Richens 1994).
42Da384	B-34674	Foraging	1650 ± 80	234–601 A.D.	300 A.D.	415 A.D.	Site: Base camp with ephemeral structure. Sample: Charcoal from Feature D hearth. Location: Rye Grass Draw, Browns Park (McKibbin 1992).
42Un1724	B-36605	Foraging	1650 ± 80	234–601 A.D.	300 A.D.	415 A.D.	Juniper Ledge Shelter: Multioccupation base camp with maize. Sample: Maize from Level 3. Location: Jones Hole, DNM (Truesdale 1991).
5Rb699	UGa-3383	Foraging	1650 ± 60	252–549 A.D.	300 A.D.	415 A.D.	Dripping Brow: Multioccupation rockshelter with maize. Sample: Charcoal from Feature 20 firepit. Location: Douglas Creek, DCA (LaPoint et al. 1981).
5Rb726	UGa-2420	Semi-sedentary	1645 ± 65	250–561 A.D.	305 A.D.	417 A.D.	Brady Site: Ephemeral structure with ceramics, maize. Sample: Charcoal from Feature 8 structure. Location: Douglas Creek, DCA (Creasman 1981).
42Da545	B-60754	Foraging	1640 ± 70	248–597 A.D.	310 A.D.	419 A.D.	Site: Rockshelter with Archaic/Formative features. Sample: Charcoal from pit. Location: Hope Spring, Uinta Mountains (Loosle et al. 1993).
42Da193	UGa-3713	Foraging	1635 ±105	148–644 A.D.	315 A.D.	421 A.D.	Site: Multioccupation base camp with maize, ceramics. Sample: Charcoal from hearth. Location: Rye Grass Draw, Browns Park (Davenport et al. 1981).
5Rb3498	B-56593	Foraging	1630 ± 90	234–630 A.D.	320 A.D.	423 A.D.	Harding Hearth I: Concentration of fire hearths. Sample: Charcoal from Feature C hearth. Location: West Douglas Creek, DCA (Hauck 1993).

Site No.	Lab. No.	Site Type	C-14 Date BP	2 Sigma Range	Calen. Date	Calib. Date	Comments
42Un2182	B-82606	Foraging	1630 ± 70	257–615 A.D.	320 A.D.	423 A.D.*	Site: Probable campsite. Sample: Charcoal. Location: Ashley Valley, Uinta Basin (Rich Talbot, pers. comm. 1995).
42Un1	GXO896	Foraging	1625 ± 95	232–639 A.D.	325 A.D.	425 A.D.	Deluge Shelter: Multioccupation shelter/camp. Sample: Charcoal from Feature 16 hearth in Level 5. Location: Jones Hole, DNM (Leach 1970).
5Rb123	UGa-1046	Foraging	1620 ±195	5–786 A.D.	330 A.D.	427 A.D.	Site: Rockshelter site with ground stone. Sample: Data not available. Location: Douglas Creek, DCA (in Grady 1984).
5Rb2982	B-35121	Foraging	1620 ±100	229–647 A.D.	330 A.D.	427 A.D.	Corrugated Pot Site: Hearths, corrugated ceramics. Sample: Charcoal from hearth. Location: Douglas Creek, DCA (S. G. Baker and Sanburg 1993).
42Un1476	B-13950	Semi-sedentary	1620 ± 80	248–621 A.D.	330 A.D.	427 A.D.	Cockleburr Wash: Aceramic semisubterranean pit-houses. Sample: Charcoal from Feature 14 hearth. Location: Cliff Creek, Uinta Basin (Tucker 1986).
42Da393	B-34675	Foraging	1610 ± 70	260–612 A.D.	340 A.D.	432 A.D.	Site: Multioccupation camp with ephemeral structures. Sample: Charcoal from F2 firepit. Location: Green River, Browns Park (McKibbin 1992).
5Rb234	———	Foraging	1610 ± 50	344–593 A.D.	340 A.D.	432 A.D.	Site: Rockshelter site; no other data available. Sample: Charcoal from Hearth 3. Location: West Douglas Creek, DCA (in Hauck 1993).
42Da61	B-13669	Foraging	1600 ± 70	263–621 A.D.	350 A.D.	439 A.D.	Site: Multioccupation campsite with lithics, hearths. Sample: Charcoal from Feature 18 hearth. Location: Green River, Browns Park (Tucker 1986).
42Un1476	B-14466	Semi-sedentary	1600 ± 70	263–621 A.D.	350 A.D.	439 A.D.	Cockleburr Wash: Aceramic, semisubterranean pit-houses. Sample: Charcoal from Feature 11 pithouse. Location: Cliff Creek, Uinta Basin (Tucker 1986).
42Da485	B-32921	Semi-sedentary	1600 ± 60	339–607 A.D.	350 A.D.	439 A.D.	Site: Multioccupation camp with ephemeral structure. Sample: Charcoal from F38 structure. Location: Green River, Browns Park (McKibbin 1992).
5Rb1460	———	Foraging	1590 ±710	B.C.1259–1954A.D.	360 A.D.	445 A.D.	Site: Campsite. Sample: Data not available. Location: Douglas Creek Arch (in Grady 1984).
42Un162	B-82598	Sedentary	1590 ±140	131–756 A.D.	360 A.D.	503 A.D.*	Site: Residential feature. Sample: Charcoal from floor of pithouse. Location: Ashley Valley, Uinta Basin (Rich Talbot, pers. comm. 1995).
42Un1476	B-13951	Semi-sedentary	1590 ± 90	252–652 A.D.	360 A.D.	445 A.D.	Cockleburr Wash: Semisubterranean residences. Sample: Charcoal from Feature 11 inside pithouse. Location: Cliff Creek, Uinta Basin (Tucker 1986).
5Rb123	UGa-1045	Foraging	1575 ±195	62–882 A.D.	375 A.D.	533 A.D.	Site: Rockshelter site with ground stone. Sample: Data not available. Location: Douglas Creek, DCA (in Grady 1984).

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42Un2093	B-82601	Sedentary	1570 ± 70	342–644 A.D.	380 A.D.	446 A.D.*	Site: Probable pithouse feature. Sample: Charcoal from roasting pit. Location: Ashley Valley, Uinta Basin (Rich Talbot, pers. comm. 1995).
42Un1476	B-13953	Semi-sedentary	1570 ± 80	267–652 A.D.	380 A.D.	535 A.D.	Cockleburr Wash: Semisubterranean residences. Sample: Charcoal from hearth outside pithouse. Location: Cliff Creek, Uinta Basin (Tucker 1986).
5Rb2926	B-35115	Semi-sedentary	1560 ±120	239–681 A.D.	390 A.D.	538 A.D.	Burned Cedar Site: Ephemeral brush structure. Sample: Not available. Location: Douglas Creek, DCA (S. G. Baker and Sanburg 1993).
42Un2181	B-82605	Sedentary	1560 ± 90	261–658 A.D.	390 A.D.	537 A.D.	Site: Possible pithouse feature. Sample: Charcoal from small pit. Location: Ashley Valley, Uinta Basin (Rich Talbot, pers. comm. 1995).
42Un1476	B-13952	Semi-sedentary	1560 ± 80	339–654 A.D.	390 A.D.	538 A.D.	Cockleburr Wash: Semisubterranean residences. Sample: Charcoal from hearth inside pithouse. Location: Cliff Creek, Uinta Basin (Tucker 1986).
5Rb454	B-33784	Foraging	1560 ± 70	380–648 A.D.	390 A.D.	538 A.D.	Hanging Hearth: Multioccupation shelter with architecture. Sample: Charcoal from Hearth E. Location: Four Mile Wash, DCA (Hauck 1993).
42Un83	B-33906	Sedentary	1560 ± 60	395–636 A.D.	390 A.D.	538 A.D.	Fremont Playhouse: Square pithouse feature. Sample: Charcoal from posthole. Location: Cub Creek, DNM (Breternitz 1970a; Truesdale 1990).
5Rb2921	B-35114	Foraging	1550 ± 70	388–652 A.D.	400 A.D.	541 A.D.	Site: Campsite. Sample: Data not available. Location: Douglas Creek Arch (in Hauck 1993).
42Un1773	B-38588	Sedentary	1550 ± 60	403–642 A.D.	400 A.D.	541 A.D.	Site: Semisubterranean residence with prepared clay floor, ceramics. Sample: Charcoal from pit-house. Location: Cub Creek, DNM (Truesdale 1990).
5Mf436	UGa-2747	Foraging	1545 ± 65	339–650 A.D.	405 A.D.	543 A.D.	Empire State Site: Rockshelter site. Sample: Data not available. Location: Williams Fork, Yampa Basin (in LaPoint 1987).
42Un1476	B-14463	Semi-sedentary	1540 ± 75	388–657 A.D.	410 A.D.	544 A.D.	Cockleburr Wash: Semisubterranean residences. Sample: Charcoal from hearth inside pithouse. Location: Cliff Creek, Uinta Basin (Tucker 1986).
5Rb2449		Foraging	1510 ± 60	410–648 A.D.	410 A.D.	544 A.D.	Site: Campsites with hearths, wild flora. Sample: Charcoal from roasting pit with evidence of chenoams. Location: Texas Creek, ETP (Hauck 1993).
42Un1773	B-38589	Sedentary	1530 ± 50	422–642 A.D.	420 A.D.	548 A.D.	Site: Semisubterranean pithouse with prepared clay floor, ceramics. Sample: Charcoal from pithouse. Location: Cub Creek, Uinta Basin (Truesdale 1990).

