

THE COLORADO WICKIUP PROJECT

VOLUME I: CONTEXT, DATA ASSESSMENT AND STRATEGIC PLANNING



COMPLETED FOR
THE COLORADO HISTORICAL SOCIETY
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AND
BUREAU OF LAND MANAGEMENT

DARG Dominquez Archaeological Research Group 

A CONSORTIUM FOR ARCHAEOLOGICAL
RESEARCH, PRESERVATION AND EDUCATION
IN THE UPPER COLORADO RIVER BASIN

**The Colorado Wickiup Project Volume I:
Context, Data Assessment and Strategic Planning**

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Abstract

In 2004 Dominquez Archaeological Research Group, Inc. (DARG) began conducting a comprehensive documentation and information sharing project for all known Protohistoric/Historic aboriginal wooden structures in the state of Colorado. Called the Colorado Wickiup Project, the initial goals of the study were to answer these questions:

- What do we know about wickiups and other aboriginal wooden structures in Colorado?
- What more do we need to learn from these fragile and endangered cultural resources before they disappear?
- How can we best record and preserve the archaeological information and cultural value in such resources?
- How can we maximize the research, preservation and educational value of the information and knowledge we gain?

DARG was awarded a grant in 2004 from the Colorado State Historical Fund (SHF) with matching funds from the Bureau of Land Management (BLM) to begin the first phase of the Colorado Wickiup Project with a focus on context development, data assessment, strategic planning, and field testing a documentation model. This initial phase was conducted from spring 2004 to spring 2005.

Volume I of this report presents the context, data assessment and strategic planning results of the project to date. *Volume II* presents the results of a Class II Cultural Resources Reconnaissance Inventory for the Gunnison Gulch Area of Mesa County, Colorado, conducted as a field test for model documentation practices. *Volume II* includes restricted locational data and is available at Colorado State Historical Society State Historical Fund, Bureau of Land Management Uncompahgre Field Office and Colorado Office of Archaeology and Historic Preservation.

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Project Team and Technical Advisors

The primary project team for context development, data assessment and strategic planning for the initial phase of the Colorado Wickiup Project included: Curtis Martin, Principal Investigator; Richard Ott, Project Supervisor/Information Specialist; Nicole Darnell, Research Assistant/GIS Specialist; and Barbara Davenport, Project Director.

Project team members actively collaborated with archaeologists from Colorado Bureau of Land Management field offices (FO) covering areas of the state with the highest incidence of wickiups and other aboriginal wooden structures. These individuals included: Cheryl Harrison, Glenwood Springs FO; Julie Coleman, Uncompahgre FO; Meghan Murphy and Aline LaForge, Grand Junction FO; Michael Selle, Meeker FO; and Hal Kiesling, Little Snake FO. Additional consultants included Thomas Carr, Staff Archaeologist, Office of the State Archaeologist, OAHP; and Mary Sullivan, Database Administrator/Archaeologist, OAHP.

Informal consultants on the project included independent archaeologists Brian O'Neil, Steven G. Baker, Rand Greubel, and Carol Patterson; Bill Kight, Archaeologist, White River National Forest; Sally Crum, Archaeologist, Grand Mesa, Uncompahgre & Gunnison National Forest; and Patricia C. Holcomb, Technical Advisor, Colorado Preservation, Inc.

Initial contact was made with members of the Southern Ute Tribe, the Ute Mountain Ute Tribe, and the Northern Ute Tribe during the first phase of the project to explore approaches for on-going collaboration and information sharing in future phases of the Colorado Wickiup Project.

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The authors gratefully acknowledge the valuable advice, encouragement, and inspiration provided by Carl Conner, President, DARG; Patricia C. Holcomb, Technical Advisor, Colorado Preservation, Inc.; Cheryl Harrison, BLM Glenwood Springs FO; and Julie Coleman, BLM Uncompahgre FO.

We wish also to respectfully acknowledge the work of archaeologist Steven G. Baker, whose passionate and decades-long study of Ute archaeology helped to create awareness of the importance of wickiups in the archaeological record; and archaeologist Joanne M. Sanfilippo, whose pioneering study of Ute wickiups (1998) provided a valuable foundation for the collection and assessment of wickiup data in the existing archaeological record.

Project Background

Wickiups were once commonplace in Colorado, particularly throughout the western slope. Most of these wooden structures were associated with Ute culture and are widely thought to be the only surviving aboriginal architecture of Colorado's living indigenous people. Recognized for their cultural and historic value, many are considered eligible for the National and State Registers of Historic Places. The Duck Creek Wickiup Village site (5RB53) in Rio Blanco County was listed on the NRHP in 1975. Unfortunately, these perishable structures are rapidly disappearing from the landscape due to the effects of natural weathering, wildfires and human impact. They face certain decay, disintegration and disappearance.

Prior to the current study, the only major review of wickiup data in Colorado was completed by Joanne M. Sanfilippo in 1998. She identified records in the Colorado Office of Archaeology and Historic Preservation (OAHP) Site Files for 430 conical wooden structures from 132 sites in the state. Forty-two additional sites encompassing at least 50 structures were identified from other sources. Regrettably, as noted by Sanfilippo, wide variations in completeness, standards of recording, and other qualitative factors significantly and adversely impact the reliability of the data. Specific, detailed data on the structures themselves was especially lacking. Nevertheless, Sanfilippo's overview showed the scale and significance of aboriginal wooden structures in Colorado's archaeological record. It also made clear the urgent need for focused action to fully document these important archaeological resources before they are lost to study forever.

Fortunately, momentum toward the realization of such a comprehensive documentation effort emerged in the archaeological and historic preservation communities. In 2003, through the efforts of archaeologist Stephen Baker and Patricia Holcomb of Colorado Preservation, Inc. (CPI), Native American wickiup structures and sites were listed on CPI's *Colorado's Most Endangered Places List*. Consequent statewide press coverage (*Denver Post*, July 9, 2003) stimulated general public interest in wickiups, and subsequent anecdotal reports revealed potential, unrecorded wickiup sites, including one possibly undisturbed village site.

In the fall of 2003, Dominquez Archaeological Research Group (DARG) began an archaeological assessment of site 5GF308, the Rifle Wickiup Village, in Garfield County, Colorado. The project, initiated at the request of the Bureau of Land Management, Glenwood Springs Field Office (Cheryl Harrison, Archaeologist), was funded by an Archaeological Assessment Grant from the Colorado Historical Society State Historical Fund (Project # 2004-AS-004).

During work on the Rifle Wickiup Village assessment, yet another example was revealed of the need for a comprehensive, systematic and long-range program of intensive documentation of aboriginal wooden structures in Colorado. The site contains at least 80 wickiups and other wooden structures, and is among the largest wickiup sites in Colorado. It was first recorded and minimally documented in 1973. During subsequent years — notably in 1982, 1986 and 1996 — additional site surveys were conducted and several wickiups were tested and/or excavated. In 1985, the site was adversely impacted by an illegal woodcutting operation that destroyed several wickiups. Documentation efforts throughout this period produced a varied assemblage of maps,

photographs, field notes, collected artifacts, specimen records, and other information. Unfortunately, data from these studies were never formally reported, and the documentation remained dispersed in several repositories. Until the completion of DARG's archaeological assessment of the site, the cursory site inventory record completed in 1973 was the only documentation available to the archaeological community in BLM and OAHF site files. Clearly, in this case and perhaps in many others, valuable archaeological data on wickiups, though extant, lay beyond the reach of researchers, resource managers, and preservationists.

With awareness of these factors, DARG initiated the Colorado Wickiup Project in spring 2004, supported by funding from SHF and BLM. This report presents results from the first phase of the project with a focus on archaeological context, data assessment, strategic planning, and development of model documentation practices for aboriginal wooden structures.

Part 1: An Archaeological Context for Colorado Wickiups

by Curtis Martin, Principal Investigator

Introduction

Temporary conical and domed shelters and other brush and wooden structures have been constructed for millennia by the aboriginal inhabitants of the Colorado River Basin, just as they have throughout the world. Based on the premise that in all temperate and harsh-weather regions of the world shelters were highly desirable, even necessary for human survival, it is likely that a significant percentage of prehistoric campsites in Colorado included temporary shelters.

However, because of their inherently ephemeral material construction, most of Colorado's prehistoric aboriginal wooden structures have vanished from the landscape. Only a comparatively small number of Colorado's aboriginal wooden architecture may date from prehistoric times — and most likely among those found in sheltered contexts such as overhangs.

Consequently, most of the known temporary aboriginal wooden structures in Colorado were constructed during the past two to three hundred years, or less. This period may be generally described, and contextually understood, as the Protohistoric Era.

It must be noted, however, that many of the wooden structure types of interest to this study continued to be constructed by native people into the early historic and reservation periods — even to the present day in some cases. Indeed, ethnographic descriptions, illustrations, and photographs of early historic aboriginal wooden structures have significantly contributed to our understanding and interpretation of similar, albeit earlier, architectural forms.

The Protohistoric Era: A Definition

The task of defining the Protohistoric Era in Colorado is not a simple one. Conceptual approaches to Protohistoric definitions vary from one researcher to another. A specific definition may readily apply in one cultural area, yet may be ill-suited or inapplicable in another area of the state. Distinct factors in different geographic areas may have effected the chronology of changes used to define the beginning and end of the era. In some regions of the state, internal changes within the indigenous cultures themselves delimit the Protohistoric period, unrelated to European contacts that had taken place, or were soon to take place. In other areas, the occurrence of European contact was the key influence that defines the beginning and end of the Protohistoric Era.

Webster's Dictionary defines the prefix "proto-" as meaning "first", "foremost", or "earliest form of". It necessarily follows, therefore, that "protohistoric" must refer generally to cultures and events present during the foremost or earliest times of the historic contact period in a region – occurring after the prehistoric but prior to the truly "historic" period when written and illustrative descriptions of human behavior and lifestyles were being recorded.

It is beyond the scope of this context to attempt to synthesize a definition of the Protohistoric Era that may apply to Colorado as a whole. Instead, a summary is presented below of the various regional approaches that have been applied to the cultural history of the state, as presented in the *Prehistory of Colorado* series published in 1999 by the Colorado Council of Professional Archaeologists (CCPA).

Colorado Prehistory: A Context for the Southern Colorado River Basin (Lipe, Varien, and Wilshusen 1999) — Contributing authors Wilshusen and Towner refer to this era as the "Post-Puebloan period" in reference to the extreme southwestern corner of the state, the homeland of the Ancestral Puebloan (Anasazi), and the later Athapaskan, Navajo and Ute cultures. They describe the period as dating from the time of the last Pueblo migration from the area in approximately AD1300 to the year AD1840. No reason is given by the authors for their choice of this particular date for defining the end of the Post-Puebloan period, however, it presumably represents the time of the earliest permanent Euro-American settlements in the area and/or the removal of the Native inhabitants to reservations.

Colorado Prehistory: A Context for the Rio Grande Basin (Martorano, Hoefler, Jodry, Spero, and Taylor 1999) — This reference quotes Guthrie et al (1984:7) in defining the Protohistoric stage as "a Post Formative Archaic Stage" but goes on to say that "because there was probably no true Formative stage in the Rio Grande Basin, this definition is not particularly relevant for this area." The authors recommend a "more appropriate definition...that would be indicative of the end of the Late Prehistoric stage and the beginning of Spanish contact and influences." They suggest that, archaeologically, the Protohistoric stage is typically characterized by Euro-American trade goods, small side-notched, corner-notched, and unnotched projectile points used with the bow and arrow; wickiups, culturally peeled trees, Uncompahgre Brown Ware ceramics, and rock art exhibiting horses and riders. The Utes were the primary occupants of the area at contact, and presumably during the Protohistoric as well. Also documented in the region were the Apache,

Navajo, and Comanche, although no archaeological sites have been specifically assigned to these groups (Martorano et al 1999:139).

Colorado Prehistory: A Context for the Arkansas River Basin (Zier and Kalasz 1999:250) — The authors define the Protohistoric Period as “the final period of the Late Prehistoric stage...assigned a temporal range extending from AD1350/1450 to AD1725. Previously, the definition of the Protohistoric period has involved subjective measures of European and aboriginal interaction, i.e., the temporal range...between the initial contact [with the] Spanish...and the onset of regular interaction among them (Lintz and Anderson 1989:27). For the Arkansas River Basin, it is believed more appropriate to describe the onset of the...period via the possibly overlapping dates associated with Apishapa phase abandonment and the arrival of Athapaskan groups.” The authors’ choice of AD1725 as the terminus of the Protohistoric coincides with the withdrawal of various Apachean/Athapaskan bands from southeastern Colorado and an increase in Spanish and Comanche incursions. Protohistorically and historically, the drainage basin of the Arkansas, as well as the Platte River dealt with below, was occupied by the Apaches, Comanches, Kiowas, Cheyennes, and Arapahoes (Crum 1996:98).

Colorado Prehistory: A Context for the Platte River Basin (Gilmore, Tate, Chenault, Clark, McBride, Wood 1999) — Co-author Clark (p. 309), in discussing the period of culture history from AD1540-1860 in relation to the northeastern quarter of Colorado, states “we are in agreement with those who use the term Late Ceramic rather than Protohistoric (Nelson et al. 1997 and Stone 1997) because of concerns that the period not be defined by what is about to occur. Until permanent settlement by Euroamericans [the Historic period], the material culture evident in the region was affected by but not superceded by European expansion. Rather, a continuation of indigenous cultures is seen with both a long continuity with the past and often ingenious use of new resources.”

Nonetheless, the author’s use the term Protohistoric to follow the conventions of a majority of the regional research in discussing the period that “begins with European contact and ends with the period of permanent settlement by literate peoples.” They stress that initial contacts need not be person-to-person but can be manifested by the presence of trade goods, as in those arriving as a result of Coronado’s entry into the general area in 1540. Clark defines the end of the era by the first significant and sustained written records concomitant with permanent settlement by literate peoples; specifically the discovery of gold at the confluence of the Platte River and Cherry Creek in 1858.

Colorado Prehistory: A Context for the Northern Colorado River Basin (Reed and Metcalf 1999) — These authors offer perhaps the most relevant definition of Protohistory for the Colorado Wickiup study because of the high incidence of sites containing aboriginal wooden structures that exist within this geographic area. Reed and Metcalf (1999, p.146) define the Protohistoric era in terms of the “aboriginal occupation of western Colorado between the end of horticultural-based subsistence practices of the Formative era and the final expulsion of the Ute to reservations in AD1881.” They acknowledge that the establishment of a beginning date for the era is somewhat problematic in that the Anasazi migrated to areas that are now in New Mexico and Arizona by AD1300, approximately at the same time that the archaeological record of the Gateway tradition peoples to the north becomes undefinable. The Fremont tradition, however,

“began to contract geographically at approximately AD1250, but evidently endured until approximately AD1500 in areas peripheral to the Fremont homeland, such as in northwestern Colorado.”

Reed and Metcalf use AD1300 (or AD1100; see below) as the beginning date for the era because of the lack of evidence for horticultural lifeways between that date and AD1500 and the evidence of the immigration of a new hunting and gathering group — the Utes — at or shortly before that date (Reed 1994). The Utes remained, by far, the primary occupants of the area until their expulsion by Euroamericans, however the Shoshone possibly were present in the extreme northwestern corner of the state and Comanches may have inhabited portions of the Great Basin or Rocky Mountains.

Reed and Metcalf propose dividing the Protohistoric Era into two phases — the Canella and the Antero. The Canella phase begins at about AD1100 when Uncompahgre Brown Ware ceramics appear along with arrow points of the Desert Side-notched and Cottonwood Triangular types. Wickiups and other brush structures were often utilized. Toward the end of the Canella Phase European trade goods may appear in limited quantities. The Antero phase dates from about AD1650 to 1881 and represents the shift to a fully equestrian lifestyle and the addition of Euro-American trade goods such as glass beads, metal cone tinklers, guns and cartridges, tin cans, and horse tack. Desert Side-notched and Cottonwood Triangular projectile points continue in use, but were increasingly replaced by metal projectile points and firearms. Uncompahgre Brown Ware continued to be manufactured.

Baker (2005), presents a more complex model in which the Protohistoric and Historic occupation of the Eastern Ute is divided into five phases: Phase I — the Late Precontact Canella Phase (up to AD1540), Phase II — the Early Contact Rivera Phase (1540 to 1820), Phase III — the Middle Contact Robideau Phase (1820 to 1860), Phase IV — the Late Contact Pre-Removal Pre-1881 Chief Ouray, Chief Douglas, and Chief Ignacio Phases (1860 to 1881), and the Post-Removal Fort Duschene Phase (1881 to 1900). Each phase is defined by a series of cultural attributes and archaeological “hallmarks” reflecting the changing physical, economic, and social life of the Utes during this period.

Although Baker admits that application of his taxonomy must be tailored to various areas of the Eastern Utes’ occupation range, Reed and Metcalf feel that Ute sites cannot be dated precisely enough to allow for meaningful implementation of the system in archaeological contexts. This author has similar reservations in that, although many of the items on Baker’s archaeological trait lists provide what appear to be valid diagnostic artifacts, many others could be found on sites that span two or more of the proposed phases, especially those that cover only 20 to 40 years. It would be rare to have a site yield a large enough inventory of datable materials to assign specific chronological placement within the system. Another specific problem that this author has with the taxonomy is with the Early Contact Phase that covers from AD1540 to AD1820. This period spans the time from when there were no horses or trade goods whatsoever among the Utes, to a time when they had large herds of horses, a well-established iron and steel technology, and a reputation for being “experienced mounted warriors and traders (Simmons 2000). Acquisition of the horse as a mount and beast of burden, with the radical change in lifestyle and all of the associated material culture that comes along with these animals,

should surely qualify as one of the major defining hallmarks for defining a major phase in Ute culture history. Simmons (ibid.) refers to the earliest documented evidence of horses among the Ute as being those that were stolen in Santa Fe in 1640. She mentions that “many” horses were in Eastern Ute lands by 1700, and they were commonplace by 1821.

O’Neil et al (2004) feel that, given the present state of the Protohistoric Era knowledge base, the archaeological record is best divided into pre- and post-contact phases or periods, as Buckles (1971) and O’Neil (1993) have done. These two periods reflect important differences in both aboriginal lifeways and the material constituents of archaeological sites.

The Protohistoric Ute

There is considerable debate as to whether ethnic groups can be detected in the archaeological record, as well as to the distinction between ethnicity and culture (Sanfilippo 1998:4 and Stiger 1998:1). Nevertheless, early historical records in the American west, and in the state of Colorado in particular, provide us with insights into the ethnic affiliations and cultural relationships of the native peoples inhabiting the area at the times of earliest contact with non-native intruders. These chronicles, and their descriptions of the material culture of the inhabitants, often present a valid framework from which to derive the ethnic association of those archaeological sites that can be dated to protohistoric and historic times within specific geographic regions.

Although a succession of tribes inhabited the eastern plains of Colorado ethnographically (see Figure 1, Appendix B), the Utes occupied the mountains and western portion of the state for more than 500 years. As a result, a vast majority of the sites and structures included in the Colorado Wickiup Project have been attributed to Ute origin and occupation. Consequently, an overview of Ute cultural history, and the artifacts that are considered diagnostic of Ute, or Numic, occupation in the archaeological record, is presented below.

The Utes, distant relatives of the Shoshones and speakers of the Uto-Aztecan language group, were the first of the historically recognized tribes or cultural groups to live in Colorado. After centuries of migrating eastward from what is now California, Utah, and possibly northern Mexico, they arrived in the area approximately 500 to 800 years ago (Crum 1996:128). They traditionally followed a hunting and gathering life style, supplemented by limited horticulture, living in extended family groups and relying on a wide variety of game animals and wild plant foods. They appear to have employed a forager strategy with a relatively high residential mobility, following a seasonal movement across annual territories as various food resources came into fruition.

The Colorado Utes enjoyed economic advantages compared to native people in drier regions to the west. They had a greater abundance and wider variety of food resources, and lived in environments that could more easily support a horse culture when these animals became available during Protohistoric times. The winter months, when the snow depths were unmanageable in the higher regions, were spent at lower elevations, most likely in deer and elk winter ranges, where there were trees available for fuel and shelter. In the spring lowland riparian habitats along major rivers were exploited, and, as the temperatures rose and the snow

melted, groups would disperse to the high country, timing their ascent to efficiently exploit maturing food resources. Since summers were times of plenty, populations that were relatively dispersed during the winter would often aggregate for ceremonial activities, trade, and communal hunts. Occupation of the highlands continued into the fall, until snows began to drive game animals, and their hunters, back to the lower elevations. During the fall, berries, seeds, and other late-maturing resources were exploited and, along with animal products, were prepared for winter storage. Among some groups of Utes small plots of corn, beans, and squash were planted in the spring and then left untended in hopes of a harvest upon their return in the fall.

The Utes were divided into a number of groups or bands, as described by Crum (1996:138-139):

At one time there were twelve or more bands of Utes scattered throughout Colorado, Utah, and northern New Mexico; historic accounts usually mention five or six major bands. The Mouache band ranged along the eastern slope of the Rockies, the San Luis Valley, and south almost to Santa Fe, New Mexico. They shared the San Luis Valley with the Kapote band, which hunted and foraged in the extreme northern and central part of New Mexico, down to the areas near the present-day towns of Chama and Tierra Amarilla. The Weenuche occupied southwestern Colorado, northwestern New Mexico, the canyon country of southeastern Utah, and the area surrounding present-day Mesa Verde National Park. The Mouaches and Kapotes are [now] called the Southern Utes; the Weenuches are the Ute Mountain Utes.

The largest of the bands lived in west-central Colorado along the Gunnison and Uncompahgre river valleys. These were the Tabeguache (Taviwatch) or Uncompahgre Utes. North of them the Parianuc (Parusanuch), or Grand Valley Utes, lived along the Colorado River. The Yampa River Valley was home to the Yampa band, which also occupied North and Middle parks. When the White River Agency was established in Meeker, the Grand Valley and Yampa bands came to be known as the White River Utes. In the Uintah Basin near today's Dinosaur National Monument in northeastern Utah and northwestern Colorado, [were] the Uintah Utes. The Tabeguache, White River, and Uintah bands together are [now] known as the Northern Utes.

The Utes were thought to have obtained horses almost 30 years before any of the other tribes (Crum 1996:139). As early as 1640 they were known to be raiding Spanish ranches in order to obtain the "magic dogs" and by about 1650 they had obtained enough horses to adopt an equestrian lifeway. The presence of these animals in their culture greatly expanded the Utes' range, hunting capabilities, and prowess as raiders of other tribes. It permitted the expansion of annual territories and increased cultural contacts with other groups, particularly the inhabitants of the Great Plains and the Pueblos and Spanish to the south.

Archaeologically the Utes are characterized by small arrow points — Desert Side-notched and unnotched Cottonwood Triangular points, Shoshonean knives, Uncompahgre Brown Ware ceramics, rock art that often portrayed horses and riders, culturally modified trees, and wickiups or brush shelters. Later Protohistoric Era components often contain small quantities of Euro-

American artifacts obtained in trade such as the glass beads, metal tinklers, firearms, food cans, and horse tack mentioned above, as well as metal arrow points, knives, needles, axes, cooking pots, and other goods. As of the establishment of Fort Roubideau near Delta at around 1830, Euroamerican trade goods became more common at Ute sites (Reed and Gebauer 2004).

The year 1881 is commonly listed for the “final expulsion” of the Ute peoples from western Colorado to the reservations. However, it is known (Stewart, unpublished comments at the Symposium of the Archaeology of the Eastern Ute, Grand Junction, Colorado, 1988) that numerous Ute individuals and families remained in western Colorado and eastern Utah, off reservation, after this date. Utes are known to have been counted in the census records of various communities (for example Collbran, Colorado) in the area as late as the 1920s, and still living in wickiups. Such off-reservation, post-1881 occupations are referred to herein as “refugee Ute”. Not only did some Utes not succumb to their removal to reservation lands in the first place, but also the visitation to non-reservation lands by reservation Utes after 1881 is well-documented (Mehls 1988 and Simmons 2000).

Protohistoric Settlement Patterns

Protohistoric sites are found throughout the state. Ute sites, and wickiups in particular — which comprise a significant majority of the resources in this study’s database — are dispersed across a wide range of elevation zones. They are, nevertheless, generally found in the traditional Ute homeland comprising the mountains and the western plateau/canyon country of the state (see Figure 2, Appendix B). A variety of factors have no doubt contributed to the significantly higher density and overall number of wickiups in the pinyon/juniper ecotone when compared to the pine/fir/spruce/aspen zones. This may be in part due to the fact that archaeological sites in general are more numerous in these mid-level elevations. Also, the inhabitants tended to winter here during the months when the construction of shelters was more imperative. Another contributing factor may be simply that juniper pole wickiups have remained on the landscape longer due to a combination of the wood’s natural resistance to decay (recognized historically by fence-post reliant cattle ranchers), and the drier, less inclement, conditions prevalent in the pinyon/juniper forest compared to those at higher elevations. Reed and Metcalf (1999:153) suggest that another factor in this discrepancy may be unequal cultural resource inventory coverage.

A subtle shift in settlement patterns and subsistence strategies has been indicated in the archaeological record at the end of the Archaic, and beginning of the Protohistoric Era. It is suggested that later, Protohistoric, peoples followed a “forager” and seasonal transhumance subsistence strategy with a relatively high residential mobility compared to their earlier counterparts who employed a “collector” strategy (Reed and Metcalf 1999, Binford 1980, Dial 1999, and Baker 1993). Archaic pit house sites such as Yarmony and Kewclaw — discussed earlier in this report — are examples of long-term, presumably winter habitations to which foodstuffs would be brought from widespread procurement sites. The less labor intensive makeshift Protohistoric shelters (wickiups), on the other hand, suggest a seasonally-dictated residential mobility with the family groupings moving from one locale and elevation zone to another, following the migrating game animals and ripening berries, seeds, and roots.

During the winter months, when snows were deep at the higher elevations, the people were widely dispersed into extended family groups and followed the deer and elk herds to lower ranges. The pinyon/juniper forests (roughly between the elevations of 5000 and 6500 feet) appear to have been particularly attractive for winter habitation. In the spring the riparian habitats in the river bottoms were exploited and larger groups, or bands, would aggregate. Then, as summer arrived, the groups would again disperse, only now to the higher elevations, to continue to exploit the game herds and maturing floral resources, until fall when they would return to the pinyon/juniper ecotone.

Sanfilippo's (1998:366-368) Colorado wickiup studies have shown that the highest frequency (35%) of wickiups occurs between 6234-6561 feet in elevation. 75% of wickiup sites have a permanent water source within 2.2 kilometers, and 99% are on elevated locations, presumably to maximize or minimize breezes, to avoid cold air drainage patterns in the river valleys and canyon bottoms, and to provide visibility for viewing the movements of game and people. All of Sanfilippo's wickiup sites occurred on slopes of 30 degrees or less, with 76% on slopes of eight degrees or less. As might be expected — presumably to maximize the warmth of the sun and for purposes of shelter from prevailing weather — site aspects or orientations range in all directions other than north.

Preliminary analysis in our current study of Colorado Wickiup sites (excluding sites that lack relevant documentation) shows that approximately 81% of all wickiup sites in the state occur between the elevations of 5000 and 8000 feet; primarily in the pinyon/juniper forest habitat (see Table 1, p. 11).

A Prehistoric and Protohistoric Perspective on Aboriginal Wooden Structures

As noted above, a majority of the sites so far included in the Colorado Wickiup Project database date to the Protohistoric Era. Nevertheless, evidence exists from a number of archaeological excavations in Colorado, and elsewhere, that habitations and shelters utilizing integrated wooden superstructures in their construction have been manufactured for thousands of years.

The remains of apparent house structures at both the Paleoindian-age Mountaineer site (5GN2477) near Gunnison (Stiger 2005: personal communication) and at the Early Archaic house structures at the Yarmony Pit House site in Eagle County provide early examples. The Mountaineer site, which is still under investigation, has produced burnt daub with post impressions associated with an apparent house floor, Folsom projectile points, and radiocarbon dates in the 10,400 BP range. The Yarmony site produced two pit houses with fragments of burnt and stick-impressed daub, apparent postholes, and radiocarbon dates of just prior to 6000 BP (Metcalf and Black 1991).

A third, and incontrovertible, example is the Late Archaic pithouse at the Kewclaw site near the town of Parachute on the Colorado River (Conner and Langdon 1987) where a series of eight post holes from within and on the perimeter of the house floor, and a large central post hole, indicate the use of a conical wooden superstructure. The hearth from the Kewclaw pithouse produced dates of 2900 and 2770 BP. Additionally, the shallow basin floors of 27 Archaic age

ELEVATION ZONE	# OF SITES	# OF WICKIUPS	# OF OTHER WOODEN STRUCTURES	TOTAL # OF STRUCTURES	VEGETATION ON SITES	POLE WOOD TYPES
<4900'	0	0	---	---	---	---
4900'-6000'	31	69	4	73	P/J (28) Big sage (1) Shadscale (1) Unknown (1)	Juniper
6001'-7000'	112	345	23+	368+	P/J	Juniper and pinyon
7001'-8000'	26	54	5	59	P/J (20) Ponderosa (3) Fir/spruce (1) Mixed conifer (1) Aspen (1)	Juniper, pinyon, and aspen
8001'-9000'	31	51	1	52	P/J (1) Ponderosa (9) Fir/spruce (3) Mixed conifer (9) Aspen (4) Lodgepole (2) Gambel oak (1) Big sage (1) Unknown (1)	Aspen, ponderosa, juniper, lodgepole, and fir/spruce
9001'-10,000'	7	59 (52 on one site)	1	60	Fir/spruce (1) Mixed conifer (3) Aspen (1) Lodgepole (2)	Aspen (incl. site of 52), and lodgepole
>10,000'	0	0	---	---	---	---
TOTALS	207	578	34+	612+	P/J (161) Conifer/aspen (40) Other (6)	---

Table 1: Selected Colorado Wickiup Sites by Elevation

temporary brush shelters were discovered during the Rocky Mountain Expansion Loop Pipeline project in Colorado, Utah, and New Mexico (Cassells 2003).

Although a large majority of the sites described in the current study are wickiups, all forms of wood and brush architecture are of interest in terms of the construction and future development of a database of perishable, wooden archaeological features of aboriginal origin. Early historic and ethnographic records of then-living native peoples, the photographs and illustrations that accompany them, and the archaeological documentation of the abandoned habitations and camp sites in the times since, provide us with data from which to formulate definitions and descriptions of wickiups and other forms of ephemeral architecture and perishable features, as found within the western United States.

A comprehensive list of such definitions, as compiled from the existing literature and from the personal experience of the authors, follows below:

A Working Glossary of Protohistoric Wooden Structures

Wickiups: The word wickiup is derived from the Proto-Algonquian word “wigwam”. The Ute word for house, home, or wickiup however, is “kunnee” (Sanfilippo 1998:19). Wickiups consisted of wooden and brush shelters of two basic styles (Huscher and Huscher 1939:13, 92-93, and Scott 1988:45); either free-standing or leaning on the branches and trunks of standing trees (“lean-to wickiups” or “leaners”). They were typically conical but also occurred as informally-constructed makeshift shelters. Domed framework shelters and non-conical lean-tos are categorized separately (see definitions below).

Wickiups were constructed of typically narrow poles which may or may not have been de-limbed or peeled, occasionally incorporating a forked-stick framework. Other wickiups involved an expedient “pull-down-branch” construction where branches of a living tree are partially torn from the tree trunk and bent downwards to the ground surface to form a rude framework. Doorways were informal openings facing generally south or east (Sanfilippo 1998:411). Wickiups frequently incorporated brush or bark coverings, in addition to the existing boughs of un-limbed poles. Hide, canvas, or other coverings were sometimes employed, with or without formal smoke holes. They may or may not have had internal or external activity areas and hearths (internal hearths being more common in free-standing wickiups) and occasionally had support stones at the base of the poles as support or as weights for coverings. Reed and Metcalf (1999:160) state that most free-standing wickiups measured from 3 to 4.5 meters in diameter and stood approximately 2 meters high.

Sanfilippo (1998: Appendix F), has summarized “typical” Ute residential sites in Colorado. Her description, based upon data from 132 wickiup sites containing 430 conical wooden structures primarily found between the elevations of 1550 and 3025 meters (5085 to 9925 feet), has been summarized by Lipe et al (1999:362) as follows:

These sites typically contained one to six wickiups. Wickiups usually consisted of three to 22 poles in a conical arrangement and served as the interior support

for a perishable (e.g., bark) or portable (e.g., animal skins) exterior covering. Living conifer trees, or even boulders, were commonly incorporated into the structures. Features are not common at wickiup sites, those found are usually hearths or charcoal concentrations. Limited areas of scattered domestic trash occur, with the most common artifacts being flaked lithic debris, milling stone fragment, and faunal remains. There are very few sherds. It is not common to find sweat lodges at prehistoric [sic] Ute residential sites.

Historically wickiups are well documented as the primary architectural feature of the Utes of western Colorado and the mountains, although they should not be considered clear cultural markers (Gilmore et al 1999:323 and Scott 1988). Kidwell (1969) cites ethnographic evidence of wickiup construction by other cultural groups including the Apache and Shoshone. Photographs of Shoshone conical shelters in Nevada and Idaho are presented in Trenholm and Carley (1964) and the Bustos Wickiup Site in eastern Nevada is “presumably” of Shoshone origin (Simms 1989:2). Butler (2004) states that a number of informants have “firmly stated” that the Arapaho did not make wickiups, preferring instead skin-covered tipis. Kidwell (1969), though, points out that the term “wickiup” was used to define shelters built by many tribes including the Ute, Paiute, Shoshone, and Apache.

Although a great majority of the wickiups in the database are in the western portion of the state and are constructed of juniper poles (see Plate 1, Appendix A), conical structures made from aspen poles have also been recorded at higher elevations in the mountains (see Plate 2, Appendix A), often leaning against lodgepole pine support trees (Gilmore et al 1999:325-236) or freestanding (Martorano et al 1999:142).

Scott (1988) describes the free-standing style of wickiup as structures composed of 8 to 20 cut or merely gathered poles of uneven size and length which were stood up to form a cone with the pole butts resting on, or pushed slightly into, the ground surface. Occasionally stones were placed on the ground partially or completely ringing the exterior of the pole butts either to support the poles or to act as weights for the coverings which were made of brush, boughs, hides, or any combination of those. The wickiups varied in size from one to over six meters in diameter, with the smaller structures typically exhibiting less formalized construction methods. Some structures had unprepared dirt floors while others had a prepared juniper bark mat floor covering, or simply had juniper bark scattered over the floor.

Smith (1974:34-37) provides greater detail describing the style-range of the free-standing wickiups (“brush shelters”) of the Northern Utes. The foundation structure of these shelters was composed of four poles tied together at the top with additional poles then added to complete a conical framework. The number of poles used varied with the size of the structure. Three horizontal “strips” or cross braces were tied to the framework to stabilize the structure and to provide additional support for attachment of the covering. The covering material varied, depending upon the local environment and availability at the time of construction. These shelters were commonly made of untrimmed juniper branches. The branches, or poles, were leaned upon the frame, and covered with juniper brush. Juniper bark was placed both horizontally and vertically among the branches of the cover, both on the interior and exterior to act as chinking against the elements. Doorway placement was variable and often on the leeward

side of the structure, although an eastern orientation was preferred. Doorways could be left open, although coverings were also used. The size of these structures was determined by the length of time it was to be occupied, and presumably, by the number of occupants. If it was to be used for only a few days the structure was small and expediently constructed. A winter shelter, or “brush lodge”, however, was larger and of more meticulous construction. These larger, more formal wickiups have been recorded up to 15 feet in diameter and 10 to 15 feet in height; large enough to accommodate 10 or 12 people. The builders often left an opening at the top as a smoke hole when a central hearth was employed. Floor coverings and bedding of juniper bark, cattails, sagebrush, skin blankets, and hides have been recorded.