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42Un119	B-33908	Sedentary	1510 ± 90	388–677 A.D.	440 A.D.	586 A.D.	Dam Site: Semisubterranean pithouse. Sample: Charcoal from adobe-rimmed hearth. Location: Cub Creek, DNM (Breternitz 1970a; Truesdale 1990).
5Mf958	B-7020	Foraging	1500 ± 90	396–682 A.D.	450 A.D.	596 A.D.	Site: Campsite. Sample: Data not available. Location: Vermillion Creek, Wyoming Basin (in LaPoint 1987).
5Mf2615	B-27679	Sedentary	1500 ± 70	418–666 A.D.	450 A.D.	596 A.D.	Pool Creek Burial: Semisubterranean pithouse, hearths. Sample: Charcoal from Feature 2 pit. Location: Pool Creek, DNM (Truesdale 1989).
42Da61	RL-696	Foraging	1490 ±110	346–772 A.D.	460 A.D.	600 A.D.	Site: Campsite with wild flora/faunal processing. Sample: Charcoal from exposed hearth feature. Location: Green River, Browns Park (Fike 1976).
5Rb2958	B-35117	Semi-sedentary	1480 ± 60	437–666 A.D.	470 A.D.	605 A.D.	Sandshadow: Ephemeral structures. Sample: Charcoal from Structure 2. Location: Douglas Creek Arch (S. G. Baker, pers. comm. 1995).
42Un1475	B-13681	Foraging	1470 ± 70	430–677 A.D.	480 A.D.	610 A.D.	Site: Campsite with hearths, pine pollen. Sample: Charcoal from Feature 2 hearth. Location: Cliff Creek, Uinta Basin (Tucker 1986).
5Rb699	UGa-3387	Foraging	1470 ± 70	430–477 A.D.	480 A.D.	610 A.D.	Dripping Brow: Multioccupation shelter with hearths, maize. Sample: Charcoal from Stratum C. Location: Douglas Creek, DCA (LaPoint et al. 1981).
5Rb715	UGa-1923	Foraging	1450 ± 60	534–677 A.D.	500 A.D.	628 A.D.	Site: Campsite with lithics, hearths. Sample: Charcoal from Feature 1 firepit. Location: Douglas Creek, DCA (Creasman 1981).
5Mf660	UGa-2975	Foraging	1440 ± 95	423–779 A.D.	510 A.D.	635 A.D.	Site: Concentration of hearths, faunal/floral processing. Sample: Charcoal from hearth. Location: Vermillion Bluffs, Yampa Basin (LaPoint 1987).
42Da393	B-32917	Semi-sedentary	1440 ± 60	537–682 A.D.	510 A.D.	635 A.D.	Site: Multioccupation camp with ephemeral structure. Sample: Charcoal from pithouse floor. Location: Green River, Browns Park (McKibbin 1992).
42Un95	GX-0357	Sedentary	1430 ± 70	534–756 A.D.	520 A.D.	641 A.D.	Caldwell Village: complex semisubterranean residences. Sample: Charred wood from Pithouse 7. Location: Deep Creek, Uinta Basin (Ambler 1966).
5Mf435	UGa-2727	Foraging	1425 ± 60	542–689 A.D.	525 A.D.	644 A.D.	Duffy Shelter: Rockshelter with ceramics. Sample: Data not available. Location: Milk Creek, Yampa Basin (in LaPoint 1987).
42Un2190	B-82607	Sedentary	1420 ±120	411–883 A.D.	530 A.D.	644 A.D.*	Site: Pithouse feature. Sample: Charcoal from structure floor. Location: Ashley Valley, Uinta Basin (Rich Talbot, pers. comm. 1995).

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5Rb2958	B-38477	Semi-sedentary	1420 ± 50	550–682 A.D.	530 A.D.	646 A.D.	Sandshadow: Ephemeral structures. Sample: Post within House 3. Location: Douglas Creek Arch (S. G. Baker and Sanburg 1993; Hauck 1993).
5Rb363	UGa-1497	Foraging	1410 ±140	389–956 A.D.	540 A.D.	651 A.D.	Site: Rockshelter site. Sample: Data not available. Location: Douglas Creek Arch (in Grady 1984).
42Da61	B-12960	Foraging	1410 ±110	423–881 A.D.	540 A.D.	651 A.D.	Site: Multioccupation campsite. Sample: Charcoal from Feature 8, a possible hearth/oven. Location: Green River, Browns Park (Tucker 1986).
5Mf2639	B-28934	Foraging	1410 ± 80	534–779 A.D.	540 A.D.	651 A.D.	Sand Canyon Shelter: Vandalized shelter with faunal remains. Sample: Charcoal from Feature 1 hearth. Location: Sand Canyon, DNM (Truesdale 1989).
42Un1671	B-82600	Semi-sedentary	1400 ± 80	435–798 A.D.	550 A.D.	650 A.D.	Site: Probable pithouse. Sample: Fill from FS101 within a pithouse. Location: Ashley Valley, Uinta Basin (Rich Talbot, pers. comm. 1995).
5Rb2958	B-38475	Semi-sedentary	1400 ± 70	544–776 A.D.	550 A.D.	654 A.D.	Sandshadow: Ephemeral structures. Sample: Charcoal from House 3. Location: Douglas Creek Arch (S. G. Baker, pers. comm. 1995).
42Un1671	B-82599	Sedentary	1390 ± 80	538–801 A.D.	560 A.D.	653 A.D.*	Site: Pithouse feature. Sample: Charcoal from within F-15 pithouse. Location: Ashley Valley, Uinta Basin (Rich Talbot, pers. comm. 1995).
5Rb3498	B-56592	Foraging	1380 ±140	411–973 A.D.	570 A.D.	660 A.D.	Harding Hearths I: Concentration of hearths. Sample: Charcoal from hearth feature. Location: West Douglas Creek, DCA (Hauck 1993).
5Rb2828	B-34175	Foraging	1380 ±140	411–973 A.D.	570 A.D.	660 A.D.	Narrow Ridge Camp: Campsite with ceramics, obsidian. Sample: Carbon materials from Feature 4 hearth. Location: Little Horse Draw, DCA (Hauck 1993).
5Rb3498	B-56592	Foraging	1380 ± 80	544–790 A.D.	570 A.D.	660 A.D.	Hardings Hearth I: Concentration of hearths. Sample: Charcoal from Feature B shallow basin. Location: West Douglas Creek, DCA (Hauck 1993).
42Da61	B-13674	Foraging	1380 ± 70	551–783 A.D.	570 A.D.	660 A.D.	Site: Multioccupation campsite. Sample: Charcoal from Feature 19 hearth/oven. Location: Green River, Browns Park (Tucker 1986).
42Da485	B-32510	Semi-sedentary	1380 ± 60	570–776 A.D.	570 A.D.	660 A.D.	Site: Multioccupation camp with ephemeral structure. Sample: Charcoal from pithouse. Location: Green River, Browns Park (McKibbin 1992).
42Da499	B-41380	Foraging	1380 ± 60	570–776 A.D.	570 A.D.	660 A.D.	Site: Base camp with fauna/floral, maize, lithics. Sample: Charcoal from Level 6. Location: Whiskey Springs, Browns Park (McKibbin 1992).

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42Un2012	B-54243	Burial	1380 ± 60	570–776 A.D.	570 A.D.	660 A.D.	Site: Infant burial, cradleboard, grave goods. Sample: Leather thong on cradle board. Location: Ashley Valley, Uinta Basin (Truesdale 1992).
5Rb707	UGa-1924	Foraging	1375 ± 60	596–778 A.D.	575 A.D.	661 A.D.	Site: Campsite with hearths, Late Archaic artifacts. Sample: Charcoal from Feature 1 hearth. Location: Douglas Creek, DCA (Creasman 1981).
5Rb3290	B-60057	Storage	1370 ± 90	541–881 A.D.	580 A.D.	662 A.D.	Mud Loaf Cist: Storage structure with maize. Sample: Pinyon from adobe mortar. Location: Douglas Creek Arch (S. G. Baker and Sanburg 1993).
42Da393	B-34678	Foraging	1370 ± 70	560–786 A.D.	580 A.D.	662 A.D.	Site: Multioccupation camp with ephemeral structure. Sample: Charcoal from F13 pit. Location: Green River, Browns Park (McKibbin 1992).
5Mf436	UGa-2742	Foraging	1370 ± 65	570–783 A.D.	580 A.D.	662 A.D.	Empire State Site: Rockshelter site. Sample: Data not available. Location: Williams Fork, Yampa Basin (in LaPoint 1987).
42Un911	UGa-3710	Foraging	1365 ± 65	596–785 A.D.	585 A.D.	664 A.D.	Site: Campsite with wild flora, ground stone, hearths. Sample: Charcoal from a hearth. Location: Jensen Wash, Uinta Basin (Davenport et al. 1981).
42Da61	B-13670	Foraging	1360 ± 50	615–776 A.D.	590 A.D.	665 A.D.	Site: Multioccupation camp with Archaic/Formative lithics. Sample: Charcoal from Feature 7 hearth. Location: Green River, Browns Park (Tucker 1986).
42Da61	B-12961	Foraging	1350 ± 70	599–862 A.D.	600 A.D.	668 A.D.	Site: Multioccupation camp with Archaic/Formative lithics. Sample: Charcoal from Feature 7 hearth. Location: Green River, Browns Park (Tucker 1986).
42Da488	B-34695	Foraging	1350 ± 60	608–786 A.D.	600 A.D.	668 A.D.	Site: Complex base camp with ephemeral structures, maize. Sample: Charcoal from F8 hearth. Location: Green River, Browns Park (McKibbin 1992).
5Rb804	UGa-3379	Semi-sedentary	1350 ± 60	608–786 A.D.	600 A.D.	668 A.D.	Gnats Home: Ephemeral brush structure, ceramics. Sample: Charcoal from floor area of residence. Location: Douglas Creek, DCA (LaPoint et al. 1981).
42Un2179	B-82603	Sedentary	1350 ± 50	606–777 A.D.	600 A.D.	665 A.D.*	Site: Pithouse feature. Sample: Charcoal from fill of pit on ridge slope. Location: Ashley Valley, Uinta Basin (Rich Talbot, pers. comm. 1995).
42Un49	B-30450	Sedentary	1340 ± 50	633–783 A.D.	610 A.D.	671 A.D.	Wagon Run: Semisubterranean pithouse complex. Sample: Charcoal from hearth in Structure 4. Location: Cub Creek, DNM (Truesdale 1990).

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42Da193	UGa-3711	Foraging	1335 ± 70	606–880 A.D.	615 A.D.	674 A.D.	Site: Campsite with faunal/floral processing, maize. Sample: Charcoal from test pit. Location: Rye Grass Draw, Browns Park (Davenport et al. 1981).
5Mf436	UGa-2740	Foraging	1330 ± 80	599–886 A.D.	620 A.D.	676 A.D.	Empire State Site: Rockshelter site. Sample: Data not available. Location: Williams Fork, Yampa Basin (in LaPoint 1987).
5Rb2792	B-60599	Sedentary	1330 ± 70	608–881 A.D.	620 A.D.	676 A.D.	Rimrock Hamlet: Masonry house structure. Sample: Charcoal from living surface. Location: Douglas Creek Arch (S. G. Baker and Sanburg 1993).
5Rb3176	B-64453	Semi-sedentary	1330 ± 70	608–881 A.D.	620 A.D.	676 A.D.	Gray Pot Site: Ephemeral brush structure. Sample: Charcoal. Location: Douglas Creek Arch (S. G. Baker, pers. comm. 1995).
42Un2176	B-82602	Sedentary	1330 ± 70	602–879 A.D.	620 A.D.	687 A.D.*	Site: Probable pithouse feature. Sample: Charcoal from pithouse floor. Location: Ashley Valley, Uinta Basin (Rich Talbot, pers. comm. 1995).
42Un57	B-30451	Sedentary	1310 ± 50	650–862 A.D.	640 A.D.	685 A.D.	Wholeplace Village: Semisubterranean pithouses. Sample: Charcoal from Structure 2. Location: Cub Creek, DNM (Breternitz 1970a; Truesdale 1990).
42Da61	RL-697	Foraging	1300 ± 100	595–973 A.D.	650 A.D.	690 A.D.	Site: Multioccupation camp with hearths, wild flora. Sample: Charcoal from hearth. Location: Green River, Browns Park (Fike 1976; Tucker 1986).
5Mf2645	B-28935	Burial	1300 ± 80	616–943 A.D.	650 A.D.	690 A.D.	Pool Creek Burial: Pithouse, maize, isolated burials. Sample: Juniper bark associated with burial. Location: Pool Creek, DNM (Truesdale 1989).
5Rb726	W-4249	Semi-sedentary	1300 ± 50	653–874 A.D.	650 A.D.	690 A.D.	Brady Site: Ephemeral structure with ceramics, maize. Sample: Charcoal from Feature 9 hearth. Location: Douglas Creek, DCA (Creasman 1981).
5Rb3499	B-56591	Foraging	1300 ± 50	653–874 A.D.	650 A.D.	690 A.D.	Harding Hearth II: Concentration of hearths with wild flora. Sample: Charcoal from Feature 1 hearth. Location: West Douglas Creek, DCA (Hauck 1993).
42Un2004	B-82608	Sedentary	1290 ± 60	644–938 A.D.	660 A.D.	710 A.D.*	Steinaker Gap: Pithouse complex. Sample: Charcoal from irrigation ditch. Location: Ashley Valley, Uinta Basin (Rich Talbot, pers. comm. 1995)
42Un199	B-33004	Storage	1290 ± 50	656–881 A.D.	660 A.D.	746 A.D.	Waltons Cyst: Jacal storage structure in rockshelter, ceramics. Sample: Stick from collapsed wall matrix. Location: Jones Hole, DNM (Truesdale 1990).
5Rb3499	B-56588	Foraging	1290 ± 50	656–881 A.D.	660 A.D.	746 A.D.	Harding Hearth II: Concentration of hearths with wild flora. Sample: Charcoal from Feature 1 hearth. Location: West Douglas Creek, DCA (Hauck 1993).

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5Rb690	UGa-2166	Foraging	1285 ±200	393–1170 A.D.	665 A.D.	743 A.D.	Site: Campsite. Sample: Data not available. Location: Douglas Creek Arch. Date listed in Grady (1984).
5Rb699	UGa-3380	Foraging	1280 ± 70	645–944 A.D.	670 A.D.	739 A.D.	Dripping Brow: Multioccupation shelter with maize. Sample: Charcoal from Feature 16 firepit. Location: Douglas Creek, DCA (LaPoint et al. 1981).
42Da485	B-34689	Foraging	1280 ± 70	645–944 A.D.	670 A.D.	739 A.D.	Site: Multioccupation camp with ephemeral structure. Sample: Charcoal from F44 hearth. Location: Green River, Browns Park (McKibbin 1992).
42Dc49	GX-0825	Sedentary	1280 ± 60	653–889 A.D.	670 A.D.	739 A.D.	Gilbert Site: Wet-laid residential structures, maize, ceramics. Sample: Charred wood from Structure 2. Location: Lake Fork, Uinta Basin (Shields 1967).
42Un1671	B-34715	Semi-sedentary	1280 ± 60	653–889 A.D.	670 A.D.	739 A.D.	Site: Ephemeral structure, maize, ceramics. Sample: Charcoal from within pithouse. Location: Ashley Valley, Uinta Basin (H. B. Phillips 1990).
5Mf958	B-7013	Foraging	1280 ± 50	659–884 A.D.	670 A.D.	739 A.D.	Site: Campsite. Sample: Data not available. Location: Vermillion Creek, Wyoming Basin (in LaPoint 1987).
42Un271	GX-0910	Sedentary	1270 ± 95	617–984 A.D.	680 A.D.	732 A.D.	Goodrich Site: Residential structures, maize, ceramics. Sample: Charred beam from floor of Structure 2. Location: Deep Creek, Uinta Basin (Shields 1967).
5Rb2958	B-38476	Semi-sedentary	1270 ± 80	639–968 A.D.	680 A.D.	732 A.D.	Sandshadow: Ephemeral structures. Sample: Charcoal from House 3. Location: Douglas Creek Arch (S. G. Baker, pers. comm. 1995).
42Cb561	B-27290	Burial	1270 ± 50	661–886 A.D.	680 A.D.	732 A.D.	Site: Burial materials. Sample: Carbon materials with burial. Location: Nine Mile Canyon, WTP (B. Miller, pers. comm. 1995; Nielson 1988).
5Mf1	RL-11	Foraging	1260 ±150	538–1037 A.D.	690 A.D.	776 A.D.	Mantles Cave: Subsurface storage pits, maize, baskets. Sample: Basketry. Location: Yampa River, DNM (Adovasio 1970).
5Rb3288	B-60058	Storage	1260 ±100	617–998 A.D.	690 A.D.	776 A.D.	Clinging Cliff Granary: Masonry storage structure. Sample: Twigs from construction matrix. Location: Douglas Creek Arch (S. G. Baker and Sanburg 1993).
42Da45	RL-778	Foraging	1260 ±100	617–998 A.D.	690 A.D.	776 A.D.	Site: High elevation charcoal scatter extending 1.3 miles. Sample: Charcoal. Location: Uinta Mountains (DeBloois 1983)
5Rb3290	B-60056	Storage	1260 ±90	634–984 A.D.	690 A.D.	776 A.D.	Mud Loaf Granary: Collapsed adobe storage structure with maize. Sample: Uncharred corncob. Location: Douglas Creek Arch (S. G. Baker and Sanburg 1993).