There are references in the literature to “ceremonial” or “medicine” wickiups (San Filippo, 1998, pp. 47, 334). Native informants have referred to beliefs that certain conical brush shelters can be identifiable as ritual sites, however it remains unclear as to how to distinguish these sites archaeologically from purely utilitarian shelters. Additionally, as described below, conical structures have also been identified ethnographically as menstrual huts, pet shelters, and sweatlodges.

Wickiups, in smaller numbers, continued to be constructed by Utes into historic “Reservation Period” times, and continue to be made throughout the western states even today — possibly more by non-natives as part of wilderness survival schools and Boy Scout exercises than by Native Americans themselves. A “rigorous” course in wickiup construction, for example, is offered by the Boulder School in Utah as being representative of the native shelter of the Southern Paiute. One of the students described the shelter they built: “the simple design is amazingly stable in high winds, easy to heat with an inside campfire, and easy to maintain from year to year” (Carmichael 2003).

Domed shelters: Although unknown in the archaeological record (Reed and Metcalf 1999:160), and similar to domed sweatlodges in construction, bent willow frame houses have been reportedly built and used by the Weeminuche band of Utes (Callaway et al 1986:348) and others. Smith (1974:Plate 23) shows a photo of an historic Ute tipi with a domed framework nearby that is identified as a menstrual hut. According to Callaway these structures measured approximately 4.6 meters in diameter and 2.5 meters in height, and were constructed of limber willow or sapling boughs. The butts of the boughs were stuck into the ground in a circular arrangement, bent inward, and lashed together with opposing boughs to create a dome-shaped frame that could be covered with brush, canvas, or hide.

Although no superstructures of domed shelters exist in Colorado’s archaeological database, a number of features have been excavated that appear to represent the floors of houses that had been originally covered by domed structures. The house floors at the Sandshadow and New Sites (5RB2958 and 5RB3060) in Rio Blanco County fit into this category (Baker 1995) and a feature was recorded on an early Pueblo I Ancestral Puebloan (Anasazi) site in the southwestern portion of the state (5LP245) that consisted of two concentric circles of upright slabs, one inside the other, and leaning inwards at approximately a 30° angle. A series of post holes between the rows of slabs appeared to indicate that the feature had served as a foundation for a substantial domed shelter that may have stood more than two meters high. The exact cultural affiliation of the feature remains unclear (Chuijka 2005).

Tipis: Tipis consisted of freestanding, conical pole frameworks covered with sewn bison, or occasionally elk hides, and, later canvas. Although smaller “hide tents” existed in the Great Plains prior to the introduction of the horse, the classic, formal shelters — larger in size than wickiups — became common in the plains upon the arrival of the horse. Tipis made of tanned buffalo hide, and later canvas, drawn over poles (see Plate 3, Appendix A) were used universally by the Plains cultures (Gilmore et al 1999:314). In Colorado this included the Apaches, Comanches, Kiowas, Kiowa-Apaches, Cheyennes, and Arapahoes. The Shoshone of extreme northwestern Colorado are also known to have adopted the tipi (Trenholm and Carley 1964).

Tipi poles typically consisted of long, straight, peeled trunks of lodgepole pine, fir, cedar, tamarack, etc. Descriptions of historic tipis mention as few as “six or eight” poles (Laubin and Laubin 1957:9) however most utilized 15 to 18 for the lodge frame and two more for the smoke flaps (idid:27). The poles typically ranged from 15 to 30 feet in length and included a three or four-pole foundation, tied at the top, onto which the remainder of the poles were leaned. Earlier hunting lodges averaged about 12 feet in diameter, however more permanent dwellings were significantly larger. Doorways nearly always faced to the east. The smoke from central hearths existed via smoke flaps at the top of the covering which were typically controlled by the two additional exterior poles. One of the primary reasons for there being less Protohistoric tipis left in the archaeological record is that it was significantly more labor intensive to secure and prepare the poles and coverings and, with the aid of dogs and horses, they were dismantled and carried with the people when they moved camp, as opposed to the more expeditious wickiups that were quickly assembled and left behind.

The Utes also began to use tipis, in addition to the smaller wickiups, following their acquisition of horses as beasts of burden, after approximately AD1650. Smith (1974) describes the typical Ute tipis as having a foundation of four poles and a framework of eight to 20 poles, coverings of sewn elk or bison hides, and central interior hearths. Other descriptions of Ute tipis mention a three-pole foundation (Pettit 1982:22) Wickiups continued to be used by the Utes long after acquiring tipis, however; “thatched dwellings” and “brush shelters” are described in the literature as late as 1888 and even at a Ute Sun Dance in 1936 (ibid.:34).

Menstrual huts: Similar in construction to both conical brush wickiups (Baker 1996) and domed willow shelters (Smith 1974), they are often difficult or impossible to definitively identify as menstrual huts archaeologically. Smith (ibid) reports that the Utes constructed domed willow huts specifically for the temporary shelter of menstruating women on a monthly basis. Reed and Metcalf (1999:161) state that no undisputed menstrual huts have been identified in the archaeological record, however Baker (1996) contends that many of the structures on Ute sites that have been recorded as wickiups are, indeed, shelters for the isolation of women during their menstrual cycle. Smith (1974:146) notes that in the Uintah Band of the Utes, the winter menstrual hut was made of two forked juniper poles interlocked together at the top, the intervening spaces filled in with other cedars with the foliage left on, and the inside lined with cedar boughs laced together to keep out the cold.

Although Baker (1996 and 2003) presents a strong argument for the presence of menstrual huts on some Ute encampments, O’Neil et al (2004:60) argue that his proposed methodology for

demonstrating that some of the smaller, two meter in diameter, structures may have served as menstrual huts is inadequate in terms of making accurate determinations of this specialized function for specific features. They refer to Smith's (1974:147) description of menstrual huts measuring from eight to 12 feet in diameter among the Northern Ute.

Hogans: Traditionally, and very distinctively, of Navajo design and construction, forked-stick hogans were usually free-standing structures and were typically constructed of bulky, de-limbed, often peeled or adze-finished poles or branches (see Plate 4, Appendix A). They were usually constructed on an interlocked forked-stick tripod, with a supplementary framework of poles and an earth covering with a smokehole. They typically had a three to four meter diameter, a southeast-to-northeast facing rectangular doorway flanked with upright forked posts that supported a lintel, and that sometimes extended beyond the overall circular outline of the structure (adapted from Sanfilippo 1998:410). Lipe et al (1999: 356,363) report that forked-stick hogans in northwestern New Mexico had been archaeologically dated to the period of AD1541 to 1679, although they are well documented in more recent times as well.

Hogans differ from Ute wickiups in that they were constructed of heavier timbers, were significantly larger, had an earthen covering, and sometimes a log-covered tunnel entryway. They also had an excavated shallow basin, polygon-shaped floor area (Lipe et al 1999:363). Navajos also built cribbed-log structures and "many-legged" hogans (Towner, Sesler, and Hovezak, n.d.).

Forked-stick sweatlodges: These were also affiliated with the Navajo culture (both early and contemporary) and similar in overall construction to forked-stick hogans although smaller in size and typically lacking the extended, rectangular doorway. Usually free-standing, typically constructed of de-limbed, poles or branches. Constructed on an interlocked forked-stick tripod with a supplementary framework of usually lighter weight poles and typically with a bark or earth covering. Usually with a southeast-to-northeast facing entryway, a hearth or heating stones outside of the entrance, and an interior depression or pit for containing the hot stones for steam production.

Lipe et al (1999:361-362) state that there is a distinct possibility for the existence of Ute-affiliated sweatlodges, however, they point out that additional archaeological research is needed in order to distinguish them from the better documented Navajo features, even in areas far removed from traditional Navajo homelands. Copeland, for example, (personal communication 2005) mentions that Navajo uranium miners were constructing sweatlodges in the Uravan area of the Uncompahgre Plateau in the mid-Twentieth Century. The current authors recorded a classic forked-stick sweatlodge (site 5OR1497) significantly to the north of the traditional Navajo cultural area on the Uncompahgre Plateau 20 kilometers to the south of Montrose (see Plate 5, Appendix A), but postulated a Navajo affiliation to the site none-the-less, based purely on the design of the feature. Reed and Metcalf (1999:46) mention that an additional four "conical" sweatlodges are identified in the Office of Archaeology and Historic Preservation (OAHP) database for the Northern Colorado River Basin area of western Colorado, but state that such structures do not appear to be evident prehistorically in this area. The possibility exists that the construction style was mimicked by protohistoric or historic Utes, or even Euro-Americans. Sweatlodge (or "nasa-kani") use has been reported ethnographically among the Northern Utes,

however Smith (1974:43-45) describes them as dome-shaped, bent willow frame structures (see below) as opposed to conical forked-stick features.

Domed sweatlodges: Similar or identical in terms of construction technique to domed bent willow shelters (see description above), however typically with exterior hearths or heating stones and interior depressions or pits for containing the hot stones for steam production (see Plate 6, Appendix A). Smith (1974:43-45) and Reed and Metcalf (1999:360,362) describe domed sweatlodges among the Ute. Although “uncommon”, the latter authors define them as measuring approximately 2.7 meters in diameter and 1.5 meters high. Callaway et al (1986) describe other sweatlodges that were similar in construction to conical wickiups. Domed sweatlodges continue to be manufactured by Native Americans as well as non-natives throughout the continent.

Lean-tos and windbreaks: Lean-tos, as defined herein, are distinct from “leaners” or “lean-to wickiups” as described above, in that lean-tos are usually, though not always, one sided structures. Typically a lean-to, often only large enough to sleep one or two persons, consisted of a series of branches or brush that has been leaned along one side of a low horizontal tree branch, artificial wooden framework, or rock face. Two-sided lean-tos do exist, forming a linear, non-conical, “tent”-shaped or ridge-roofed structure. Sometimes windbreaks consisted of simple brush walls or fences that were open on one side providing a modicum of protection from the weather.

The current authors recorded a unique structure in Delta County that consisted of a southeast-facing lean-to constructed of approximately 70 to 75 Gambel oak (and possibly some serviceberry) branches leaned against the northwestern side of a long ridge pole made of a Gambel oak trunk (Site 5DT1538). A conical pole structure, or wickiup was incorporated into the southwestern end of the lean-to that consisted of nine poles including two forked-stick support poles (see Plate 7, Appendix A). No portable artifacts or other features were found on the site and it was therefore difficult to speculate on the age of the structure. The condition of the poles and the stability of the lean-to suggested that it was of historic construction, however the possibility exists that the structure is an unusual adaptation of a Protohistoric Ute wickiup (Martin 2004a).

Lean-tos, more than probably any other shelter type discussed in this report with the possible exception of the tipi and the ramada, lasted as a form of expedient shelter into historic and modern times, and, as a result, it is often difficult to assign temporal and cultural affiliation to when found archaeologically. Many lean-tos in Colorado have been attributed to the early sheep and cattle ranching eras.

Hide processing poles, meat drying racks, and “pot tripods”: Smith (1974:80-81) notes that single poles leaned into trees were often used as fleshing or drying poles for deer hides. The water-soaked hides were hung with the head end over the pole, inserting a stick into a fold at the bottom of the hide, and twisting the stick to wring out the water. Other suggested uses for single or paired-poles in trees — vertical leaners or horizontal — include meat drying racks, simple sunshades, temporary storage platforms, or perhaps even frameworks for menstrual huts (see description above). Many single and two-pole “leaners” are recorded in the state’s database as the remains of wickiups, however to the authors’ knowledge, there is presently no archaeological

data available regarding the other uses for these single and double-pole structural features. Smith (ibid: Plates 10 and 11) also presents historic photographs of large, substantial meat drying racks with conical pole frames. Also in the literature are references to cooking tripods, or “pot tripods”, that served to suspend cooking pots and kettles over open fire hearths (Terry and Gilchrist 1988).

Tree platforms and ramadas: Although rare in archaeological contexts, non-conical platforms utilizing flat, horizontal framework “roofs” supported by vertically-set posts and/or the branches of living trees do exist. Typically construction of these features was more labor intensive than a conical structure, and often less stable, which is possibly an additional factor regarding their scarcity archaeologically. These had a variety of purposes ethnographically including sleeping and burial platforms, hunting scaffolds, storage platforms, and sun shades/dance circles. Depending on which of the above purposes was intended for the structure, the size of the feature varied greatly, as did the construction technique, roofing material, presence or lack of side walls, and so forth.

Smith (1974) describes rectangular historic Ute summer shades and ramadas with flat roofs covered with brush, and similar structures can still be found providing shelter for Navajo vendors at tourist locations throughout the Southwest (see Plate 8, Appendix A). Reed and Metcalf (1999:161) state that no ramadas have been documented in prehistoric contexts (based in part by the “insubstantial nature” of such structures), however the current author recorded a Protohistoric Ute camp site in Delta County, 5DT222, that included a partially collapsed ramada constructed against the face of a sandstone outcrop. The shelter utilized a large horizontal support beam that originally had one end resting on a rock cairn built atop the rock outcrop and the other end apparently supported in the branches of a still-living juniper tree. Six additional juniper beams were laid perpendicularly across the main beam with the opposite ends resting on the top of the rock outcrop. Three (as yet undated) hearths and Uncompahgre Brown Ware sherds were found in and adjacent to the shelter indicating its use as a habitation. The projectile points from the site’s surface indicate Formative and Protohistoric occupations (Martin 1977 and Conner et al 2002).

Sleeping, burial, and storage platforms and tree-platform hunting scaffolds or blinds were similar in construction, although typically high off the ground compared to shelter roofs, and occur in the branches of trees or as free-standing structures (see Plate 9, Appendix A). Hunting scaffolds were predictably built within living trees above game trails. Dance ramadas, such as used for the Sun Dances of the Plains and Shoshone tribes, were typically full or semicircular and large in size in order to afford shelter to numerous spectators. Photographs of a large, Northern Ute, Sun Dance “corral” are presented in Smith (1974: Plate 30) that consists of a central support post and circular arrangement of secondary vertical posts around the perimeter connected by a series of horizontal poles that create a flattened-conical roof.

Animal control features: Wooden and brush features were constructed and used both prehistorically, in the form of game drives and traps (often in association), and in post-contact times in the form of corrals, pens, and drift fences for the control of horses and other livestock. Usually these features were fabricated from piles of brush and cut or uprooted trees and branches, often incorporating the trunks of standing trees into the construction for support.

Some, however, are more formally constructed fences of stacked or coursed horizontal poles. These control features range from fences and drive lines several miles in length to small pens only large enough to contain a newborn lamb. Terry and Gilchrist (1988:217) provide a photograph of one of three log-cribbed pit “antelope traps” near Saguache, Colorado. Another historic photograph taken in South Dakota in 1891 (Robotham 1994:67) shows a young Lakota girl and her puppy in front of her family’s tipi. A child-sized, blanket-covered, tipi (wickiup) stands nearby, presumably as a playhouse or, most likely, as a shelter for the dog.

As with lean-tos and windbreaks, it is often difficult to determine the cultural or temporal affiliation of these features, and often the overall condition of the wood itself is the only guide for judging the age of a structure. The inherent problems of obtaining accurate radiometric and dendrochronological dates from Protohistoric wood is discussed in the Field and Laboratory Methods section of this chapter.

Another unique type of artifactual feature from the ethnographic and archaeological record that sometimes incorporated wood into its construction was the eagle trap; live eagles being prized for their feathers by the aboriginal inhabitants. Crum (1996:135-136) describes Ute traps as consisting of pits covered with willow branches. Other traps recorded in the database consist of stone enclosures that presumably also had originally involved brush coverings in order to conceal the eagle hunters within. Crum (ibid) depicts the technique of using the traps: the hunter would crouch beneath the brush covering inside of the pit or enclosure, bait the trap with meat placed atop the roof, and grab the eagle by the legs when it landed to eat.

Naturally sheltered sites: As discussed above, archaeologically occupied natural overhangs and rockshelters provide ideal localities for the long-term preservation of perishable materials such as wood. Although sheltered sites in the southwestern portion of the state that were occupied by the Ancestral Puebloans (Anasazi) contain a wide variety of preserved wooden features such as roofs and door lintels on stone masonry structures, wattle-and-daub walls, turkey pens, and so forth, wooden structures within overhangs are quite rare throughout the remainder of Colorado. These consist primarily of wing walls, or dividers, made of brush or tree branches laid on the surface of the shelter floors as partitions between separate living or activity areas.

A wickiup within an overhang was, however, recorded on site 5MN2629 on the Uncompahgre Plateau and site 5RB3238 (“Brian’s House”) in Rio Blanco County consists of a collapsed wickiup within a small overhang that the recorders consider “the most pristine example of an historic wickiup the authors have ever seen”. An estimated ninety-eight percent of the interior floor materials of the structure are present, including what appears to be a juniper bark mat (O’Neil and Baker 1992:50).

Because the Puebloan features are more commonplace than the other more exposed structures dealt with in this analysis and, by their nature, better protected and less endangered, they are not of concern here. However, the rare, more ephemeral, wooden constructions on sheltered sites affiliated to the hunting and gathering cultures of the state are.

Culturally modified trees: Crum (1996:136) references Northern Ute informant Clifford Duncan in describing the ethnographic activity of peeling slabs of bark from ponderosa pine trees in

order to obtain the inner bark, or cambium, as a foodstuff. Ponderosas were apparently “the favorite [species of tree] for utilization” (Gilmore et al 1999:332), however other species such as cottonwood, fir, and larch have reportedly been peeled for their bark (Martorano et al 1999:155). The sap from aspen trees was also considered a delicacy by the Utes and was collected in bark or wooden containers via a hollow bone inserted into a 10"-long cut made in the tree bark (Smith 1974:66-67). The scars on culturally peeled trees are commonly around 1.5 meters long by 60 to 90 centimeters in width, frequently exhibiting cut marks on one edge, often the lower margin (Martorano 1988) (see Plate 10, Appendix A), although significantly smaller scars are also reported (Gilmore et al 1999:332). The repeated use of certain stands of trees appears to have been a normal practice (ibid) and, as a result, it is commonplace to find sites consisting of several associated peeled trees.

Duncan also mentions that the inner bark was utilized in flavoring meat and as a medicine for stomach disorders and a list of other ailments. The tree sap was used as an adhesive and as a water-proofing substance for baskets (Gilmore et al 1999:323). The outer bark of trees was also used as a building material for basketry, trays, and cradleboards (Martorano 1988, Martorano et al 1999, and Blackburn 2005). Historic and ethnographic accounts are common regarding Ute collection of bark resulting in “peeled” or “scarred” tree trunks (ibid), to the point that, archaeologically, the phenomenon is typically attributed to Utes. “Bark utilization was a well-established cultural pattern among Utes, and was practiced over centuries” (Gilmore et al 1999:323). Reputedly, the only other group in the region that is documented ethnographically to have used bark is the Shoshone (ibid:324).

Archaeologically, culturally peeled trees present a unique problem in that a majority of field workers are either not trained to recognize them when encountered, or tend to overlook them. Cultural tree scars are frequently mistaken for porcupine or lightning scars or vice versa, and, indeed, it is sometimes difficult or impossible to differentiate between the three. Similar tree scars have been recorded within pinyon/juniper forests, however, due to the above mentioned problems, it is sometimes difficult, without obvious axe scars, to assign them a cultural origin. A number of “stripped” juniper trees were recorded at the Schmidt and Simpson wickiup sites on the Uncompahgre Plateau (Reed and Gebauer 2004:101, 103) and on the Coyote Skull and Brush Corral sites (Martin 2004b), and numerous uses for the outer bark of juniper trees are well documented in the literature, from kindling and sleeping mats, to cordage and basketry, to wickiup coverings. In addition to large “peel” scars, the authors of this report have recorded steel-axe marks on juniper trees in wickiup village sites, and others that exhibit series of circular cut marks nine to 68 centimeters apart around the circumferences of trunks and branches that apparently represent scars from Protohistoric bark collecting. Towner, Sesler, and Havezak (n.d.:197) report that “there is no evidence, neither archaeological nor ethnographic, that ... junipers were used as ... food resources, as were the peeled ponderosas.”

Culturally modified trees, especially junipers, are reported on Navajo sites as a result of removing wood to construct various structures, as described above, as well as for a variety of artifacts including tablitas, dance paddles, digging sticks, cradle boards, saddles, and bows and arrows (Towner, Sesler, and Hovezak, n.d.).

A Regional Perspective on Known Sites in Colorado with Aboriginal Wooden Structures

The Plateau & Canyon Country. As noted above, a significant majority of the ephemeral aboriginal wooden structures that have been documented in Colorado are found in the western quarter of the state; the province of mesas and plateaus, steep-walled canyons, and the pinyon-juniper forest habitat. Of the 278 sites identified to date by the Colorado Wickiup Project (including sites with other wooden structures besides conical residences), 211 are situated in this physiographic domain.

The Rocky Mountains. Outside of the plateau and canyon country, the majority of the remaining aboriginal wooden structures in Colorado exist in the mountain province and the associated high mountain parks. To date, 58 such sites have been identified in this physiographic domain, a majority of which consist of aspen pole wickiups.

The Four Corners Area. In addition to the wooden components of Ancestral Puebloan (Anasazi) affiliated masonry structures, 9 sites containing aboriginal wooden features have been recorded in the Southern Colorado River drainage region in the extreme southwestern corner of Colorado, in Montezuma, La Plata, and Archuleta counties.

The Great Plains. Although, as discussed earlier, it is well documented that tipis were common among the plains peoples after the introduction of the horse, and that smaller “hide tents” had been made prior to their introduction, there are no known extant examples of aboriginal wooden structures in this physiographic province. The nearest occurring examples are three wickiups in the pinyon-juniper habitat of the foothills of extreme northwestern Pueblo County, two single-wickiup sites in the lodgepole pine forests of Boulder County, and a series of aspen-pole structures in Rocky Mountain National Park, Larimer County.

Recent Colorado Wickiup Studies

Ute Wickiups or Navajo Forked-Stick Hogans: Determining Ethnicity Through Architecture in the Archaeological Record; Sanfilippo, 1998: In her master’s thesis from Northern Arizona University, Sanfilippo compiled the first comprehensive inventory of aboriginal wooden structures in Colorado, identifying records in OAHP Site Files for 430 conical wooden structures from 132 sites in the state, and 42 sites encompassing at least 50 structures identified from other sources. Her data revealed wide variations in completeness, standards of recording, and other qualitative factors which significantly and adversely impacted its reliability. Specific, detailed data on the structures themselves was especially lacking. Nevertheless, Sanfilippo's pioneer work provided a valuable foundation and benchmark for the Colorado Wickiup Project's collection and assessment of wickiup data in the existing archaeological record. Many of the variables utilized by Sanfilippo in her wickiup study were codified into a "Conical Wooden Structure Component Form" introduced to the Colorado archaeological community in the late 1990s. This multi-page field-recording form was subsequently used in the survey of several wickiup sites. It was later refined and condensed into a two-page "Aboriginal Wooden Structure Component Form" form by O'Neil (2004) and Martin (2004), discussed below (Part 4: Goals and Objectives — Improved Recording Standards).

Archaeological Assessment of the Rifle Wickiup Village — 5GF308 in Garfield County, Colorado; O'Neil et al, 2004: This study was a seminal influence on the Colorado Wickiup Project with respect to the need for improving standards for the capture and conservation of archaeological data from aboriginal wooden structures in Colorado. As noted above (Project Background), the site was originally recorded in 1973 and has experienced a long history of archaeological investigations including several excavations. The Rifle Wickiup Village assessment sought to integrate and synthesize all previous site records and to bring the documentation of individual structures and the site as a whole up to current recording standards, as described elsewhere in this report (Part 4: Goals and Objectives — Improved Recording Standards). The project utilized the "Aboriginal Wooden Structure Component Form" mentioned above, and recorded/re-recorded a total of 80 wooden structures and pole features. Comprehensive mapping of the site was conducted using current GPS-GIS instruments and techniques.

The Colorado Wickiup Project Volume II: Cultural Resources Class II Reconnaissance Inventory for the Gunnison Gulch Area of Mesa County, Colorado; Martin et al, 2005: This report comprises the data from the field work conducted as part of the initial phase of the Colorado Wickiup Project. It contains sensitive locational data and is accordingly not publicly available. Pertinent highlights are described here:

The Gunnison Gulch Reconnaissance Survey was conducted by a crew consisting of Dominquez Archaeological Research Group (DARG) personnel and Bureau of Land Management (BLM) employees. The project area was situated in pinyon/juniper forest habitat at an elevation of approximately 6800 feet, in a small valley on the Uncompahgre Plateau. Field work for the project was targeted on previously-known wickiups, but several new sites and numerous new structures were found and also recorded. The project utilized the "Aboriginal Wooden Structure Component Form", mentioned above, and collected data on two wickiup villages, a number of isolated wickiups and pairs of wickiups, and additional isolated wooden pole features consisting of one or two poles leaning on standing trees. Other recorded wooden features included a brush corral, an apparent windbreak, a culturally scarred juniper, a limbed tree (apparent wickiup pole production site), a juniper pole cache, and several two-pole and single-pole features that may have served as hide processing or meat drying racks. Wooden features were extensively photographed and sketch maps of structures were drawn. Other recorded features included a petroglyph panel and associated rock shelter, and a possible Protohistoric crevice burial site.

A selection of forms completed during this survey are presented below (Appendix C) including: a "Colorado Cultural Resource Survey Management Data Form", a "Prehistoric Archaeological Component Form", and an "Aboriginal Wooden Structure Component Form". Further discussion of recording techniques used during this survey follows below (see Part 4: Goals and Objectives — Improved Recording Standards).

An Annotated Bibliography of Notable Wickiup Studies

A compendium of notable publications and project reports dealing with wickiups, other forms of Protohistoric wooden structures, and/or Numic/Ute archaeology and ethnology. In general, a majority of these are projects that have succeeded, in one or more aspects, in establishing or setting the standards for the documentation and/or analysis of Protohistoric ephemeral wooden structures, primarily Ute wickiups, and primarily in Colorado. Others have been included in this list because of the uniqueness or exceptional preservation of the structure or structures themselves, and others yet because of their uncommon treatment archaeologically. Several of the studies include excavation data and two deal with wooden structures that have actually been collected *en masse* and moved to curatorial facilities for their preservation or display — the Elk Track War Lodge (Martorano et al 1999) and 5GF519 a hunting blind tree scaffold (Gooding 1981).

Baker, Steven G.

- 1987 *Ephemeral Archaeology on the Mountain of the Sorrel Deer*. Colorado State Office, Bureau of Land Management, Denver.

Excavations at the Roatcap Game Trail site (5DT271) provided evidence of a now-vanished historic Ute wickiup and an earlier Formative Stage brush structure based upon artifact distribution and assemblages, hearths, and activity areas. This excavation, and that at the Broken Blade Wickiup Village described below (Baker 1996), are examples of the valuable information that can still exist archaeologically even at the of sites of long-vanished ephemeral structures such as wickiups.

- 1996 *Numic Archaeology on the Douglas Creek Arch, Rio Blanco County, Colorado: Ute Rancherias and The Broken Blade Wickiup Village (5RB3182)*. Chandler Douglas Arch Series Report No. 80. Centuries Research, Inc., Montrose, Colorado.

Similar to Baker's work at the Roatcap Game Trail site described above (Baker 1987), this report includes the description of an excavation at the Broken Blade Wickiup Village, the site of an apparent wickiup — represented by a faint charcoal and ash stain surrounding a hearth. Recovered diagnostic artifacts included Desert Side-notched projectile points and Uncompahgre Brown Ware sherds. The hearth was dated between AD1040 and 1410, however the investigators estimate an occupation date of AD1730 to 1850 to account for the use of old wood for fuel.

- 2003 *Historic Ute Archaeology: Interpreting the Last Hour Wickiup (5RB3236)* *Southwestern Lore* 69 (4). Colorado Archaeological Society, Denver.

The article summarizes the archaeological investigations, including test excavations, at the site of a single wickiup consisting of two poles leaning onto the branch of a live juniper and another fallen pole. Glass seed beads and a ceramic button suggest an early historic, post-1839 date for the site. A detailed summary is also presented regarding the author's hypothesis that a significant percentage of the conical wooden structures found on Ute sites are menstrual huts rather than primary family shelters. It is hypothesized that the Last Hour Wickiup is, indeed, the remains of a menstrual hut.

Buckles, William G.

1971 *The Uncompahgre Complex: Historic Ute Archaeology and Prehistoric Archaeology on the Uncompahgre Plateau in West Central Colorado*. Ph.D. dissertation, Department of Anthropology, University of Colorado. University Microfilms, Ann Arbor.

This dissertation continues to serve as one of the most important and oft-referenced treatises on the archaeology of west central Colorado, particularly in terms of the correlation of Archaic-age projectile points with dated archaeological components. The data is based on 17 rock art sites and excavations at 39 other sites on the eastern portion of the Uncompahgre Plateau. Ute Uncompahgre Brown Ware was initially defined as a ceramic type and excellent descriptions and scale drawings of wickiups are included — the Lee Ranch Wickiup Village (5MN41), the Monitor Mesa Wickiups (5MN42 and 5MN65), and the Monitor Creek Wickiup (5MN44). Wickiup site excavation findings are also presented.

Butler, William H.

2004 An Experimental Wickiup. *Southwestern Lore* 70 (1).

“An experimental wickiup was constructed in order to gain insights on construction time and effort, comfort, capacity, and other intangibles not present or easily revealed from the archeological record.” A crew of seven constructed a shelter of 80 dead aspen poles covered with pine boughs in about half an hour with no special tools. It was estimated that two to three persons could gather such raw materials in about an hour. The structure (somewhat larger than the average archaeological wickiup) had a floor space of approximately seven square meters and easily held six people. A summary of the Protohistoric wickiups found in Rocky Mountain National Park is also included — all made of aspen poles.

Conner, Carl E.

1988 Archaeological Investigations at 5EA433. In *Archaeology of the Eastern Ute: A Symposium*, edited by Paul R. Nickens, pp. 190-205. CCPA Occasional Papers No. 1. Colorado Council of Professional Archaeologists, Denver.

A wickiup village consisting of at least eight shelters is described including leaners, possible collapsed free-standing structures, and pull-down branch shelters. Juniper bark mats, a metal tinkler, and a glass trade bead are among the artifacts recovered from the site. It is possible that the site originally contained additional wickiups that were destroyed by the construction of nearby highway I-70.

Conner, Carl E. and Barbara J. Davenport

2000 *Report of the Evaluative Test Excavations at Site 5RB451 in Rio Blanco County, Colorado*. Ms. on file, Grand River Institute, Grand Junction, Colorado.

Utilizing surface examinations, metal detection, and excavation, the researchers investigated 11 hearth features and associated artifacts. Three of these areas were determined to be disturbed Historic Ute wickiup localities. Radiocarbon analysis of hearth charcoal was inconclusive except to indicate occupation within the last 500 years. Artifacts included three glass trade beads, two flints for flint-lock rifles, two metal tinklers, two spent rifle balls, and seven pieces of cut metal suggesting a Late Ute occupation of ca. AD1840 to 1875.

Gooding, John

1981 *5GF519 Hunting Blind*. Unpublished field notes on file at the State of Colorado Department of Transportation, Denver, and the Denver Museum of Nature and Science.

These notes describe a tree platform constructed of juniper poles among the branches of a living juniper near DeBeque, Colorado. The entire structure, including the 20'-tall living tree in which it was constructed, was dismantled and collected in 1981 and moved to Denver Museum of Nature and Science (DNMS) for preservation and potential exhibition. Each of the 15 platform poles were measured and the junctures or points of contact of each pole with each other or the tree branches was marked and mapped prior to disassembly. After removal of the platform the tree was sawed off near ground level and collected as well (Gooding 2005: personal communication). Numerous photographs and drawings were made to aid in the accurate reconstruction of the feature should such an opportunity arise. A note in the site files at CDOT mentions that, although the poles are apparently still in storage, the tree was "inadvertently discarded" several years ago at the DMNS (OD Hand 2005: personal communication).

Greubel, Rand A.

2001a Variability and Uniformity in Ute Domestic Architecture (Or, How I Learned to Stop Worrying and Love the Wickiup). Paper presented at the 2001 Colorado Council of Professional Archaeologists Annual Meeting, La Junta, Colorado, 3/3/01.

Greubel, Rand A.

- 2005 Strategies and Methodologies for Investigating Wickiup Sites. Paper presented at the 2005 Colorado Council of Professional Archaeologists Annual Meeting, Grand Junction, Colorado, 3/5/05.

Drawing on the existing knowledge of wickiups and his personal experience, the author reviews patterns in brush shelter architecture and site layout. Speculations regarding the effect of seasonality, duration of occupation, environmental setting, and so forth on the options that were selected by the architects of individual structures are discussed. It is Greubel's opinion that wickiup spatial patterning within sites and within environmental situations appear to be less variable than the architecture itself, and, consequently, that for purposes of pattern recognition, interpretations of these structures must be contextual; taking into consideration numerous aspects of topography, vegetation, other cultural features and activity areas, etc.

He concludes that, "if it is true that Ute wickiups were less restricted by architectural conventions related to social, religious, or symbolic issues than were, for example, Navajo hogans, Lakota tipis, and Anasazi kivas, then they may have been more responsive to purely environmental, economic, or ergonomic factors, Wickiup sites, therefore, may provide excellent laboratories for examining issues related to use of the environment, seasonality, subsistence strategies, and technology."

- 2001b Investigations at the Simpson Wickiup Site (5SM2425). Vol. 4, Chapter 22, In *The Trans Colorado Natural Gas Pipeline Archaeological Data Recovery Project, Western Colorado and Northwestern New Mexico*. Alpine Archaeological Consultants, Inc., Montrose, Colorado.

Greubel, Rand A. and John D. Cater

- 2001 Investigations at the Schmidt Site (5MN4253). Vol. 3, Chapter 21, In *The Trans Colorado Natural Gas Pipeline Archaeological Data Recovery Project, Western Colorado and Northwestern New Mexico*. Alpine Archaeological Consultants, Inc., Montrose, Colorado.

As reviewed by Reed and Gebaur (2004:100-101): "As would be expected, the most recent investigations tend to produce the quality of data that best conform to current expectations. Two of the recently investigated sites, the Schmidt site (5MN4253) and the Simpson Wickiup site (5SM2425) yielded abundant archaeological data. Because these two sites had standing or collapsed but discernible wickiups, as well as numerous pit features and artifacts, these two sites were extensively investigated. The excavation of large blocks at these two

sites permitted analysis of site structure and better discernment of the association of site materials. Specimens for radiocarbon, macrobotanical, archaeofaunal, palynological, and thermoluminescence dating were liberally collected and processed. These two sites have contributed greatly to our understanding of the region's Protohistoric archaeology.”

Huscher, Betty Holmes, and Harold A. Huscher

1939 *Field Notes for 1939*. Ms on file, Department of Anthropology, Denver Museum of Nature and Science, Denver.

Some of the most valuable observations from the field work performed in western Colorado in the late 1930s and early 1940s by the Huschers was never published. Of particular concern here is their documentation of Ute wickiups, tree platforms, and animal traps (see Terry and Gilchrist 1988 below) that appear primarily in copies of their 1939 field notes. Many of these structures have undoubtedly deteriorated or disappeared in the time since their recording.

Martin, Curtis, Carl E. Conner, and Nicole Darnel

2005 *The Colorado Wickiup Project Volume II: Cultural Resources Class II Reconnaissance Inventory for the Gunnison Gulch Area of Mesa County, Colorado* .

As part of the current project, a work in progress, the researchers have completed the documentation of wickiup villages, isolated wickiups and pairs of wickiups, a brush corral, an apparent windbreak, a culturally scarred juniper, a limbed tree (apparent wickiup pole production source), a juniper pole cache, and two-pole and single-pole features that most likely served as hide-processing or meat-drying racks, utilizing the current aboriginal wooden structure component form (Appendix C). A description of this report is presented above in “Recent Wickiup Studies”.

Nickens, Paul R. (editor)

1988 *Archaeology of the Eastern Ute: A Symposium*. Colorado Council of Professional Archaeologists Occasional Papers No. 1., Denver.