Site No.	Lab. No.	Site Type	C-14 Date BP	2 Sigma Range	Calen. Date	Calib. Date	Comments
42Da488	B-34696	Semi-sedentary	1260 ± 70	653 962 A.D.	690 A.D.	776 A.D.	Site: complex campsite with small pithouse structure. Sample: Charcoal from F13 pithouse. Location: Green River, Browns Park (McKibbin 1992).
42Da485	B-32508	Foraging	1260 ± 60	659 945 A.D.	690 A.D.	776 A.D.	Site: Multioccupation camp,with ephemeral structures. Sample: Charcoal from F9 hearth. Location: Green River, Browns Park (McKibbin 1992).
42Da485	B-32508	Semi-sedentary	1260 ± 50	664 889 A.D.	690 A.D.	776 A.D.	Site: Multioccupation camp with ephemeral structures. Sample: Charcoal from F2 pithouse. Location: Green River, Browns Park (McKibbin 1992).
5Rb2829	B-33786	Foraging	1250 ±110	609 1014 A.D.	700 A.D.	779 A.D.	White Rock Shelter: Rockshelter with hearths, ceramics. Sample: Charcoal from Feature 8 hearth. Location: West Douglas Creek, DCA (Hauck 1993).
42Un154	B82597	Sedentary	1250 ± 80	644 985 A.D.	700 A.D.	776 A.D.*	Site: Probable pithouse. Sample: Charcoal from pit at ridge top. Location: Ashley Valley, Uinta Basin (Rich Talbot, pers. comm. 1995).
42Da61	B-12958	Foraging	1250 ± 70	656 968 A.D.	700 A.D.	779 A.D.	Site: Multioccupation camp with hearths. Sample: Charcoal from Feature 4 hearth. Location: Green River, Browns Park (Tucker 1986).
5Rb1463	B-13041	Foraging	1250 ± 60	662 956 A.D.	700 A.D.	779 A.D.	Hummingbird Rockshelter: Multioccupation shelter. Sample: Charcoal lens, Unit 2. Location: Little Bull Draw, DCA (Conner and Langdon 1989).
5Rb817		Foraging	1245 ± 60	663 959 A.D.	705 A.D.	781 A.D.	Site: An exposed hearth located during survey. Sample: Charcoal. Location: Evacuation Creek, ETP (Gordon et al. 1983).
42Un271	GX-0826	Sedentary	1240 ± 85	631 990 A.D.	710 A.D.	782 A.D.	Goodrich Site: Surface structures, maize, ceramics. Sample: Charred beams from floor area of Structure 2. Location: LaPoint, Uinta Basin (Shields 1967).
5Mf435	UGa-2735	Foraging	1240 ± 70	659 974 A.D.	710 A.D.	782 A.D.	Duffy Shelter: Multioccupation shelter with ceramics. Sample: Data not available. Location: Milk Creek, Yampa Basin (in LaPoint 1987).
42Da61	B-12957	Foraging	1240 ± 70	659 974 A.D.	710 A.D.	782 A.D.	Site: Multioccupation camp with hearths. Sample: Charcoal from Feature 4 hearth. Location: Green River, Browns Park (Tucker 1986).
42Da499	B-41379	Foraging	1240 ± 50	670 946 A.D.	710 A.D.	782 A.D.	Site: Base camp, faunal/floral processing, maize. Sample: Charcoal from Feature 1 pit. Location: Whiskey Springs, Browns Park (McKibbin 1992).

Site No.	Lab. No.	Site Type	C-14 Date BP	2 Sigma Range	Calen. Date	Calib. Date	Comments
42Da61	B-13672	Foraging	1230 ± 70	662–979 A.D.	720 A.D.	786 A.D.	Site: Multioccupation camp with hearths. Sample: Charcoal from Feature 9 hearth. Location: Green River, Browns Park (Tucker 1986).
5Rb699	UGa-1920	Foraging	1225 ± 85	655–1002 A.D.	725 A.D.	788 A.D.	Dripping Brow: Multioccupation shelter with maize. Sample: Charcoal from Feature 1 hearth. Location: Douglas Creek, DCA (Creasman 1981).
5Rb699	UGa-3385	Foraging	1220 ± 65	667–979 A.D.	730 A.D.	789 A.D.	Dripping Brow: Multioccupation shelter with maize. Sample: Charcoal from general level, Stratum C. Location: Douglas Creek, DCA (LaPoint et al. 1981).
5Rb2921	B-35113	Foraging	1220 ± 60	670–974 A.D.	730 A.D.	789 A.D.	Site: Campsite. Sample: Charcoal. Location: Douglas Creek Arch (S. G. Baker, pers. comm. 1995).
42Da61	B-13671	Foraging	1220 ± 50	679–962 A.D.	730 A.D.	789 A.D.	Site: Multioccupation camp with hearths. Sample: Charcoal from Feature 13 hearth. Location: Green River, Browns Park (Tucker 1986).
5Mf2539	B-32347	Foraging	1220 ± 50	679–962 A.D.	730 A.D.	789 A.D.	Site: Multioccupation camp with floral/faunal processing. Sample: Charcoal from Hearth 2. Location: Lay Peak Ridge, Yampa River (Kalasz et al. 1990).
42Un1	GX-0895	Foraging	1215 ± 85	658–1010 A.D.	735 A.D.	848 A.D.	Deluge Shelter: Multioccupation shelter with ceramics, maize. Sample: Charcoal from hearth, Level 4. Location: Jones Hole, DNM (Leach 1970).
42Da499	B-41381	Foraging	1210 ± 50	683–968 A.D.	740 A.D.	840 A.D.	Site: Base camp with faunal/floral processing, maize. Sample: Charcoal from Level 1. Location: Whiskey Springs, Browns Park (McKibbin 1992).
5Rb2958	B-35119	Semi-sedentary	1200 ± 80	665–1011 A.D.	750 A.D.	872 A.D.	Sandshadow: Ephemeral structures. Sample: Charcoal from Structure 1. Location: Douglas Creek Arch (S. G. Baker, pers. comm. 1995).
42Un1395	B-33114	Sedentary	1200 ± 60	679–985 A.D.	750 A.D.	872 A.D.	Site: Semisubterranean pithouse. Sample: Charcoal from Feature 3 pit. Location: Ashley Valley, Uinta Basin (H. B. Phillips and Brunsman 1984).
42Da488	B-34693	Foraging	1200 ± 50	688–974 A.D.	750 A.D.	872 A.D.	Site: Base camp with ceramics. Sample: Charcoal from roasting pit, Feature 2a. Location: Green River, Browns Park (McKibbin 1992).
42Cb109	B-80770	Storage	1190 ± 80	667–1014 A.D.	760 A.D.	881 A.D.	Site: Masonry storage structure. Sample: Corncob. Location: Rock Creek, WTP (Blaine Miller, pers. comm. 1995).
42Un1671	B-34717	Semi-sedentary	1190 ± 70	675–1006 A.D.	760 A.D.	881 A.D.	Site: Ephemeral structure, maize, ceramics. Sample: Charcoal from Feature B8 earthen oven. Location: Ashley Valley, Uinta Basin (H. B. Phillips 1990).

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42Un2012	B-54244	Burial	1190 ± 60	683–990 A.D.	760 A.D.	881 A.D.	Site: Infant burial, cradleboard, grave goods. Sample: Leather hide fragments on the cradleboard. Location: Ashley Valley, Uinta Basin (Truesdale 1992).
5Rb2449	———	Foraging	1190 ± 50	708–979 A.D.	760 A.D.	881 A.D.	Site: Campsite with hearths, wild floral processing. Sample: Charcoal from hearth. Location: Texas Creek, ETP (Hauck 1993).
42Un1475	B-12955	Foraging	1180 ± 80	670–1017 A.D.	770 A.D.	883 A.D.	Site: Campsite with hearths, pine pollen. Sample: Charcoal from Feature 1 hearth. Location: Cliff Creek, Uinta Basin (Tucker 1986).
5Rb3060	B-38473	Semi-sedentary	1170 ±100	662–1032 A.D.	780 A.D.	886 A.D.	New Site: Ephemeral brush structure. Sample: Not available. Location: Douglas Creek Arch (S. G. Baker, pers. comm. 1995).
5Rb2449	—	Foraging	1170 ± 60	709–1006 A.D.	780 A.D.	886 A.D.	Site: Campsite with hearth features, wild floral processing. Sample: Charcoal from hearth. Location: Texas Creek, ETP (in Hauck 1993).
42Da485	B-32509	Semi-sedentary	1170 ± 60	709–1006 A.D.	780 A.D.	886 A.D.	Site: Multioccupation camp with ephemeral structure. Sample: Charcoal from F2 pithouse. Location: Green River, Browns Park (McKibbin 1992).
5Rb2829	B-33787	Foraging	1170 ± 90	667–1026 A.D.	780 A.D.	886 A.D.	White Rock Shelter: Hearths, figurine, ceramics. Sample: Charcoal from Feature 11 hearth. Location: West Douglas Creek, DCA (Hauck 1993).
42Cb770	B-33483	Sedentary	1160 ± 70	688–1017 A.D.	790 A.D.	888 A.D.	Site: Pithouse complex. Sample: Charcoal from pithouse floor. Location: Nine Mile Canyon, WTP (Ray T. Matheny, pers. comm. 1995).
5Rb2829	B-33788	Foraging	1160 ± 60	718–1011 A.D.	790 A.D.	888 A.D.	White Rock Shelter: Hearths, figurine, ceramics. Sample: Data not available. Location: West Douglas Creek, DCA (Hauck 1993).
5Rb733	B-40453	Semi-sedentary	1150 ± 70	709–1020 A.D.	800 A.D.	891 A.D.	Pedestal House: Ephemeral structure, wild flora. Sample: Charred greasewood from hearth. Location: Douglas Creek, DCA (S. G. Baker 1992b).
5Rb726	W-4246	Semi-sedentary	1150 ± 50	778–1006 A.D.	800 A.D.	891 A.D.	Brady Site: Ephemeral structures with ceramics, maize. Sample: Charcoal from Feature 10 firepit. Location: Douglas Creek, DCA (Creasman 1981).
42Un53	B-12966	Sedentary	1140 ± 70	718–1023 A.D.	810 A.D.	893 A.D.	Site: Pithouse complex. Sample: Charcoal from residential structure, Feature 26. Location: Brush Creek, Uinta Basin (Tucker 1986).
42Da488	B-34692	Foraging	1140 ± 60	775–1017 A.D.	810 A.D.	893 A.D.	Site: Base camp with ephemeral pithouse. Sample: Charcoal from F5 hearth with maize. Location: Green River, Browns Park (McKibbin 1992).