Nickens organized and directed a symposium at the 1988 annual meetings of the Colorado Council of Professional Archaeologists as a “tentative step” toward synthesizing the existing knowledge regarding Ute archaeology in the state of Colorado. This publication is the result of the 12 papers that were presented at that symposium that range in subject matter from Ute cultural chronology and historic culture change, to mortuary practices and Euroamerican trade goods, to culturally peeled trees, rock art, and wickiup documentation. Three of the essays are of particular interest to the Colorado Wickiup Project, and are reviewed

elsewhere in this bibliography: Conner's "Archaeological Investigations at 5EA433", Scott's "Conical Timbered Lodges in Colorado or Wickiups in the Woods", and Terry and Gilchrist's "The Huscher Photographs of Colorado Ute Sites."

Office of Archaeology and Historic Preservation

- 1978 *Site form for site 5SH242, The Elk Track War Lodge*. Unpublished form on file at the Office of Archaeology and Historic Preservation (OAHP), Denver.

This site form, from 1976, describes in detail the site of the aspen-pole wickiup that was later collected by the Colorado Historical Museum and that is now displayed as an interpretive exhibit at the Ute Indian Museum in Montrose, Colorado. A photograph of the shelter taken in 1939-1941 by the Huschers can be found in Terry and Gilchrist (1988:213), reviewed elsewhere in this bibliography, and a more recent, 1976, photograph and analysis of the site is presented in Martorano et al (1999:141-142).

O'Neil, Brian, Carl E. Conner, Barbara J. Davenport, and Richard Ott

- 2004 *Archaeological Assessment of the Rifle Wickiup Village — 5GF308 in Garfield County, Colorado*. Dominquez Archaeological Research Group, Grand Junction, Colorado. Ms on file at the Glenwood Springs BLM Field Office.

Relevant information from the Rifle Wickiup Village assessment on field recording techniques and methodology are discussed elsewhere in this report (see Part 4: Goals and Objectives).

Sanfilippo, Joanne

- 1998 *Ute Wikiups or Navajo Forked-Stick Hogans: Determining Ethnicity Through Architecture in the Archaeological Record*. Unpublished Master's thesis, Department of Anthropology, Northern Arizona University, Flagstaff. Ms on file at Bureau of Land Management, GSFO.

A detailed description of this report is presented in the "State of the Art Wickiup Studies" section above.

Scott, Douglas D.

- 1988 Conical Timbered Lodges in Colorado or Wickiups in the Woods. In *Archaeology of the Eastern Ute: A Symposium*, edited by Paul R. Nickens, pp 45-53. CCPA Occasional Papers No. 1, Colorado Council of Professional Archaeologists, Denver.

Scott reviews the geographic distribution, topographic settings, and construction variables for the known wickiup sites in Colorado (at that time). Data from 171+ wickiups at 61 sites are utilized, and associated features such as tree platforms, brush structures, and culturally scarred trees are discussed. Site patterning, dating, management considerations, and recommendations for future research are also dealt with.

Simms, Steven R.

1989 The Structure of the Bustos Wickiup Site, Eastern Nevada. *Journal of California and Great Basin Anthropology* 11 (1), pp. 2-34.

Describes an “ethnoarchaeological experiment” excavation of a site consisting of five semi-erect wickiups and an associated lithic, tool, and ceramic scatter. Seven stone rings were also present on the site that were interpreted as pine nut storage features. Stumps remained where the site’s inhabitants had used fire and stone axes to cut logs for the structures. The relationship between the artifact/refuse scatters and the residential structures is examined and comparisons to ethnographic examples from elsewhere in the world are made.

Smith, Anne M.

1974 *Ethnography of the Northern Utes*. Papers in Anthropology No. 17. Museum of New Mexico Press, Albuquerque.

This monograph, based on field work that was accomplished via a grant from the Graduate School of Anthropology at Yale University in 1936 and 1937, provides an ethnography of the Northern Utes. The information draws principally on information supplied by a number of Ute informants, some of whose memories dated back into the pre-reservation days of the late Nineteenth Century. Both material culture and social organization are described, and one section is dedicated to the design, construction, and use of shelters. Descriptions and photographs of “brush shelters” (wickiups), tipis, sweat lodges, menstrual huts, ramadas or “shades”, and conical meat drying racks are presented.

Terry, Reed T., and Cynthia Wood Gilchrist

1988 The Huscher Photographs of Colorado Ute Sites. In *Archaeology of the Eastern Ute: A Symposium*, edited by Paul R. Nickens, pp 45-53. CCPA Occasional Papers No. 1, Colorado Council of Professional Archaeologists, Denver. Between 1939 and 1941 Harold and Betty Huscher recorded over 60 archaeological sites in western Colorado, including several Protohistoric and Historic Ute sites (see Huscher and Huscher 1939 above). They described and photographed 21 wickiup sites, a four-post sunshade (historic), 11 tree platforms, five game traps, one hunting blind, travois poles, “squaw wood” piles, and pot tripods — many of which have probably disappeared or deteriorated since these photographs were taken. A map showing the general locations of the sites is presented, and included in the report is the original photograph of the Elk Track War Lodge wickiup (see OAH 1978 above).

Part 2: Data Assessment

A primary goal of the initial phase of the Colorado Wickiup Project was to compile existing records of aboriginal wooden structures in the state in order to evaluate the known extent of these archaeological resources, as well as the completeness and reliability of the documentation describing them. The results of this effort are described below:

Quantitative Parameters

Data Sources

Most of the data compiled for this study came from the Colorado Office of Archaeology and Historic Preservation (OAHP) and Smithsonian site numbers are used as the key identifier for all collected data. With the assistance of OAHP information management staff, a comprehensive search was conducted of the main Site.Files database using a variety of spellings for the keyword "wickiup" as well as related keywords, such as "brush shelter", "wooden structure", etc. This database search was completed in May, 2004, at which time the OAHP database contained over 130,000 cultural resource forms. The complete hard copy records for sites identified in the search were pulled from the files and photocopied for on-going reference in the development of a data set for the current wickiup study.

Additionally, various Bureau of Land Management, USDA Forest Service, National Park Service, Colorado Department of Transportation, and cultural resource consultant offices were queried — in person, by phone or by email — regarding any in-process site forms, reports, or anecdotal reports in their files containing information related to aboriginal wooden structures in the state. A number of site records which were not yet entered in the OAHP database were identified in this process and added to the Colorado Wickiup Project data set.

Further, in the course of the literature review conducted for this study, a search was made for references to sites with wickiups and aboriginal wooden structures that may have not been identified during the OAHP and field office files searches.

Data Compilation Strategy

The foremost data analysis goal for the initial phase of the Colorado Wickiup Project was to compile a data set to a level of detail that would: a) provide a descriptive inventory of all known archaeological sites in the state containing aboriginal wooden structures, and b) enable assessment of the character of those structures, as well as the quality and completeness of the documentation in the records.

To this end, all collected site records were parsed for the categorical information listed in Table 2 (p. 31), and the resulting data was then compiled in a simple (spread sheet) flat file.

Table 2: List of Data Fields for Colorado Wickiup Project Data Index

Site Number	Site name (if any)
UTM Zone	UTM East (NAD27)
UTM North (NAD27)	Report title
Author(s)	Contractor
Contractor code	Date originally recorded
Date revisited	Number of wickiup structures
Other wooden features	Additional features
Diagnostic artifacts	Photos (Y/N)
Site Map (Y/N)	Site form source
Comments	Count of sites
Wooden Structure Component Form Version (Sanfilippo/O'Neil/Martin, if any)	County
USGS Quad	NRHP Eligibility (Field)
NRHP Eligibility (OAHP Determination)	County Name
Elevation	Vegetation (On Site)
Wickiup Pole Wood Type	

Data Summaries

These data were subsequently processed to provide relevant descriptive summaries of the extent and character of Colorado's aboriginal wooden structures, and the quality and completeness (or lack thereof) of associated documentation in the archaeological record.

As a work-around for the significant gaps, inconsistencies, and overall lack of reliable information on structure types in the project data, the general term “aboriginal wooden structures”, or simply “wooden structures”, is used in the data summaries presented below. This term includes wickiups, 1- and 2-pole leaners, tree platforms, and other kinds of wooden structures and features. As we continue to add new data in future phases of the project, we will begin to parse “structure type” and report that information when it is available.

The summaries which follow below were prepared from data compiled through 03/10/05:

Table 3: Total Recorded Sites and Aboriginal Wooden Structures in Colorado

Total Sites	278
Sites with structure quantity recorded	248
Sites with structure quantity unknown	30
Sites with 1 structure	164
Sites with 2 structures	31
Sites with 3 structures	20
Sites with 4 structures	7
Sites with 5 structures	4
Sites with 6-9 structures	14
Sites with 10-15 structures	4
Sites with 20 structures	1
Sites with 52 structures	1
Sites with 80 structures	1
"Village" sites, structure quantity unknown	1

Table 4: Total Recorded Aboriginal Wooden Structures in Colorado by County

County	No. of Structures
Rio Blanco	199
Garfield	113
Mesa	88
Montrose	87
Larimer	47
Moffat	35
Eagle	16
Montezuma	10
San Miguel	10
Gunnison	4
Routt	4
La Plata	3
Pueblo	3
Saguache	3
Alamosa	2
Boulder	2
Dolores	2
Jackson	2
Ouray	2
Archuleta	1
Delta	1
Grand	1
Pitkin	ND
Total Structures	635

Table 5: List of Sites Included in the Colorado Wickiup Data Index (as of 03/10/05)

* Known sites, site number not yet assigned, or otherwise unavailable

5AA00757	5JA00651	5ME00332	5MN*	5RB00144	5RB03192
5AL00596	5LP00353	5ME00347	5MN*	5RB00216	5RB03204
5AL00738	5LP01391	5ME00469	5MN00041	5RB00217	5RB03210
5BL00058	5LP01718	5ME00470	5MN00042	5RB00219	5RB03232
5BL00059	5LR*	5ME00552	5MN00044	5RB00266	5RB03236
5DL01510	5LR*	5ME00855	5MN00045	5RB00391	5RB03238
5DL01542	5LR01197	5ME00856	5MN00065	5RB00411	5RB03310
5DT*	5LR01198	5ME01377	5MN00184	5RB00418	5RB03326
5DT01538	5LR01199	5ME03742	5MN00329	5RB00422	5RB03340
5EA*	5LR01200	5ME05693	5MN00475	5RB00427	5RB03448
5EA*	5LR02115	5ME05962	5MN00861	5RB00446	5RB03508
5EA00183	5LR02180	5ME06192	5MN01519	5RB00451	5RB03520
5EA00258	5LR03857	5ME06387	5MN02629	5RB00498	5RB03523
5EA00433	5LR03858	5ME06474	5MN03082	5RB00526	5RB03693
5EA00439	5LR03911	5ME06674	5MN03110	5RB00530	5RB03840
5EA00523	5LR04460	5ME06793	5MN03111	5RB00539	5RB03955
5EA01289	5LR04499	5ME06908	5MN03485	5RB00563	5RB03956
5EA01808	5LR04503	5ME07378	5MN03612	5RB00566	5RB04027
5EA01898	5LR04509	5ME11065	5MN04253	5RB00568	5RB04129
5EA02018	5LR04511	5ME12031	5MN04305	5RB00689	5RB04261
5GA00975	5LR04512	5ME12290	5MN04349	5RB00801	5RB04331
5GF*	5LR04513	5ME12851	5MN04498	5RB01570	5RB04334
5GF00115	5LR04514	5ME13062	5MN04499	5RB01805	5RB04336
5GF00307	5LR04548	5ME13959	5MN04499	5RB01806	5RB04338
5GF00308	5LR04570	5ME14044	5MN04680	5RB01876	5RB04507
5GF00489	5LR0615	5ME14071	5MN04680	5RB01879	5RB04543
5GF00519	5LR06962	5ME14103	5MN04903	5RB01893	5RB04799
5GF01217	5LR07002	5ME14104	5MN05418	5RB02056	5RT00347
5GF01450	5LR07009	5ME14199	5MN05702	5RB02149	5RT00348
5GF01666	5LR09914	5ME14256	5MT02568	5RB02150	5RT00807
5GF02260	5LR10229	5ME14258	5MT03086	5RB02151	5RT01331
5GF02333	5LR10292	5ME14259	5MT09202	5RB02264	5SH00242
5GF02737	5ME*	5ME14260	5MT09899	5RB02284	5SH01912
5GF02805	5ME*	5ME14302	5MT11890	5RB02624	5SH02172
5GF02906	5ME*	5ME14307	5OR00841	5RB02871	5SM00794
5GF02914	5ME*	5MF00074	5OR01446	5RB02926	5SM01126
5GF03003	5ME*	5MF02164	5PE00746	5RB02929	5SM02406
5GF03233	5ME*	5MF02528	5PT*	5RB02930	5SM02425
5GF03415	5ME*	5MF02631	5RB00018	5RB02932	5SM02427
5GF03432	5ME*	5MF02913	5RB00053	5RB02958	5SM02712
5GF03451	5ME*	5MF03440	5RB00057	5RB02968	5SM03370
5GF03459	5ME*	5MF03737	5RB00058	5RB02983	5SM03371
5GN00407	5ME*	5MF03859	5RB00064	5RB02984	5SM03372
5GN00924	5ME*	5MF04368	5RB00107	5RB02985	
5GN01488	5ME*	5MN*	5RB00120	5RB03037	
5GN02786	5ME*	5MN*	5RB00129	5RB03178	
5JA00014	5ME00244	5MN*	5RB00130	5RB03182	

Table 6: List of Data Sources

Source	Sites
BLM-Grand Junction Field Office	6
BLM-Glenwood Springs Field Office	23
BLM-Uncompahgre Field Office	20
BLM-White River Field Office	19
Colorado Dept. of Transportation	1
Contractor – Grand River Institute	4
Contractor – Rocky Mountain Consultants	2
OAHP - Site.Files	172
OAHP-COMPASS	20
Rocky Mountain NPS	2
USDA Forest Service - Grand Mesa, Uncompahgre and Gunnison National Forests	3
Other	6
Total	278

Table 7: Years Sites Originally Recorded

Year originally recorded	No. Sites
1941	1
1962-63	6
1972-79	50
1980-89	64
1990-99	78
2001-04	56
ND	23
Total	278

Table 8: Years Sites Re-visited

Year revisited	No. Sites
1976-77	3
1983-89	5
1990-99	18
2000-2005	31
ND	2
--	219
Total	278

Qualitative Parameters

A Precedent of Inadequate Documentation

A qualitative assessment of the site data compiled to date in this study leaves no doubt that archaeological documentation and analysis of ephemeral Protohistoric and Early Historic structures have been far from adequate in the past. Although improving (see “Recent Wickiup Studies”, p. 21), field and laboratory methods, in large part, continue to fall far short of acceptable standards.

Among the 278 site records compiled in the Colorado Wickiup Project data set, the following general measures of documentation quality pertain:

- 45% of the sites have been designated field eligible for NRHP,
- 43% need more data to determine eligibility, or were otherwise unevaluated,
- 13% were designated not eligible.
- 40% of the sites have been photographed (photographic quality not yet evaluated),
- 60% have not.
- 65% of the sites have been mapped (map quality not yet evaluated),
- 35% have not.
- 3% of the sites have been recorded using the Aboriginal Wooden Structure Component Form,
- 97% have not.

Given the hazards threatening Colorado’s aboriginal wooden structures, and considering the significant archaeological and cultural value of such resources, this snapshot of the documentary mitigation presently afforded them is not a reassuring one.

What is needed to adequately record and mitigate these resources, and to enable present and future researchers to effectively utilize this data for comparative studies, are improved quality standards for documentation and the development and utilization of standardized feature forms for aboriginal wooden structures. Further discussion on this prerequisite and suggestions for documentation standards – including feature forms, photography, dimensional measurements, plan and elevation drawings, and GPS-GIS mapping – are presented below (Part 4: Strategic Plan).

Part 3: Research questions

Insightful overviews of potential research objectives concerning the Protohistoric Era, and Ute archaeology specifically, are presented by Reed and Metcalf (1999:175), Lipe, Varien and Wilshusen (1999:367-369), Reed and Gebauer (2004:101-110), and O'Neil et al (2004:11). Of particular interest to the Colorado Wickiup Project are these researchers' suggestions for:

- further analyses of the old wood problem in order to create a system of more precise dating for relatively recent archaeological components,
- further examination of Ute subsistence and settlement patterns including their year-round residential mobility and the effect on these patterns from the introduction of the horse,
- additional investigations into wickiup variability and resultant insights into site seasonality and duration of occupation, and
- continued study of site structure and intra-site artifact and feature distribution patterns related to Protohistoric wooden structures, which may yield interpretive insights into earlier open artifact scatters and campsites where similar shelters may have once been present

Each of these research issues suggests potential synergism with the long-range goals and objectives of the Colorado Wickiup Project. By focusing our efforts on archaeological documentation of ephemeral wooden structures, we hope to make an important contribution to the knowledge base of the Protohistoric Era, thereby supporting researchers engaged in the pursuit of better understanding of these, and other, archaeological questions. Their advances, in turn, will provide insights that can help us better evaluate, document and mitigate Colorado's endangered aboriginal wooden structures.

There are, however, inherent problems and challenges within each of the areas of Protohistoric Era research noted above. A discussion of these issues follows:

Chronometric Dating and “The Old Wood Problem”

Accurate chronometric dating of Protohistoric sites is critically important in relation to a number of research topics, including inter- and intra-site comparisons, regional population migrations, and others. Dendrochronological and radiocarbon samples from wickiup poles, and radiocarbon samples from associated hearths, have been collected and analyzed in Colorado for decades.

Unfortunately, C-14 samples typically provide date ranges of several decades, or more. This margin of uncertainty is not a significant problem for archaeological contexts that span several thousand years, but it clearly presents difficulties for more recent Protohistoric contexts which span only centuries. Tree-ring dating is generally more accurate than radiocarbon dating, but shares with radiocarbon dating a particular challenge known as the “old wood problem”.

Until the acquisition of steel axes by Native people — which began in the mid-1600s at the earliest, becoming more common after 1820 — wood cutting was a highly labor intensive activity. Long-dead wood that could be easily gathered or brought down without tools was far more appealing than living trees for use as both fuel wood and shelter poles. However, since dendro and C-14 dating techniques provide chronometric information based only on a tree’s *death*, the resultant dates tend fall one to three centuries earlier than the cultural utilization of the of wood. In other words, the age of the sample does not indicate the age of its use by aboriginal people, which is, in fact, the question of interest.

Reed and Metcalf (1999) and Reed and Gebauer (2004) provide detailed overviews of the old wood issue. Reed and Gebauer (2004:101-104) discuss the inherent limitations within the existing database of Protohistoric dates, which they consider too imprecise for adequate investigations into current research questions:

The primary limitations of the traditional dating approaches stem from use of long-dead wood for fuel and for habitation structures. As Reed et al (2001) argue, based on ethnographic and archaeological evidence, regional Protohistoric-era peoples lacked an effective technology for cutting large pieces of wood. The Utes had bone wedges and chopping tools that could cut wood (Smith 1974), but such tools required great amounts of labor to topple living trees (see also Mills 1993). Because Protohistoric populations were highly mobile and had low demand for large beams, they probably simply toppled long-dead standing trees when needed. They may have even purposefully killed living trees for future use (Greubel and Cater 2001). Pinyon and juniper trees —which are most often represented as wood fuels and as primary structural elements of wickiups — are small enough to be pushed over by an individual if the bases are rotted. Dead trees may stand between 100 and 244 [sic] years in the Southwest before becoming capable of toppling by people (Hobler and Hobler 1978). Radiocarbon and dendrochronological dating, of course, only provide dates for the time of tree death. As a result, these methods tend to overestimate the ages of occupations.

Recent thermoluminescence dates from Protohistoric ceramics have been compared to radiocarbon dates from the same archaeological components and found to be approximately one or two centuries more recent (Reed et al 2001), providing us with a tentative scale with which to roughly correlate the value of the “old wood problem”, at least *in those particular sites in that particular environment*. Keep in mind that a single wickiup may contain individual poles of the same species that died 100 or more years apart from each other.

Baker (1993) proposes adding 300 years to account for the difference between the date of a tree's death and the use of its wood for fuel or construction, but this author agrees with Reed and Metcalf (1999) who suggest that too many variables — for example the disparate decay rates of different species of wood in different environments — are involved to rely on an arbitrary constant. Much additional research will be needed to resolve this age discrepancy issue.

Reed and Gebauer, in their context for the Uncompahgre Plateau (2004), provide a thorough summary of the chronological studies of Protohistoric-era sites and components in west central Colorado. They cite 25 radiocarbon dates, 27 dendrochronological dates, and five thermoluminescence dates, a vast majority from two wickiup sites; the Schmidt Site and the Simpson Wickiup. Their tables presenting these data (ibid.:102-103), are reproduced below as Tables 9, 10, and 11 (pp. 39-40). Their calibrated radiocarbon dates range from an early sample at AD790-1150 to a late date of AD1670-1955, dendrochronological dates range from AD1613 to AD1855, and thermoluminescence dates from AD1327-1495 to AD1745-1811.

Protohistoric-era research has begun to employ methods allowing for more precise radiocarbon dating. Because of the old wood problem, archaeologists, where possible, have begun to concentrate their analyses on more short-lived organic materials such as bone and antler, seeds and twigs, annual plants, and woody plants other than trees. Unfortunately, it is within our period of concern, about AD1700 to 1900, that radiocarbon dating is least effective (Higham nd.).

Of course dendrochronological dates from Protohistoric wooden structures are equally affected by old wood factors. Additionally, narrow juniper trunks — the construction material of a vast majority of wickiups — are somewhat problematic as a source for dendrochronology because of the small sample size they offer for comparison with established ring patterns. Tree ring dates from the altered surfaces of culturally-modified trees offer a greater degree of control and reliance in many cases and it is imperative that core samples of these specimens be collected, especially when they are associated with wickiups, ceramics, or other diagnostic artifacts.

Structure poles and support trees that exhibit evidence of steel axe cut marks are of interest in terms of dating wickiup sites. With the addition of steel wood-chopping tools to the Ute assemblage, the cutting of still-living limbs and small trees for construction purposes became more common. For example, the sites recorded in the field by the current project, the Coyote Skull and Brush Corral Wickiup Villages (5ME14258 and 5ME14260), contained axe-cut poles and an axe-limbed juniper tree (Martin et al, 2005). Since it is likely that these trees and limbs were cut while still alive, they could provide highly accurate dendrochronological dating samples (at least for these obviously quite recent sites) as compared to long-dead trees that had been collected for use. If specific poles in a structure could be identified as having been broken-off-while-dead by the architects, and others in the same structure as having been cut as “green” poles, the date comparisons could provide informative insights into the old wood issue.

Site	Site Name	Sample No.	Radio-carbon Assay B.P.	Calibrated Range (2 sigma)	Dated Material	13C/12C Ratio	Reference	Comments
5MN4253	Schmidt Site	Beta-117459	650 ± 60	AD 1270-1410	Charcoal	-25 ‰	Greubel and Cater 2001	Locus 1
5MN4253	Schmidt Site	Beta-117460	300 ± 60	AD 1450-1800	Charcoal	-25 ‰	Greubel and Cater 2001	Locus 1
5MN4253	Schmidt Site	Beta-117461	400 ± 50	AD 1430-1630	Charcoal	-25 ‰	Greubel and Cater 2001	Locus 1
5MN4253	Schmidt Site	Beta-117127	650 ± 50	AD 1280-1400	Charcoal	-25 ‰	Greubel and Cater 2001	Locus 2, Component 4
5MN4253	Schmidt Site	Beta-117120	560 ± 50	AD 1300-1430	Charcoal	-25 ‰	Greubel and Cater 2001	Locus 2, Component 4
5MN4253	Schmidt Site	Beta-117124	450 ± 50	AD 1400-1625	Charcoal	-25 ‰	Greubel and Cater 2001	Locus 2, Component 4
5MN4253	Schmidt Site	Beta-117121	330 ± 50	AD 1460-1650	Charcoal	-25 ‰	Greubel and Cater 2001	Locus 2, Component 4
5MN4253	Schmidt Site	Beta-127856	300 ± 70	AD 1440-1945	Bone collagen	-19 ‰	Greubel and Cater 2001	Locus 2, Component 4
5MN4253	Schmidt Site	Beta-117471	650 ± 50	AD 1280-1400	Charcoal	-25 ‰	Greubel and Cater 2001	Locus 6, Component 1
5MN4270	Aldasoro Site	Beta-117117	560 ± 40	AD 1300-1430	Charcoal	-21.4 ‰	Greubel and Reed 2001a	
5SM2425	Simpson Wickiup	Beta-127183	1070 ± 50	AD 790-1150	Charcoal	-25 ‰	Greubel 2001	Component 4
5SM2425	Simpson Wickiup	Beta-127193	530 ± 60	AD 1300-1450	Charcoal	-25 ‰	Greubel 2001	Component 4
5SM2425	Simpson Wickiup	Beta-127188	520 ± 50	AD 1300-1460	Charcoal	-25 ‰	Greubel 2001	Component 4
5SM2425	Simpson Wickiup	Beta-127186	490 ± 60	AD 1300-1620	Charcoal	-25 ‰	Greubel 2001	Component 4
5SM2425	Simpson Wickiup	Beta-127182	460 ± 60	AD 1320-1630	Charcoal	-25 ‰	Greubel 2001	Component 4
5SM2425	Simpson Wickiup	Beta-127196	440 ± 70	AD 1340-1640	Sediment	-25 ‰	Greubel 2001	Component 4
5SM2425	Simpson Wickiup	Beta-127189	450 ± 50	AD 1400-1625	Charcoal	-25 ‰	Greubel 2001	Component 4
5SM2425	Simpson Wickiup	Beta-127191	190 ± 60	AD 1640-1950	Charcoal	-25 ‰	Greubel 2001	Component 5
5SM2425	Simpson Wickiup	Beta-127185	140 ± 70	AD 1660-1940	Wood	-25 ‰	Greubel 2001	Component 5
5SM2425	Simpson Wickiup	Beta-127187	80 ± 60	AD 1680-1950	Charcoal	-25 ‰	Greubel 2001	Component 5
5SM2425	Simpson Wickiup	Beta-127184	80 ± 60	AD 1675-1950	Charcoal	-25 ‰	Greubel 2001	Component 5
5SM2427		Beta-131027	60 ± 60	AD 1670-1955	Sediment	-25 ‰	Eckman et al. 2001	Feature 1000
5MN4253	Schmidt Site	Beta-130992	120 ± 50	AD 1670-1940	Charcoal	-25 ‰	Eckman et al. 2001	Feature 1005
5MN2629		Beta-36043	810 ± 90	AD 1025-1390	Charcoal	?	Greubel 1989	
5OR182		Beta-1971	510 ± 60	AD 1310-1480	Charcoal	?	Muceus & Lawrence 1986	Too late?

Table 9: Protohistoric Era Radiocarbon Dates (Reed and Gebauer, 2004:102)

Site No.	Site Name	Component	Sample No.	Outer Ring	Context
5MN41	Lee Ranch Wickiup		UTE-2	AD 1741	Wickiup
5MN42			UTE-5	AD 1762++v	Wickiup
5MN42			UTE-4	AD 1763v	Wickiup
5MN4253	Schmidt Site	Locus 1	Ute 17	AD 1613vv	Wickiup
5MN4253	Schmidt Site	Locus 1	Ute 20	AD 1646++vv	Wickiup
5MN4253	Schmidt Site	Locus 1	Ute 11	AD 1703++vv	Wickiup
5MN4253	Schmidt Site	Locus 2	Ute 40	AD 1725++vv	Wickiup
5MN4253	Schmidt Site	Locus 2	Ute 41	AD 1644++vv	Stripped tree
5MN4253	Schmidt Site	Locus 2	Ute 42	AD 1708++vv	Stripped tree
5MN4253	Schmidt Site	Locus 6	Ute 32	AD 1621vv	Stripped tree
5MN4253	Schmidt Site	Locus 6	Ute 30	AD 1664++vv	Wickiup
5MN4253	Schmidt Site	Locus 6	Ute 33	AD 1617vv	Wickiup
5MN4253	Schmidt Site	Locus 6	Ute 26	AD 1811++vv	Wickiup
5MN4253	Schmidt Site	Locus 6	Ute 29	AD 1838++b	Stripped tree
5MN4253	Schmidt Site	Locus 6	Ute 23	AD 1806++b	Stripped tree
5SM2425	Simpson Wickiup		UTE 54	AD 1805++b	Stripped tree
5SM2425	Simpson Wickiup		UTE 55	AD 1741++vv	Stripped tree
5SM2425	Simpson Wickiup		UTE 56	AD 1735++vv	Stripped tree
5SM2425	Simpson Wickiup		UTE 57	AD 1716++vv	Stripped tree
5SM2425	Simpson Wickiup		UTE 58	AD 1761++vv	Stripped tree
5SM2425	Simpson Wickiup		UTE 61	AD 1855++vv	Stripped tree
5SM2425	Simpson Wickiup		UTE 62	AD 1679++b	Stripped tree
5SM2425	Simpson Wickiup		UTE 63	AD 1486++vv	Stripped tree
5SM2425	Simpson Wickiup		UTE 64	AD 1662++b	Stripped tree
5SM2425	Simpson Wickiup		UTE 65	AD 1576++vv	Stripped tree
5SM2425	Simpson Wickiup		UTE 68	AD 1752++vv	Wickiup
5SM2425	Simpson Wickiup		UTE 69	AD 1805++vv	Wickiup

Table 10: Dendrochronological Dates from Protohistoric Era Sites (Reed and Gebauer, 2004:103)

Site No.	Site Name	Component	Sample No.	Age (Years AD)	Calendrical Range
5MN4253	Schmidt Site	Locus 2, #4	UW348	1778 33	1745-1811
5MN4253	Schmidt Site	Locus 2, #4	UW350	1714 45	1669-1759
5MN4253	Schmidt Site	Locus 6	UW345	1411 84	1327-1495
5MN4270	Aldasoro Site		UW344	1503 42	1461-1545
5SM2425	Simpson Wickiup		UW430	1619 50	1569-1669

Table 11: Thermoluminescence Dates from Protohistoric Era Ceramics (Reed and Gebauer, 2004:103)

Thermoluminescence of ceramics is of significant interest to Protohistoric research because of the old wood problems associated with C-14 and tree ring dating. However this technique also has limitations with such young specimens. As expected, luminescence dates tend to run from 100 to 200 years more recent than C-14 dates from the same contexts (Reed and Gebauer 2004:103).

Other dating methods, such as archaeomagnetism and obsidian hydration, are even more problematic for a variety of reasons, primarily related to the margin of error in the dating results.

Ute Origins and Settlement Patterns:

The number of excavated Protohistoric components has increased in recent years (Reed and Metcalf 1999:167). Although this has added greatly to our ability to recognize and interpret such sites from surficial evidence, and has further substantiated our chronometric dating of diagnostic artifacts and our understanding of Ute origins, our ability to differentiate between archaeological remains of the Ute and those of the Shoshone, Navajo, or even Comanche and others, remains problematic at best. A great deal more research will be needed before it can be ascertained as to the degree to which these cultural groups can be identified archaeologically.

Another aspect of Ute settlement that this author feels is significantly in need of research is that of post-1881 off-reservation encampments. It is known and excepted that not only did Ute peoples venture off of the reservations for hunting, ritual, and recreation (annual trips to Glenwood Springs are well documented), and occasional raiding, but also individuals and groups remained off reservation full time in “refugee” situations for years after the “final removal” of the Utes in 1881. Proper dendrochronological and radiocarbon dating, as well as identification of historic trade goods, could help shed light on this little-researched aspect of early Historic Period Ute occupation.

Wickiup Variability

Variations within Protohistoric technology, including wickiup design and construction, remain understudied and poorly understood. It is conceivable and predictable that shelter design would have varied: regionally, throughout time; seasonally, from one cultural group or band to another; from one individual builder to another; with the introduction of the horse as a beast of burden; and so forth. Furthermore, as we discussed above (Part 1: Archaeological Context), there is ample evidence in the archaeological and ethnographic records, including consultation from contemporary Native informants, that not all conical wooden structures were solely or partially for the purpose of domestic shelter. Especially when considering site structure and activity area analysis, so-called “wickiups” consisting of one or two leaning poles and a support tree cannot be assumed to be the remains of house structures. Other functions for conical structures and leaning poles include menstrual huts, sweat lodges, ceremonial houses, pet shelters, hide processing poles, and meat drying racks.

As discussed above (Part 1: Archaeological Context), Baker (1996 and 2003) has made inroads in this area with his attempts at identifying menstrual huts on Ute sites. However, Reed and

Metcalf (1999) state that no undisputed menstrual huts have been identified in the archaeological record and O'Neil et al (2004) argue that Baker's proposed methodology for asserting that many of the smaller features are menstrual huts remains inadequate.

Site Structure and Intra-site Spatial Analysis

The Rifle Wickiup Village Assessment (O'Neil et al 2004) provided opportunities for consideration of site structure and intra-site spatial analysis issues:

Protohistoric Era sites are uniquely suited for providing insight into intra-site patterning of activity areas at earlier open artifact scatters, especially if ephemeral brush structures are present. Since such structures tend to disappear without a trace with the passage of time, it is likely that most of the early hunting and gathering campsites once had ephemeral brush structures. Therefore, Protohistoric Era sites with brush structures often provide insight into the relationships between artifact distribution patterns and feature distributions as they relate to these structures. Thus, they can aid in the interpretation of many sites where such structures have disappeared (O'Neil et al 2004:11).

Despite the inherent accuracy of O'Neil's statement, attempts to interpret activity areas and intra-site structure and functionality — and, subsequently, Protohistoric lifeways in general — face many complex and intricate problems. As in all archaeological situations, this is especially true for multicomponent sites such as the Rifle Wickiup Village. In addition to the problems of intra-site spatial analysis intrinsic at all multicomponent sites, Protohistoric sites present particular issues stemming from the fact that all of the occupations of concern are within a relatively short time span — a few hundred rather than several thousands of years. Because of the old wood problem, the determination of contemporaneity between individual thermal features and structures often proves to be inconclusive, and therefore impossible to use in the determination of intra-site activity areas.

Greubel (2005) discusses evidence that some Numic (Ute) groups tended to revisit the same localities repeatedly and to construct new wickiups during each visit rather than re-occupying previously constructed shelters. He suggests that, particularly on the larger sites with numerous structures, this practice could tend to lead researchers to exaggerated estimates of population size and length of occupation.

A Note on Modern Features: Where Does Archaeology Draw the Line?

Acknowledging the current practice of considering all man-made objects and features that are 50 years old or older to be of archaeological interest, it is often difficult, as discussed above, for the field worker to determine the temporal eligibility of specific items. Modern tipis, sweat lodges, lean-tos, and livestock containments, including recent “boy scout” mimics of the same, are periodically encountered in the field and must be considered. In general, due to the rare and significant nature of legitimate archaeological wooden features, a “when in doubt—record it” policy is recommended for researchers in the field.

Part 4: Strategic Plan

The primary goals and objectives of the initial phase of the Colorado Wickiup Project (CWP) were to answer these questions:

- What do we know about wickiups and other aboriginal wooden structures in Colorado?
- What more do we need to learn from these fragile and endangered cultural resources before they disappear?
- How can we best record and preserve the archaeological information and cultural value in such resources?
- How can we maximize the research, preservation and educational value of the information and knowledge we gain?

Parts 1, 2 and 3 of this report present answers we have found to date in our long-range study of the first two of these questions. The following discussion seeks to answer the second two.

Urgent Needs and Top Priorities

Accelerated data collection

As noted above (Part 2), given the hazards threatening Colorado’s aboriginal wooden structures, and considering their significant archaeological and cultural value, the documentary mitigation currently afforded these resources is clearly inadequate. Wickiups are disappearing from the Colorado landscape. Yet, at the present time, cultural resource records fall far short of assuring that the archaeological knowledge they contain, and the cultural legacy they represent, will survive for future generations to study, appreciate and enjoy.