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5Rb2829	B-33785	Foraging	1140 ± 50	782–1012 A.D.	810 A.D.	893 A.D.	White Rock Shelter: Hearths, ceramics. Sample: Charcoal from feature with figurine. Location: West Douglas Creek, DCA (Hauck 1993).
42Un170	GAK-1306	Sedentary	1130 ± 80	710–1032 A.D.	820 A.D.	914 A.D.	Whiterocks Village: Pithouse complex, ceramics, maize. Sample: Charred wood from Structure 2. Location: Uintah River, Uinta Basin (Shields 1967)
42Da393	B-34679	Semi-sedentary	1130 ± 80	710–1032 A.D.	820 A.D.	914 A.D.	Site: Multioccupation camp with ephemeral structure. Sample: Charcoal from depression. Location: Green River, Browns Park (McKibbin 1992).
5Rb733	B-40454	Semi-sedentary	1120 ± 60	782–1023 A.D.	830 A.D.	906 A.D.	Pedestal House: Ephemeral brush structure. Sample: charred greasewood from Feature 3 brush structure. Location: Douglas Creek, DCA (S. G. Baker 1992b).
5Rb699	W-4250	Foraging	1120 ± 50	789–1017 A.D.	830 A.D.	906 A.D.	Dripping Brow: Multioccupation shelter with maize. Sample: Charcoal from Feature 14 firepit. Location: Douglas Creek, DCA (Creasman 1981).
42Un1724	B-31325	Foraging	1110 ± 50	818–1020 A.D.	840 A.D.	967 A.D.	Juniper Ledge Shelter: Hearths with faunal, maize, insect remains. Sample: Charcoal from Feature 4. Location: Jones Hole, DNM (Truesdale 1991).
5Rb2445	B-6098	Foraging	1100 ±100	689–1165 A.D.	850 A.D.	973 A.D.	Site: Exposed hearth feature. Sample: Charcoal. Location: Cow Canyon, DCA (in S. G. Baker 1992a).
42Cb729	B-54289	Storage	1100 ± 90	718–1159 A.D.	850 A.D.	973 A.D.	Site: Masonry storage structure. Sample: Portion of wooden shovel. Location: Nine Mile Canyon, WTP (H. B. Phillips, pers. comm. 1995).
5Mf436	UGa-2745	Foraging	1090 ± 85	775–1159 A.D.	860 A.D.	978 A.D.	Empire State Site: Multioccupation campsite. Sample: Data not available. Location: Williams Fork, Yampa Basin (in LaPoint 1987).
5Rb3176	B-64454	Semi-sedentary	1090 ± 80	779–1156 A.D.	860 A.D.	978 A.D.	Gray Pot Site: Ephemeral brush structure. Sample: Charcoal from interior. Location: Douglas Creek Arch (S. G. Baker, pers. comm. 1995).
42Un170	GX-0902	Sedentary	1090 ± 60	819–1033 A.D.	860 A.D.	978 A.D.	Whiterocks Village: Pithouse complex with ceramics, maize. Sample: Charred wood from Structure 2. Location: Uintah River, Uinta Basin (Shields 1967).
42Dc665	B-49628	Storage	1090 ± 60	819–1033 A.D.	860 A.D.	978 A.D.	Site: Masonry storage structure. Sample: Portion of a wooden digging stick. Location: Nine Mile Canyon, WTP (Spangler 1993b).
42Da61	B-13673	Foraging	1080 ± 80	782–1159 A.D.	870 A.D.	984 A.D.	Site: Multioccupation camp with hearths, wild flora. Sample: Charcoal from interior of Feature 16 hearth. Location: Green River, Browns Park (Tucker 1986).

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42Da488	B-34694	Semi-sedentary	1080 ± 60	870–1037 A.D.	870 A.D.	984 A.D.	Site: Base camp with ephemeral structure. Sample: Charcoal from within Feature 3 pithouse. Location: Green River, Browns Park (McKibbin 1992).
42Da485	B-34687	Foraging	1080 ± 50	883–1029 A.D.	870 A.D.	984 A.D.	Site: Multioccupation camp with ephemeral structure. Sample: Charcoal from F36 hearth. Location: Green River, Browns Park (McKibbin 1992).
5Mf2539	B-32349	Foraging	1080 ± 50	883–1029 A.D.	870 A.D.	984 A.D.	Site: Multioccupation camp with floral/faunal processing. Sample: Charcoal from Hearth 4. Location: Lay Peak Ridge, Yampa River (Kalasz et al. 1990).
5Mf429	———	Foraging	1080 ± 50	883–1029 A.D.	870 A.D.	984 A.D.	Site: Campsite. Sample: Data not available. Location: Milk Creek, Yampa Basin (in A. Reed 1994).
5Rb2958	B-35120	Semi-sedentary	1070 ± 80	785–1162 A.D.	880 A.D.	989 A.D.	Sandshadow: Ephemeral structures. Sample: Charcoal from Structure 1. Location: Douglas Creek Arch (S. G. Baker, pers. comm. 1995).
5Rb1873	DIC-2264	Foraging	1070 ± 50	885–1033 A.D.	880 A.D.	989 A.D.	Site: Rockshelter site. Sample: Data not available. Location: East Douglas Creek, DCA (in Grady 1984).
5Mf435	UGa-2728	Foraging	1065 ± 60	881–1152 A.D.	885 A.D.	993 A.D.	Duffy Shelter: Multioccupation rockshelter. Sample: Data not available. Location: Milk Creek, Yampa Basin (in LaPoint 1987).
5Rb2829	B-33788	Foraging	1060 ± 60	883–1153 A.D.	890 A.D.	997 A.D.	White Rock Shelter: Hearths, figurine, ceramics. Sample: Charcoal from feature with figurine. Location: West Douglas Creek, DCA (Hauck 1993).
5Mf958	UGa-3998	Foraging	1055 ±230	557–1397 A.D.	895 A.D.	1001 A.D.	Site: Campsite with multiple features. Sample: Not indicated. Location: Vermillion Creek, Wyoming Basin (in LaPoint 1987).
5Mf436	UGa-2746	Foraging	1055 ± 70	876–1161 A.D.	895 A.D.	1001 A.D.	Empire State Site: Multioccupation rockshelter. Sample: Data not available. Location: Williams Fork, Yampa Basin (in LaPoint 1987; A. Reed 1994).
5Mf435	UGa-2729	Foraging	1055 ± 60	884–1155 A.D.	895 A.D.	1001 A.D.	Duffy Shelter: Multioccupation shelter. Sample: Data not available. Location: Milk Creek, Yampa Basin (in LaPoint 1987).
5Rb3180	B-60054	Storage	1050 ± 90	786–1202 A.D.	900 A.D.	1005 A.D.	Tres Monadas Granary: Masonry storage structure. Sample: Pinyon from construction matrix. Location: Douglas Creek Arch (S. G. Baker and Sanburg 1993).
5Mf435	UGa-2733	Foraging	1045 ± 60	886–1158 A.D.	905 A.D.	1008 A.D.	Duffy Shelter: Multioccupation rockshelter. Sample: Data not available. Location: Milk Creek, Yampa Basin (in LaPoint 1987).