Consequently, we have identified accelerated data collection as our most important immediate priority going forward in CWP's long-range project to fully document ephemeral and endangered aboriginal wooden structures and features throughout Colorado.

In this regard we plan to focus most immediately on continued field reconnaissance and documentation projects involving known but inadequately recorded Protohistoric/Historic aboriginal wickiup locales and sites. Dominquez Archaeological Research Group (DARG) has received a SHF Grant (Project # 2006-M1-013), with matching funds from Colorado BLM, to record a minimum of 50 endangered aboriginal wooden structures in Mesa, Garfield and Rio Blanco Counties to the level of standards (described below) recommended by the Colorado Wickiup Project. Resulting documentation will be provided to OAHP and will be integrated into the Colorado Wickiup Project data collection. Sites were selected for the project in collaboration with BLM archaeologists from Glenwood Springs FO, Montrose FO, Grand Junction FO, White River FO, and Little Snake FO.

We will continue to collaborate with land management agencies, and other interested members of the archaeological and historic preservation communities, to identify priority sites for subsequent study, and to fund and implement on-going field survey and recording projects. Our primary long-range goal is to achieve the acceptable documentary mitigation of *all* of Colorado's aboriginal wooden structures. We believe this strategy will help us achieve that goal.

Improved Recording Standards and Methods

In our data assessment discussion (p. 35), we highlighted the poor quality and incompleteness of significant portions of the existing cultural records of Colorado's aboriginal structures. We have concluded, second only to accelerating the pace of data collection, that improvements in recording standards are a top priority.

We propose that essential documentation for all aboriginal wooden structures should include, at a minimum:

- the completion of an Aboriginal Wooden Structure Component Form, or equivalent (see Appendix C-3),
- precise and uniform UTM data, and
- measurements, photographic documentation, and plan and elevation scale drawings of structures and features.

Further field analysis of selected sites should include:

- intensive mapping of surface artifacts,
- excavation within and outside of structures,
- metal detection, and

- the collection of diagnostic artifacts as well as chronometric and botanical samples from structures themselves and from associated hearths.

To expedite the implementation of these standards, and for the benefit of all archaeological researchers in Colorado, we have prepared an outline of recommended field techniques for recording wickiups and other aboriginal wooden structures and features, presented below in Appendix E.

On-going Goals and Objectives

With regard to our final question — How can we maximize the research, preservation and educational value of the information and knowledge we gain? — we plan to continue to implement, refine, and expand the following strategies:

Collaboration and Information sharing

During our work on the initial phase of the Colorado Wickiup Project, we actively collaborated with archaeologists from Colorado Bureau of Land Management field offices (FO) covering areas of the state with the highest incidence of wickiups and other aboriginal wooden structures. These individuals included: Cheryl Harrison, Glenwood Springs FO; Julie Coleman, Uncompahgre FO; Mehgan Murphy and Aline LaForge, Grand Junction FO; Michael Selle, Meeker FO; and Hal Kiesling, Little Snake FO. Additional consultants included Thomas Carr, Staff Archaeologist, Office of the State Archaeologist, OAHP; and Mary Sullivan, Database Administrator/Archaeologist, OAHP. We will continue to work with these, and other, agency partners as we continue forward.

Informal consultants engaged to date on the project include independent research archaeologists Brian O’Neil, Steven G. Baker, Rand Greubel, and Carol Patterson; Bill Kight, Archaeologist, White River National Forest; Sally Crum, Archaeologist, Grand Mesa, Uncompahgre & Gunnison National Forest; and Patricia C. Holcomb, Technical Advisor, Colorado Preservation, Inc. Our immediate goal in this area of collaboration is to work more closely with these partners, and others, to expand information sharing opportunities and on-going discussions that will help to refine our research objectives, and to shape specific priorities and targets for on-going field survey and recording projects.

In the initial phase of the project, we contacted members of the Southern Ute Tribe, the Ute Mountain Ute Tribe, and the Northern Ute Tribe to introduce ourselves, to inform them of our efforts, and to explore opportunities for on-going collaboration and information sharing. We have become aware, in due course, of several dimensions of our study — bureaucratic, political, cross-cultural and professional — which present differences of opinion in some cases, and even religious belief in others. We therefore made a strategic decision to move slowly, deliberately and with respect in these areas, feeling the need to have in hand the body of knowledge presented in this report before moving forward. With that requirement now met,

we plan to further explore opportunities we see for on-going collaboration and information exchange in the interpretation and preservation of the rich cultural legacy that wickiups and other aboriginal wooden structures represent in the state.

Professional Outreach and Public Education

Recognizing the benefit of “spreading the word” about the Colorado Wickiup Project, and our efforts to improve recording standards and promote better field techniques for documenting wickiups, we presented papers at two key professional conferences during the initial phase of the project, including:

Big MACC 2005 Conference
Crow Canyon Archaeological Center
February 25, 2005, Cortez, CO

Colorado Council of Professional Archaeologists
2005 Annual Meeting
March 3-6, 2005, Grand Junction, Colorado
(Papers and slides available at <http://www.dargnet.org/download/index.html>)

Public Lecture — Archaeology Week 2005
College of Eastern Utah Prehistoric Museum
May 12, 2005, Price, Utah

We are scheduled to present, also, at:

Saving Places 2006: Building on the Past
Colorado Preservation, Inc.
February 8-10, 2006, Denver, Colorado

A web site for the Colorado Wickiup Project was launched in February, 2005 (<http://www.dargnet.org/colowick/>). At this time the site presents an overview of the project, contact information for the project team, acknowledgement of project technical advisors and consultants, and downloadable copies of a Data Index Summary, papers and slides from our CCPA presentation, and a copy of the Aboriginal Wooden Structure Component Form. An edited, public version of this report will be added in the near future. We are currently expanding our web presence and will continue to develop opportunities for web-based information exchange — for both public and professional audiences.

We received local press coverage the Colorado Wickiup Project in a *Grand Junction Free Press* article, March 3, 2005. With the results of our Phase 1 activities now in hand, we plan to seek further local and state-wide press awareness in our on-going public outreach efforts.

A Long-range look ahead

In our long-range thinking, we continue to see exciting opportunities for increasing the value of our more immediate data collection and documentation efforts. Our data dissemination strategy, first and foremost, is to insure that the information we collect is added to the OAHN database as expeditiously as possible. That repository will continue to serve as the primary source of access to documentation of wickiups and other aboriginal wooden structures in the state. However, we recognize the necessary constraints and limitations of that system, and we are particularly interested in further exploring possibilities for the development of an online, access-controlled, multi-media, research database that would put an even greater wealth of information about wickiups within the reach and practical application of Colorado archaeologists.

References Cited

Baker, Steven G.

- 1991a *Ephemeral Archaeology on the Mountain of the Sorrel Deer*. Colorado State Office, Bureau of Land Management, Denver.
- 1991b A Cultural Resource Inventory of Southwest Rangely 15-5 Well Location and Access Road, Rio Blanco County, Colorado. Ms. on file at Centuries Research, Inc., Montrose, Colorado. Prepared for the Bureau of Land Management, White River Resource Area, Meeker, Colorado.
- 1993 *Numic Archaeology on the Douglas Creek Arch, Rio Blanco County, Colorado: The Burned Cedar and Corrugated Pot Sites (5RB2926 and 5RB2982)*. Ms. on file at Centuries Research, Inc., Montrose, Colorado. Prepared for the Bureau of Land Management, White River Resource Area, Meeker, Colorado.
- 1995 Fremont and Numic Archaeology on the Douglas Creek Arch, Rio Blanco County, Colorado: The Sandshadow and New Sites (5RB2958 and 5RB3060). Ms. on file at Centuries Research, Inc., Montrose, Colorado. Prepared for the Bureau of Land Management, White River Resource Area, Meeker, Colorado.
- 1996 *Numic Archaeology on the Douglas Creek Arch, Rio Blanco County, Colorado: Ute Rancherias and The Broken Blade Wickiup Village (5RB3182)*. Ms. on file at Centuries Research, Inc., Montrose, Colorado. Prepared for the Bureau of Land Management, Meeker, Colorado.
- 2003 Historic Ute Archaeology: Interpreting the Last Hour Wickiup (5RB3236). *Southwestern Lore* 69 (4). Colorado Archaeological Society, Denver.
- 2005 *Dear Bill, Dear Omer: What Should We Do Now? Notes on the Current State of Post-Contact Eastern Ute Archaeology*. Paper presented at the Colorado Council of Professional Archaeologists Annual Meeting, March 4-5, Grand Junction, Colorado.

Baker, Steven G. and Monte Sandburg

- 1993 *Third Annual Executive Summary and Management Report, Chandler and Associates' Douglas Creek Archaeology Cultural Resource Management Program*. Chandler Douglas Archaeology Series Report No. 70. Centuries Research, Inc., Montrose, Colorado.

Binford, Lewis R.

- 1980 Willow Smoke and Dogs Tails :Hunter-Gatherer Settlement Systems and Archaeological Site Formation. *American Antiquity* 45(1):4-20.

Blackburn, Fred

- 2005 *Identification of a Cradle Board Scar on a Spruce Tree*. Paper presented at the 2005 Big Meeting at Crow Canyon (Big MACC) Conference, Crow Canyon Archaeological Center, Colorado, 2/25/05.
- Buckles, William G.
 1971 *The Uncompahgre Complex: Historic Ute Archaeology and Prehistoric Archaeology on the Uncompahgre Plateau in West Central Colorado*. Ph.D. dissertation, Department of Anthropology, University of Colorado. University Microfilms, Ann Arbor, Michigan.
- Butler, William H.
 2004 An Experimental Wickiup. *Southwestern Lore* 70 (1). Colorado Archaeological Society, Denver.
- Callaway, Donald, Joel Janetski, and Omer C. Stewart
 1986 Ute. In *Great Basin*, edited by Warren L. D'Azevedo, pp. 336-367. Handbook of North American Indians, Volume 11, William G. Sturtevant, general editor. Smithsonian Institution, Washington, D.C.
- Carmichael, Max
 2003 Eohippus web site.
- Cassells, E. Steve
 2003 *Tracing the Past: Archaeology Along the Rocky Mountain Expansion Loop Pipeline*. Alpine Archaeological Consultants, Inc., Montrose, Colorado.
- Chuiyka, Jason
 2005 *A Discussion of the Ceremonial Complex at 5LP245 (Sacred Ridge), An Early Pueblo I Community in Ridges Basin, Colorado*. Paper presented at the 2005 Big Meeting at Crow Canyon (Big MACC) Conference, Crow Canyon Archaeological Center, Colorado, 2/25/05.
- Conner, Carl E.
 1988 Archaeological Investigations at 5EA433. In *Archaeology of the Eastern Ute: A Symposium*, edited by Paul R. Nickens, pp. 190-205. CCPA Occasional Papers No. 1. Colorado Council of Professional Archaeologists, Denver. Ms. on file at the Bureau of Land Management White River Field Office, Meeker, Colorado.
- Conner, Carl E. and Barbara J. Davenport
 2000 *Report of the Evaluative Test Excavations at Site 5RB451 in Rio Blanco County, Colorado* Ms. on file, Grand River Institute, Grand Junction, Colorado.
- Conner, Carl C., and Danni L. Langdon
 1987 *Battlement Mesa Area Cultural Resources Study*. Grand River Institute, Grand Junction, Colorado. Ms. on file at the Bureau of Land Management, Grand Junction Resource Area, Grand Junction, Colorado.

- Conner, Carl E., Curtis Martin, Barbara J. Davenport, Nicole Darnell, and Jim Conner
 2002 *Cultural Resource Reevaluation of Previously Recorded Sites Within the Gunnison Gorge NCA Administered by the Uncompahgre Field Office Bureau of Land Management*. Grand River Institute, Grand Junction, Colorado. Ms. on file at the Bureau of Land Management, Uncompahgre Field Office, Montrose, Colorado.
- Crum, Sally
 1996 *People of the Red Earth: American Indians of Colorado*. Ancient City Press, Santa Fe, New Mexico.
- Dial, Janis L.
 1989 *The Currecanti Archaeological Project: The Late Prehistoric Component at Pioneer Point*. Occasional Studies in Anthropology No. 24. Midwest Archeological Center, Lincoln, Nebraska.
- Gilmore, Kevin P., Marcia Tate, Mark L. Chenault, Bonnie Clark, Terri McBride, and Margaret Wood
 1999 *Colorado Prehistory: A Context for the Platte River Basin*. Colorado Council of Professional Archaeologists, Denver.
- Gooding, John D.
 1981 *5GF519 Hunting Blind*. Unpublished field notes. Ms on file at the State of Colorado Department of Transportation and the Denver Museum of Nature and Science.
- Guthrie, Mark R., Powys Gadd, Renee Johnson, and Joseph J. Lischka
 1984 *Colorado Mountains Prehistoric Context*. Colorado Council of Professional Archaeologists, Denver.
- Greubel, Rand A.
 2001 Investigations at the Simpson Wickiup Site (5SM2425). Vol. 4, Chapter 22, in *The Trans Colorado Natural Gas Pipeline Archaeological Data Recovery Project, Western Colorado and Northwestern New Mexico*. Alpine Archaeological Consultants, Inc., Montrose, Colorado.
 2005 *Strategies and Methodologies for Investigating Wickiup Sites*. Paper presented at the Colorado Council of Professional Archaeologists Annual Meeting, March 5, Grand Junction, Colorado.
- Greubel, Rand A. and John D. Cater
 2001 Investigations at the Schmidt Site (5MN4253). Vol. 3, Chapter 21, in *The Trans Colorado Natural Gas Pipeline Archaeological Data Recovery Project, Western Colorado and Northwestern New Mexico*. Alpine Archaeological Consultants, Inc., Montrose, Colorado.

- Higham, Tomas
 nd. *Radiocarbon WEBinfo site*. Web site: www.c14dating.com/k12.
- Hobler, Philip M. and Audrey E. Hobler
 1978 *An Archaeological Survey of the Upper White Canyon Area, Southeastern Utah*. Antiquities Section Selected Papers No. 13. Utah State Historical Society.
- Huscher, Betty H. and Harold A. Huscher
 1939 *Field Notes for 1939*. Ms on file at the Department of Anthropology, Colorado Museum of Nature and Science, Denver.
- Kidwell, A. S., Jr.
 1969 *The Conical Timbered Lodge on the Northwestern Plains: Historical, Ethnological, and Archaeological Evidence*. *Archaeology in Montana* 10(4):1-49.
- Lintz, Christopher, and Jane L. Anderson (editors)
 1989 *Temporal Assessment of Diagnostic Materials from the Pinon Canyon Maneuver Site*. *Memoirs of the Colorado Archaeological Society* No. 4, Denver.
- Lipe, William D., Mark D. Varien, and Richard H. Wilshusen
 1999 *Colorado Prehistory: A Context for the Southern Colorado River Basin*. Colorado Council of Professional Archaeologists, Denver.
- Martin, Curtis
 1977 *A Cultural Survey for the Uncompahgre Environmental Impact Statement*. University of Colorado Mesa Verde Research Center. Ms on file at the Bureau of Land Management Uncompahgre Field Office, Montrose, Colorado.
- 2004 *A Class III Cultural Resource Inventory of 1520 Acres of Private and Federal Lands West of Terror Creek for Bowie Resources, Ltd. in Delta County, Colorado*. Ms. on file at the Bureau of Land Management Uncompahgre Field Office, Montrose, Colorado.
- Martin, Curtis, Carl E. Conner, and Nicole Darnel
 2005 *The Colorado Wickiup Project Volume II: Cultural Resources Class II Reconnaissance Inventory for the Gunnison Gulch Area of Mesa County, Colorado*. Ms. on file at Bureau of Land Management Uncompahgre Field Office, Montrose, Colorado and OAHF.
- Martorano, Marilyn A., Ted Hoefler III, Margaret (Pegi) A. Jodry, Vince Spero, and Melissa L. Taylor
 1999 *Colorado Prehistory: A Context for the Rio Grande Basin*. Colorado Council of Professional Archaeologists, Denver.
- Martorano, Marilyn A.

- 1988 Culturally Peeled Trees and Ute Indians in Colorado. In *Archaeology of the Eastern Ute: A Symposium*, edited by Paul R. Nickens. Colorado Council of Professional Archaeologists Occasional Papers No. 1 CCPA, Denver.
- Mehls, Steven F.
1988 *The Valley of Opportunity: A History of West-Central Colorado*. Bureau of Land Management Cultural Resources Series No. 12, Denver.
- Metcalf, Michael D. and Kevin D. Black
1991 Archaeological Excavations at the Yarmony Pit House Site, Eagle County, Colorado. Colorado Bureau of Land Management Cultural Resource Series #31, Lakewood, Colorado.
- Mills, P. R.
1993 An Axe to Grind: Functional Analysis of Anasazi Stone Axes from Sand Canyon Pueblo Ruin (5MT765), Southwestern Colorado. *Kiva* 58:393-413.
- Nelson, S. M., K. L. Berry, R. Carrillo, B. Clark, L. Rhodes, and D. Saitta
1997 *Unwritten History: The Archaeology of the Denver Basin*, First Draft. University of Denver, Department of Anthropology.
- Nickens, Paul R. (editor)
1988 *Archaeology of the Eastern Ute: A Symposium*. Colorado Council of Professional Archaeologists Occasional Papers No. 1, Denver.
- Office of Archaeology and Historic Preservation
1978 *Site form for site 5SH242, The Elk Track War Lodge*. Unpublished form on file at the Office of Archaeology and Historic Preservation (OAHP), Denver.
- O'Neil, Brian
1993 *The Archaeology of the Grand Junction Resource Area: Crossroads to the Colorado Plateau and the Southern Rocky Mountains*. A Class I Overview. Ms on file at the Bureau of Land Management Grand Junction Field Office, Grand Junction, Colorado.
- O'Neil, Brian and Steven G. Baker
1992 *Second Annual Operating Year Executive Summary and Management Report for Chandler and Associates' SW Rangely Field Cultural Resources Management Program: 1991*. Chandler SW Rangely Field Cultural Resources Report No. 51. Centuries Research, Inc., Montrose Colorado.
- O'Neil, Brian, Carl E. Conner, Barbara J. Davenport, and Richard Ott
2004 *Archaeological Assessment of the Rifle Wickiup Village — 5GF308 in Garfield County, Colorado*. Dominquez Archaeological Research Group, Grand Junction, Colorado. Ms on file at the Glenwood Springs BLM Field Office.