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42Un1	GX-0894	Foraging	1030 ± 85	870–1215 A.D.	920 A.D.	1014 A.D.	Deluge Shelter: Multioccupation shelter, ceramics. Sample: Charcoal from Level 3 hearths. Location: Jones Hole, DNM (Leach 1970).
5Mf2656	B-27983	Storage	1030 ± 60	890–1162 A.D.	920 A.D.	1014 A.D.	Site: Storage structures complex with maize. Sample: Wood from collapsed jacal roof, Feature 3. Location: Yampa River, DNM (Truesdale 1989).
5Mf435	UGa-2739	Foraging	1030 ± 60	890–1162 A.D.	920 A.D.	1014 A.D.	Duffy Shelter: Multioccupation rockshelter. Sample: Data not available. Location: Milk Creek, Yampa River (in LaPoint 1987; A. Reed 1994).
42Da61	B-12962	Foraging	1010 ± 70	890–1203 A.D.	940 A.D.	1020 A.D.	Site: Multioccupation camp with hearths, wild flora.. Sample: Charcoal from Feature 8 hearth. Location: Green River, Browns Park (Tucker 1986).
5Mf435	UGa-2734	Foraging	1010 ± 60	895–1168 A.D.	940 A.D.	1020 A.D.	Duffy Shelter: Multioccupation rockshelter. Sample: Data not available. Location: Milk Creek, Yampa Basin (in LaPoint 1987; A. Reed 1994).
5Rb3498	B-56589	Foraging	1010 ± 50	900–1162 A.D.	940 A.D.	1020 A.D.	Harding Hearth I: Concentration of hearths. Sample: Charcoal from Feature A roasting pit. Location: West Douglas Creek, DCA (Hauck 1993).
42Un1671	B-32378	Semi-sedentary	1000 ± 90	883–1230 A.D.	950 A.D.	1022 A.D.	Site: Ephemeral structure with maize, ceramics. Sample: Wood from Feature B6 pithouse. Location: Ashley Valley, Uinta Basin (H. B. Phillips 1990).
5Rb3334	B-63155	Semi-sedentary	1000 ± 60	898–1179 A.D.	950 A.D.	1022 A.D.	Finally Summer: Brush residential structure. Sample: Charred material. Location: Douglas Creek Arch (S. G. Baker, pers. comm. 1995).
5Mf1	AA-7824	Foraging	1000 ± 52	969–1167 A.D.	950 A.D.	1022 A.D.	Mantles Cave: Subsurface storage pits, maize. Sample: Leather thong from feather headdress. Location: Yampa River, DNM (Truesdale 1993).
5Mf2544	B-32353	Foraging	1000 ± 50	972–1165 A.D.	950 A.D.	1022 A.D.	Site: Multioccupation camp with floral/faunal processing. Sample: Charcoal from Hearth 5. Location: Lay Peak Ridge, Yampa Basin (Kalasz et al. 1990).
5Rb2873	B-34176	Foraging	990 ±230	627–1416 A.D.	960 A.D.	1025 A.D.	Little Horse I: complex of hearths. Sample: Charcoal from Feature 5 hearth. Location: Little Horse Draw, DCA (Hauck 1993).
5Rb2829	B-42348	Foraging	990 ± 90	885–1249 A.D.	960 A.D.	1025 A.D.	White Rock Shelter: Hearths, ceramics, figurine. Sample: Charcoal from Feature 5 hearth. Location: West Douglas Creek, DCA (Hauck 1993).
42Cb731	B-54288	Storage	990 ± 50	977–1168 A.D.	960 A.D.	1025 A.D.	Site: Masonry storage structure. Sample: Portion of wooden digging stick. Location: Nine Mile Canyon, WTP (Blaine Miller, pers. comm. 1995).
42Cb615	B-54286	Storage	990 ± 70	895–1218 A.D.	960 A.D.	1025 A.D.	Site: Masonry storage structure, maize, ceramics. Sample: Corncob. Location: Nine Mile Canyon, WTP (Blaine Miller, pers. comm. 1995).

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42Da499	B-41382	Foraging	990 ± 50	977–1168 A.D.	960 A.D.	1025 A.D.	Site: Multioccupation camp. Sample: Charcoal from hearth with maize fragments. Location: Whiskey Springs, Browns Park (McKibbin 1992).
5Rb2828	B-42349	Foraging	980 ± 80	893–1230 A.D.	970 A.D.	1028 A.D.	Narrow Ridge Camp: Hearths, ceramics, obsidian. Sample: Charcoal from Feature 1 hearth. Location: Little Horse Draw, DCA (Hauck 1993).
5Rb3498	B-56585	Foraging	980 ± 50	983–1180 A.D.	970 A.D.	1028 A.D.	Harding Hearth I: Concentration of hearths. Sample: Charcoal from Feature A roasting pit. Location: West Douglas Creek, DCA (Hauck 1993).
42Cb770	B-39266	Sedentary	980 ± 50	983–1180 A.D.	970 A.D.	1028 A.D.	Franks Place: Masonry pithouses, maize, ceramics. Sample: Charcoal from Pithouse 1. Location: Nine Mile Canyon, WTP (P. Thompson 1993).
42Cb770	B-39268	Sedentary	980 ± 60	972–1215 A.D.	970 A.D.	1028 A.D.	Franks Place: Masonry pithouses, maize, ceramics. Sample: Charcoal from work area. Location: Nine Mile Canyon, WTP (P. Thompson 1993).
42Da485	B-34688	Semi-sedentary	970 ±220	651–1416 A.D.	980 A.D.	1032 A.D.	Site: Multioccupation camp with ephemeral structures. Sample: Charcoal from F27 pithouse. Location: Green River, Browns Park (McKibbin 1992).
5Mf436	UGa-2744	Foraging	970 ± 65	972–1222 A.D.	980 A.D.	1032 A.D.	Empire State Site: Multioccupation rockshelter. Sample: Data not available. Location: Williams Fork, Yampa Basin (in LaPoint 1987; A. Reed 1994).
5Rb2873	B-42350	Foraging	960 ± 80	898–1256 A.D.	990 A.D.	1037 A.D.	Little Horse I: Hearths, faunal processing. Sample: Charcoal from Feature 4 hearth. Location: Little Horse Draw, DCA (Hauck 1993).
5Rb3060	B-41950	Semi-sedentary	960 ± 70	972–1230 A.D.	990 A.D.	1037 A.D.	New Site: Ephemeral brush structure. Sample: Charcoal from hearth fill. Location: Douglas Creek Arch (S. G. Baker, pers. comm. 1995).
5Rb748	UGa-3389	Sedentary	950 ± 70	978–1250 A.D.	1000 A.D.	1046 A.D.	Edge Site: Masonry residential structures, ceramics. Sample: Charcoal from posthole within structure. Location: Douglas Creek, DCA (LaPoint et al. 1981).
5Rb2025		Foraging	950 ± 55	996–1222 A.D.	1000 A.D.	1046 A.D.	Site: Campsite. Sample: Data not available. Location: Douglas Creek Arch (in Grady 1984).
5Mf745	UGa-2750	Foraging	945 ±115	884–1289 A.D.	1005 A.D.	1112 A.D.	Site: Campsite. Sample: Data not available. Location: Yampa Basin (in A. Reed 1994).
42Un2083	B-69506	Burial	940 ± 60	996–1230 A.D.	1010 A.D.	1115 A.D.	Bean Draw Burial: Campsite, burial, grave goods. Sample: Human bone. Location: Bean Draw, Uinta Basin (H. B. Phillips 1992).

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5Rb1463	B-13040	Foraging	940 ± 50	1010–1222 A.D.	1010 A.D.	1115 A.D.	Hummingbird Rockshelter: Multioccupation shelter. Sample: Cordage from Feature 2. Location: Little Bull Draw, DCA (Conner and Langdon 1989).
5Mf435	UGa-2737	Foraging	895 ± 75	1007–1284 A.D.	1055 A.D.	1166 A.D.	Duffy Shelter: Multioccupation shelter. Sample: Data not available. Location: Milk Creek, Yampa Basin (in LaPoint 1987).
5Mf1	AA-7823	Foraging	882 ± 60	1021–1281 A.D.	1068 A.D.	1172 A.D.	Mantles Cave: Subsurface storage pits, maize. Sample: Ermine fur from flicker-feather headdress. Location: Yampa River, DNM (Truesdale 1993).
42Da485	B-32919	Foraging	880 ± 70	1016–1285 A.D.	1070 A.D.	1176 A.D.	Site: Multioccupation camp with ephemeral structure. Sample: Charcoal from F30 hearth. Location: Green River, Browns Park (McKibbin 1992).
42Cb770	B-33952	Sedentary	880 ± 70	1016–1285 A.D.	1070 A.D.	1176 A.D.	Franks Place: Masonry pithouse complex. Sample: Burial in Pithouse 1. Location: Nine Mile Canyon, WTP (P. Thompson 1993).
5Rb2210	—	Foraging	880 ± 70	1016–1285 A.D.	1070 A.D.	1176 A.D.	Site: Campsite. Sample: Data not available. Location: Douglas Creek Arch (in Grady 1984).
42Dc619	B-39267	Sedentary	880 ± 50	1028–1277 A.D.	1070 A.D.	1176 A.D.	Site: Masonry pithouse, maize, ceramics. Sample: Charcoal from Pithouse 1. Location: Nine Mile Canyon, WTP (P. Thompson 1993).
5Rb3515	B-60059	Storage	870 ± 60	1025–1283 A.D.	1080 A.D.	1195 A.D.	Solo Monadas Cist: Freestanding storage structure. Sample: Pinyon from collapsed roof. Location: Douglas Creek Arch (S. G. Baker and Sanburg 1993).
5Rb699	UGa-2421	Foraging	850 ± 65	1028–1289 A.D.	1100 A.D.	1218 A.D.	Dripping Brow: Multioccupation shelter with hearths, maize. Sample: Charcoal from Level 16/J. Location: Douglas Creek, DCA (Creasman 1981).
5Rb3339	B-54578	Foraging	830 ±100	1013–1386 A.D.	1120 A.D.	1225 A.D.	Charred Cupule: Hearth with wild flora, maize. Sample: Charcoal flecks from dispersed charcoal. Location: Cow Canyon, DCA (S. G. Baker 1992a).
42Dc655	B-48829	Storage	830 ± 70	1031–1296 A.D.	1120 A.D.	1225 A.D.	Site: Masonry storage structure. Sample: Corncob recovered from adobe matrix. Location: Nine Mile Canyon, WTP (Spangler 1993b).
5Rb2958	B-35118	Semi-sedentary	830 ± 60	1041–1291 A.D.	1120 A.D.	1225 A.D.	Sandshadow: Ephemeral structures. Sample: Charcoal from Structure 1. Location: Douglas Creek Arch (S. G. Baker, pers. comm. 1995).
5Rb733	B-40454	Semi-sedentary	830 ± 60	1041–1291 A.D.	1120 A.D.	1225 A.D.	Pedestal House: Ephemeral structure. Sample: Charcoal from residence. Location: Douglas Creek Arch (S. G. Baker, pers. comm. 1995).
5Mf379	M-286	Storage	820 ±200	789–1454 A.D.	1130 A.D.	1229 A.D.	Site: Masonry storage structure. Sample: Corncob collected by Wenger (1955). Location: Blue Mountain (Crane and Griffith 1958).

Site No.	Lab. No.	Site Type	C-14 Date BP	2 Sigma Range	Calen. Date	Calib. Date	Comments
42Un1103	B-8559	Storage	800 ±140	984–1421 A.D.	1150 A.D.	1253 A.D.	Site: Jacal storage structure in small rockshelter, maize. Sample: Charcoal from Level 1. Location: Jones Hole, DNM (Liestman 1985).
5Rb733	B-40453	Semi-sedentary	800 ± 70	1046–1303 A.D.	1150 A.D.	1253 A.D.	Pedestal House: Ephemeral structure. Sample: Charcoal from residence. Location: Douglas Creek Arch (S. G. Baker, pers. comm. 1995).
5Rb234	———	Foraging	800 ± 60	1063–1298 A.D.	1150 A.D.	1253 A.D.	Site: Rockshelter site. Sample: Data not available. Sample: Charcoal from Feature 1 hearth. Location: Douglas Creek, DCA (in Hauck 1993).
5Mf435	UGa-3155	Foraging	785 ± 95	1029–1397 A.D.	1165 A.D.	1271 A.D.	Duffy Shelter: Multioccupation shelter. Sample: Data not available. Location: Milk Creek, Yampa Basin (in A. Reed 1994).
5Rb3182	B-55302	Semi-sedentary	740 ±100	1046–1411 A.D.	1210 A.D.	1284 A.D.	Broken Blade Wickiup: Ephemeral structure. Sample: Dispersed charcoal from residence. Location: Douglas Creek Arch (S. G. Baker and Sanburg 1993).
5Rb699	UGa-2423	Foraging	740 ± 85	1162–1403 A.D.	1210 A.D.	1284 A.D.	Dripping Brow: Multioccupation shelter with maize. Sample: Charcoal from Feature 5 firepit. Location: Douglas Creek, DCA (Creasman 1981).
5Rb2828	B-33790	Foraging	740 ± 80	1165–1401 A.D.	1210 A.D.	1284 A.D.	Narrow Ridge Camp: Hearths, ceramics, obsidian. Sample: Charcoal from Feature 2 hearth. Location: Little Horse Draw, DCA (Hauck 1993).
5Rb699	UGa-2422	Foraging	725 ± 60	1219–1395 A.D.	1225 A.D.	1287 A.D.	Dripping Brow: Multioccupation shelter with maize. Sample: Charcoal from Feature 10 firepit. Location: Douglas Creek, DCA (Creasman 1981).
5Rb2372	———	Foraging	720 ± 80	1173–1406 A.D.	1230 A.D.	1288 A.D.	Site: Campsite. Sample: Data not available. Location: Douglas Creek Arch (in Hauck 1993).
5Rb817	UGa-2496	Foraging	705 ± 60	1227–1400 A.D.	1245 A.D.	1291 A.D.	Site: Campsite. Sample: Data not available. Location: Evacuation Creek, ETP (in Grady 1984 and A. Reed 1994).
42Un1724	B-34324	Foraging	700 ± 60	1229–1401 A.D.	1250 A.D.	1293 A.D.	Juniper Ledge Shelter: Shelter with faunal remains, maize. Sample: Charcoal fragment from Feature 1. Location: Jones Hole, DNM (Truesdale 1991).
5Rb2873	B-33793	Foraging	690 ± 50	1259–1398 A.D.	1260 A.D.	1295 A.D.	Little Horse I: Hearths, faunal processing. Sample: Charcoal fragments from Feature 2 hearth. Location: Little Horse Draw, DCA (Hauck 1993).
42Cb776	B-49627	Storage	690 ± 50	1259–1398 A.D.	1260 A.D.	1295 A.D.	Site: Masonry storage structure. Sample: Wood from construction pole. Location: Nine Mile Canyon, WTP (Spangler 1993b).
5Mf607	UGa-2003	Foraging	680 ± 60	1247–1406 A.D.	1270 A.D.	1298 A.D.	Site: Rockshelter. Sample: Data not available. Location: White River (in Grady 1984 and A. Reed 1994).

Site No.	Lab. No.	Site Type	C-14 Date BP	2 Sigma Range	Calen. Date	Calib. Date	Comments
42Un1477	B-13692	Foraging	680 ± 60	1247–1406 A.D.	1270 A.D.	1298 A.D.	Site: Campsite with hearths, obsidian from Mineral Mountains. Sample: Charcoal from Feature 23 hearth. Location: Cliff Creek, Uinta Basin (Tucker 1986).
5Mf745	UGa-2749	Foraging	675 ± 80	1223–1424 A.D.	1275 A.D.	1299 A.D.	Site: Campsite. Sample: Data not available. Location: Milk Creek, Yampa Basin (in Grady 1984; A. Reed 1994).
5Rb804	UGa-3378	Semi-sedentary	670 ±270	821–1954 A.D.	1280 A.D.	1300 A.D.	Gnat Home: Ephemeral residential structure on sand dune. Sample: Charcoal from Feature 4 hearth. Location: Douglas Creek, DCA (LaPoint et al. 1981).
42Un1103	B-8560	Storage	670 ± 50	1275–1403 A.D.	1280 A.D.	1300 A.D.	Site: Jacal storage structure located in small rock-shelter, maize. Sample: Charcoal from Level 2. Location: Jones Hole, DNM (Liestman 1985).
5Rb3182	B-55305	Semi-sedentary	650 ± 90	1225–1439 A.D.	1300 A.D.	1367 A.D.	Broken Blade Wickiup: Ephemeral structure. Sample: Dispersed charcoal outside wickiup. Location: Douglas Creek Arch (S. G. Baker and Sanburg 1993).
5Mf2544	B-32351	Foraging	600 ± 80	1278–1447 A.D.	1350 A.D.	1333 A.D.	Site: Multioccupation base camp with bedrock hearths. Sample: Charcoal from Hearth 2. Location: Lay Peak Ridge, Yampa River (Kalasz et al. 1990).
5Mf2544	B-32355	Foraging	600 ± 50	1292–1431 A.D.	1350 A.D.	1333 A.D.	Site: Multioccupation base camp with bedrock hearths. Sample: Charcoal from Hearth 6. Location: Lay Peak Ridge, Yampa River (Kalasz et al. 1990).
5Rb3180	B-60055	Storage	590 ± 80	1281–1449 A.D.	1360 A.D.	1398 A.D.	Tres Monadas: Jacal and masonry storage structures. Sample: Charcoal from burn level. Location: Douglas Creek Arch (S. G. Baker and Sanburg 1993).
5Mf2631	B-49093	Semi-sedentary	590 ± 60	1290–1439 A.D.	1360 A.D.	1398 A.D.	Wickiup Site: Ephemeral structure. Sample: Data not available. Location: Yampa Basin (in A. Reed 1994).
5Rb2958	CAMS-9082	Semi-sedentary	580 ± 80	1283–1455 A.D.	1370 A.D.	1400 A.D.	Sandshadow: Ephemeral brush structures. Sample: Bone from house floor. Location: Douglas Creek Arch (S. G. Baker, pers. comm. 1995).
5Rb3511	B-63156	Foraging	570 ± 60	1295–1444 A.D.	1380 A.D.	1403 A.D.	Red Bull Hearth: Campsite. Sample: Charred material. Location: Douglas Creek Arch (S. G. Baker, pers. comm. 1995).
5Mf2539	B-32346	Foraging	540 ± 60	1302–1455 A.D.	1410 A.D.	1410 A.D.	Site: Multioccupation base camp with bedrock hearths. Sample: Charcoal from Hearth 1. Location: Lay Peak Ridge, Yampa River (Kalasz et al. 1990).

Site No.	Lab. No.	Site Type	C-14 Date BP	2 Sigma Range	Calen. Date	Calib. Date	Comments
5Rb748	UGa-3377	Sedentary	520 ±75	1300–1611 A.D.	1430 A.D.	1421 A.D.	Edge Site: Wet-laid masonry residential structure. Sample: Charcoal from structure posthole. Location: Douglas Creek, DCA (LaPoint et al. 1981).
42Da384/193	B-13676	Foraging	500 ± 90	1297–1635 A.D.	1450 A.D.	1431 A.D.	Site: Isolated hearth. Sample: Charcoal from interior of Feature 1 hearth. Location: Rye Grass Draw, Browns Park (Tucker 1986).
5Mf2539	B-32348	Foraging	470 ± 80	1310–1638 A.D.	1480 A.D.	1438 A.D.	Site: Multioccupation base camp with bedrock hearths. Sample: Charcoal from Hearth 3. Location: Lay Peak Ridge, Yampa River (Kalasz et al. 1990).
5Rb699	UGa-3381	Foraging	460 ± 60	1400–1627 A.D.	1490 A.D.	1441 A.D.	Dripping Brow: Multioccupation shelter with maize. Sample: Charcoal from Feature 17 firepit. Location: Douglas Creek, DCA (LaPoint et al. 1981).
42Da485	B-35680	Foraging	460 ± 50	1404–1616 A.D.	1490 A.D.	1441 A.D.	Site: Multioccupation base camp with ephemeral. Sample: Charcoal from F4 hearth. Location: Green River, Browns Park (McKibbin 1992).
42Un1103	B-8561	Storage	430 ± 50	1414–1631 A.D.	1520 A.D.	1449 A.D.	Site: Jacal storage structure with maize. Sample: Charcoal from Level 2. Location: Jones Hole, DNM (Liestman 1985).
5Rb2435	B-7199	Sedentary	430 ± 50	1414–1631 A.D.	1520 A.D.	1449 A.D.	Texas Creek Overlook: Masonry structure. Sample: Charcoal from floor of residential structure. Location: Texas Creek, ETP (Creasman and L. Scott 1987).
5Rb3182	B-55304	Semi-sedentary	420 ± 60	1409–1641 A.D.	1530 A.D.	1454 A.D.	Broken Blade Wickiup: Ephemeral structure. Sample: Dispersed charcoal from trash pit. Location: Douglas Creek Arch (S. G. Baker and Sanburg 1993).
5Mf2631	B-52690	Semi-sedentary	420 ± 60	1409–1641 A.D.	1530 A.D.	1454 A.D.	Wickiup Site: Ephemeral structure. Sample: Data not available. Location: Yampa Basin (in A. Reed 1994).
42Un1477	B-13668	Foraging	410 ± 70	1407–1651 A.D.	1540 A.D.	1462 A.D.	Site: Lithic scatter, hearths. Sample: Charcoal from interior of Feature A hearth. Location: Cliff Creek, Uinta Basin (Tucker 1986).
5Rb3182	B-55303	Semi-sedentary	410 ± 50	1424–1638 A.D.	1540 A.D.	1462 A.D.	Broken Blade Wickiup: Ephemeral structure. Sample: Dispersed charcoal from hearth. Location: Douglas Creek Arch (S. G. Baker and Sanburg 1993).
5Mf373	M-285	Storage	400 ±150	1292–1954 A.D.	1550 A.D.	1473 A.D.	Site: Masonry storage structure in rockshelter. Sample: Corncob collected by Wenger (1955). Location: Blue Mountain (Crane and Griffin 1958).

Site No.	Lab. No.	Site Type	C-14 Date BP	2 Sigma Range	Calen. Date	Calib. Date	Comments
42Cb779	B-33338	Artifact	395 ± 70	1412–1655 A.D.	1555 A.D.	1475 A.D.	Site: Slab-lined cists filled with juniper bark. Sample: basketry fragment (AMS date). Location: Nine Mile Canyon, WTP (Spangler 1993b).
5Mf436	UGa-2734	Foraging	375 ± 90	1406–1954 A.D.	1575 A.D.	1485 A.D.	Empire State Site: Multioccupation campsite. Sample: Data not available. Location: Williams Fork, Yampa Basin (in Grady 1984).
CEUA399a	B-61480	Storage	370 ± 90	1407–1954 A.D.	1580 A.D.	1609 A.D.	Site: Cache of bison robes collected privately. Sample: Sinew. Location: Gordon Creek, WTP (P. Miller 1995).
5Rb699	UGa-2426	Foraging	355 ± 65	1434–1665 A.D.	1595 A.D.	1595 A.D.	Dripping Brow: Multioccupation shelter with maize. Sample: Charcoal from Feature 8 firepit. Location: Douglas Creek, DCA (Creasman 1981).
5Mf435	UGa-2732	Foraging	335 ± 65	1439–1953 A.D.	1615 A.D.	1595 A.D.	Duffy Shelter: Multioccupation rockshelter. Sample: Data not available. Location: Milk Creek, Yampa River (in A. Reed 1994).
CEUA399	B-61479	Storage	330 ± 50	1448–1663 A.D.	1620 A.D.	1558 A.D.	Site: Cache of bison robes collected privately. Sample: Bison robe. Location: Gordon Creek, WTP (P. Miller 1995).
42Un1476	B-14464	Foraging	320 ±120	1405–1955 A.D.	1630 A.D.	1537 A.D.	Site: Hearth feature in association with Late Archaic residential structures. Sample: Charcoal from Feature 8. Location: Cliff Creek, Uinta Basin (Tucker 1986).
5Mf2544	B-32350	Foraging	320 ± 60	1446–1954 A.D.	1630 A.D.	1537 A.D.	Site: Base camp with bedrock hearths. Sample: Charcoal from basin hearth. Location: Lay Peak Ridge, Yampa River (Kalasz et al. 1990).
CEUA235	B-61478	Storage	310 ± 60	1448–1954 A.D.	1640 A.D.	1638 A.D.	Site: Cache of bison robes collected privately. Sample: Bison robe. Location: Nine Mile Canyon (P. Miller 1995).
Patterson	B-54291	Storage	300 ± 70	1446–1954 A.D.	1650 A.D.	1641 A.D.	Site: Cache of leather pouches, clothing, Desert side-notched point. Sample: Sinew. Location: Book Cliffs, ETP (Bruce Louthan, pers. comm. 1995).
5Rb3236	B-63154	Semi-sedentary	290 ± 70	1448–1954 A.D.	1660 A.D.	1644 A.D.	Last Hour Wickiup: Brush residential structure. Sample: Charred material. Location: Douglas Creek Arch (S. G. Baker 1995).
5Rb699	UGa-3388	Foraging	265 ± 75	1456–1954 A.D.	1685 A.D.	1652 A.D.	Dripping Brow: Multioccupation shelter. Sample: Charcoal from firepit, Stratum A. Location: Douglas Creek, DCA (LaPoint et al. 1981).
42Cb779	B-33339	Storage	250 ± 60	1486–1954 A.D.	1700 A.D.	1657 A.D.	Site: Subsurface cist located in rockshelter. Sample: Juniper bark. Location: Nine Mile Canyon, WTP (Spangler 1993b).

Site No.	Lab. No.	Site Type	C-14 Date BP	2 Sigma Range	Calen. Date	Calib. Date	Comments
42Da485	B-34681	Foraging	230 ±110	1443–1955 A.D.	1720 A.D.	1663 A.D.	Site: Multioccupation camp with floral/faunal processing. Sample: Charcoal from F4 hearth. Location: Green River, Browns Park (McKibbin 1992).
CEUM860	B-61481	Storage	230 ± 60	1515–1954 A.D.	1720 A.D.	1663 A.D.	Site: Cache of bison robes collected privately. Sample: Bison robe. Location: Nine Mile Canyon, ETP (P. Miller 1995).
5Mf2544	B-32357	Foraging	230 ± 60	1515–1954 A.D.	1720 A.D.	1663 A.D.	Site: Multioccupation base camp with bedrock hearths. Sample: Charcoal from Hearth 9. Location: Lay Peak Ridge, Yampa Basin (Kalasz et al. 1990).
5Mf2544	B-32354	Foraging	150 ± 50	1657–1955 A.D.	1800 A.D.	1809 A.D.	Site: Multioccupation base camp with bedrock hearths. Sample: Charcoal from Hearth 4. Location: Lay Peak Ridge, Yampa Basin (Kalasz et al. 1990).
Patterson	B-54290	Storage	120 ±100	1529–1955 A.D.	1830 A.D.	1840 A.D.	Site: Cache leather pouches, clothing, Desert side-notched point. Sample: Sinew. Location: Book Cliffs, ETP (Bruce Louthan, pers. comm. 1995).

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