- Pettit, Jan
 1982 *Utes: the Mountain People*. Century One Press, Colorado Springs, Colorado.
- Reed, Alan D.
 1994 The Numic Occupation of Western Colorado and Eastern Utah During the Prehistoric and Protohistoric Periods. In *Across the West: Human Population Movement and the Expansion of the Numa*, edited by D. B. Madsen and D. Rhode. University of Utah Press, Salt Lake City.
- Reed, Alan D. and Rachel Gebauer
 2004 *A Research Design and Context for Prehistoric Cultural Resources in the Uncompahgre Plateau Archaeological Project's Study Area, Western Colorado*. Ms. on file at Uncompahgre Plateau Study Project, Montrose, Colorado
- Reed, Alan D., Rand A. Greubel, Stephen M. Kalasz, Jonathon C. Horn, John D. Cater, and Kimberly Redman
 2001 Synthesis of Project Data, Vol. 7, Chapter 41. In *The Trans Colorado Natural Gas Pipeline Archaeological Data Recovery Project, Western Colorado and Northwestern New Mexico*. Alpine Archaeological Consultants, Inc., Montrose, Colorado.
- Reed, Alan D. and Michael D. Metcalf
 1999 *Colorado Prehistory: A Context for the Northern Colorado River Basin*. Colorado Council of Professional Archaeologists, Denver.
- Robotham, Tom
 1994 *Native Americans in Early Photographs*. World Publications Group, Inc., North Dighton, Massachusetts.
- Sanfilippo, Joanne
 1998 *Ute Wikiups or Navajo Forked-Stick Hogans: Determining Ethnicity Through Architecture in the Archaeological Record*. Unpublished Master's thesis, Department of Anthropology, Northern Arizona University, Flagstaff. Ms on file at Bureau of Land Management, GSFO.
- Scott, Douglas D.
 1988 Conical Timbered Lodges in Colorado or Wickiups in the Woods. In *Archaeology of the Eastern Ute: A Symposium*, edited by Paul R. Nickens, pp 45-53. Colorado Council of Professional Archaeologists Occasional Papers No. 1, Denver.
- Simmons, Virginia McConnell
 2000 *The Ute Indians of Utah, Colorado, and New Mexico*. University Press of Colorado, Boulder.
- Simms, Steven R.

1989. The Structure of the Bustos Wickiup Site, Eastern Nevada. *Journal of California and Great Basin Anthropology* 11 (1), pp. 2-34.
- Slessman, Scott A. and Todd Kohler, Heather Neail, and Scott Phillips
 2004 *Archaeological Investigations at Nucla Camp (5MN6274), Montrose County, Colorado*. SWCA Environmental Consultants, Broomfield, Colorado.
- Smith, Anne M.
 1974 *Ethnography of the Northern Utes*. Papers in Anthropology No. 17. Museum of New Mexico Press, Albuquerque.
- Stiger, Mark A.
 1998 Distinguishing Ute and Navajo Archaeological Remains. *Southwestern Lore* 64(2):1-20. Colorado Archaeological Society, Denver.
- Stone, T.
 1997 *An Intensive Archaeological Survey of the Plains Conservation Center, Arapahoe County, Colorado*. Submitted to the Office of Archaeology and Historic Preservation by the Department of Anthropology, University of Colorado at Denver. Western Central High Plains Archaeological Research Project Survey, Denver.
- Terry, Reed T., and Cynthia Wood Gilchrist
 1988 The Huscher Photographs of Colorado Ute Sites. In *Archaeology of the Eastern Ute: A Symposium*, edited by Paul R. Nickens, pp 45-53., Colorado Council of Professional Archaeologists Occasional Papers No. 1, Denver.
- Towner, Ronald H., Leslie Sesler, and Tim Hovezak
 n.d. Navajo Culturally Modified Trees in the Dinétah. In *Diné Bíkéyah: Papers in Honor of David M. Brugge*.
- Trenholm, Virginia Cole, and Maurine Carley
 1964 *The Shoshonis: Sentinels of the Rockies*. University of Oklahoma Press, Norman.
- Zier, Christian, and Stephen M. Kalasz
 1999 *Colorado Prehistory: A Context for the Arkansas River Basin*. Colorado Council of Professional Archaeologists, Denver.

Appendix A: Photographic Plates



Plate 1: Juniper Pole Wickiup

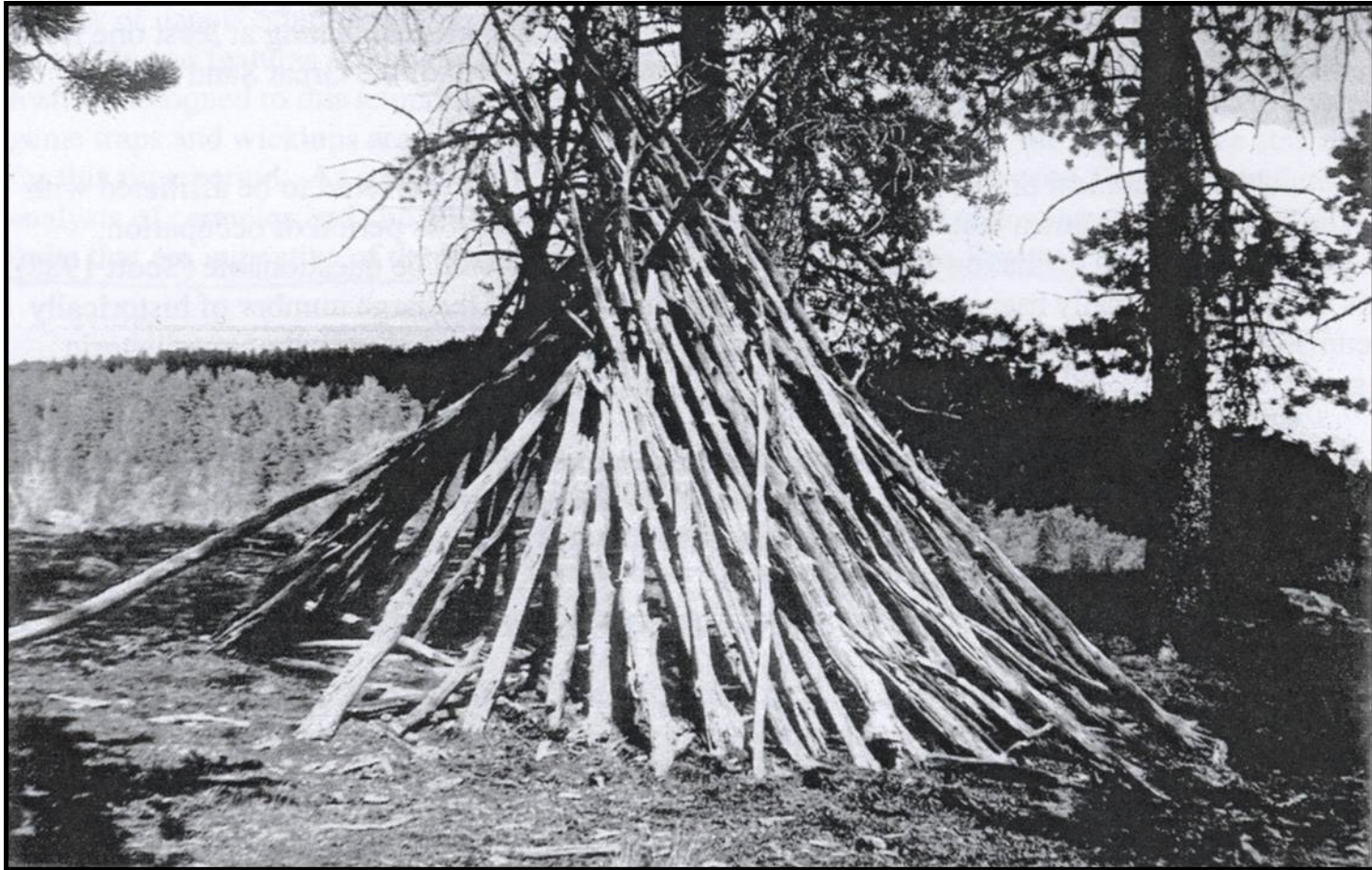


Plate 2: Aspen Pole Wickiup



Plate 3: Plains Tipi



Plate 4: Navajo Hogan



Plate 5: Forked-stick Sweatlodge



Plate 6: Domed Sweatlodge



Plate 7: Wickiup/lean-to Shelter



Plate 8: Ramada or Sun-shade

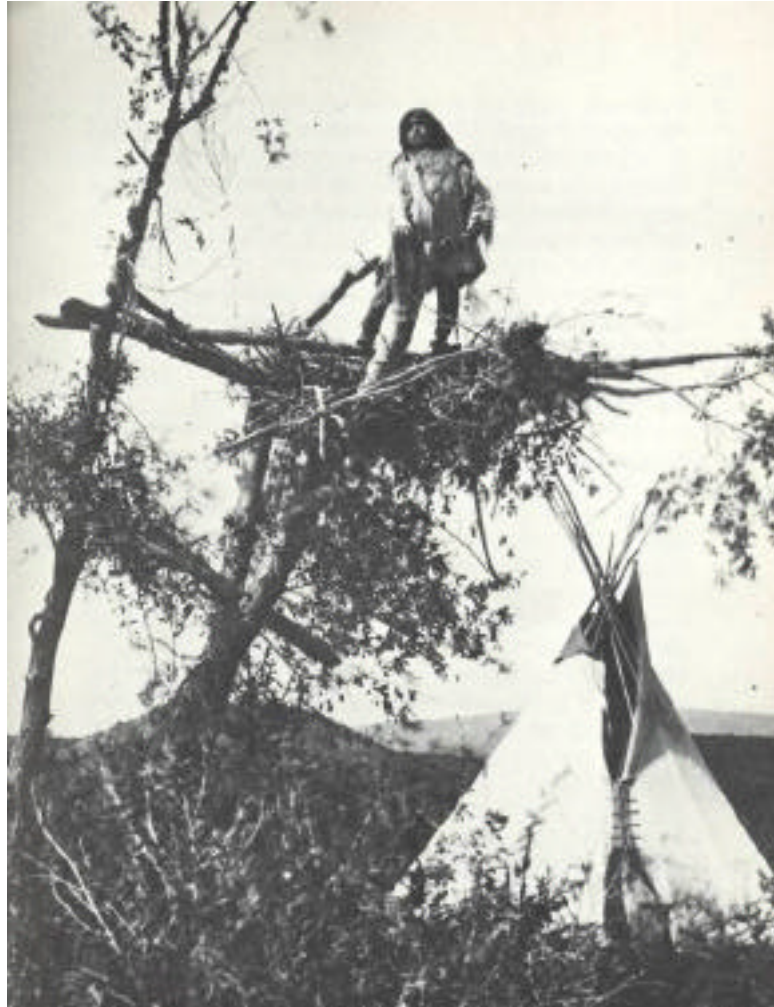


Plate 9: Tree Platform



Plate 10: Culturally Peeled Tree



Plate 11: Example of limited depth of field to make feature stand out from background



Plate 12: Example of silhouette of standing wickiup



Plate 13: Photograph showing the entirety of a support tree



Plate 14: Example of a photograph showing the interior of a structure



Plate 15: Example of a photograph of a collapsed wickiup from a high vantage point

Appendix B: Figures

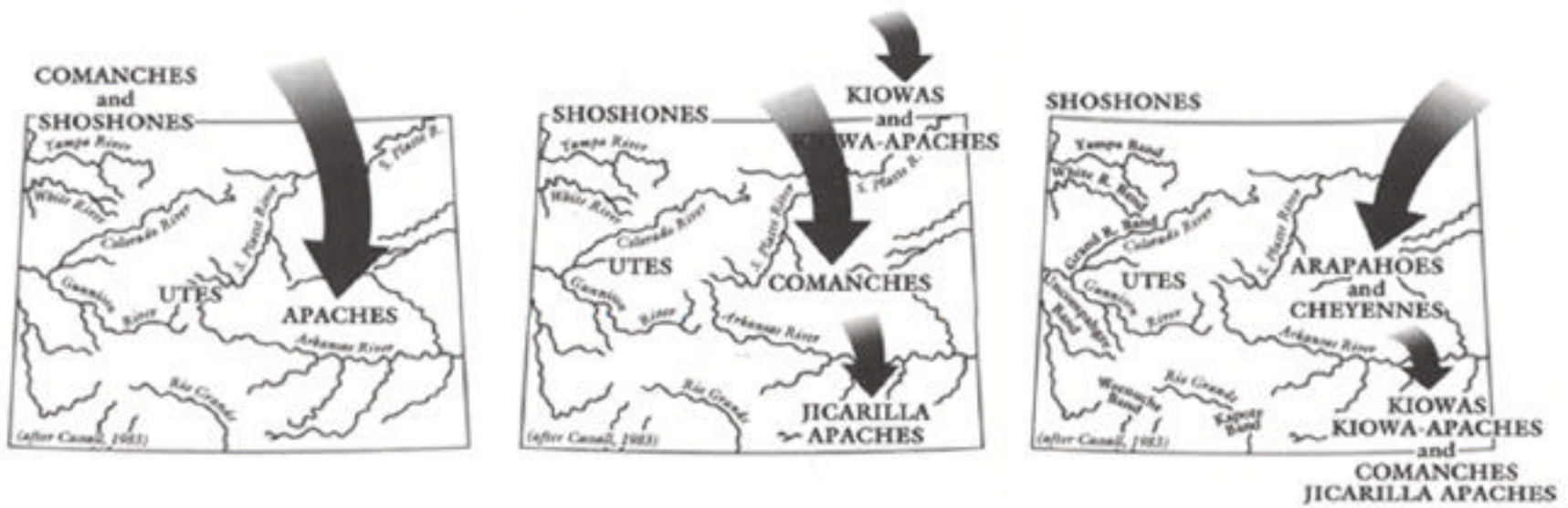


Figure 1: Ethnographic Tribes of Colorado

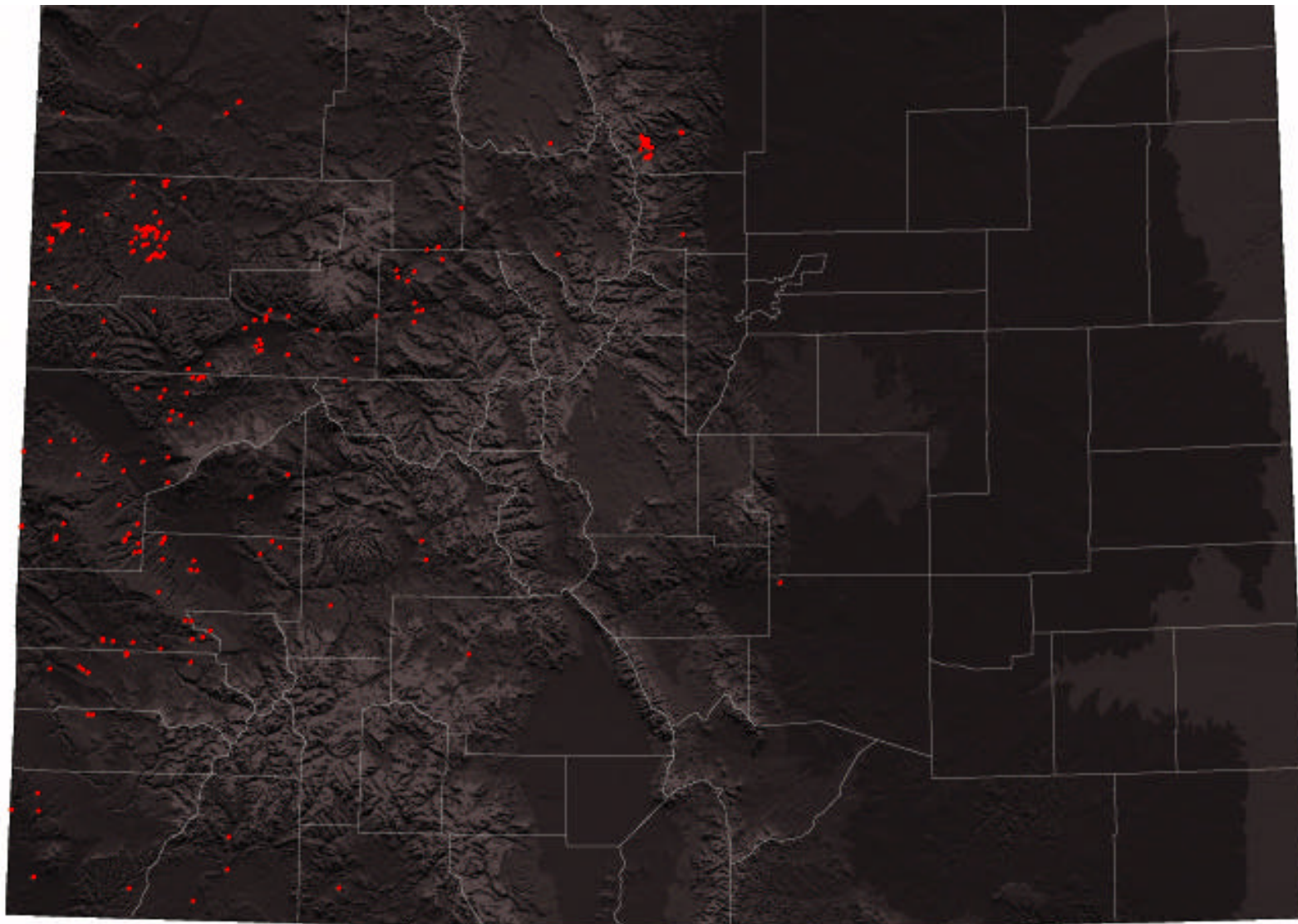


Figure 2: Wickiup Site Locations in Colorado
From data compiled through 03/10/05

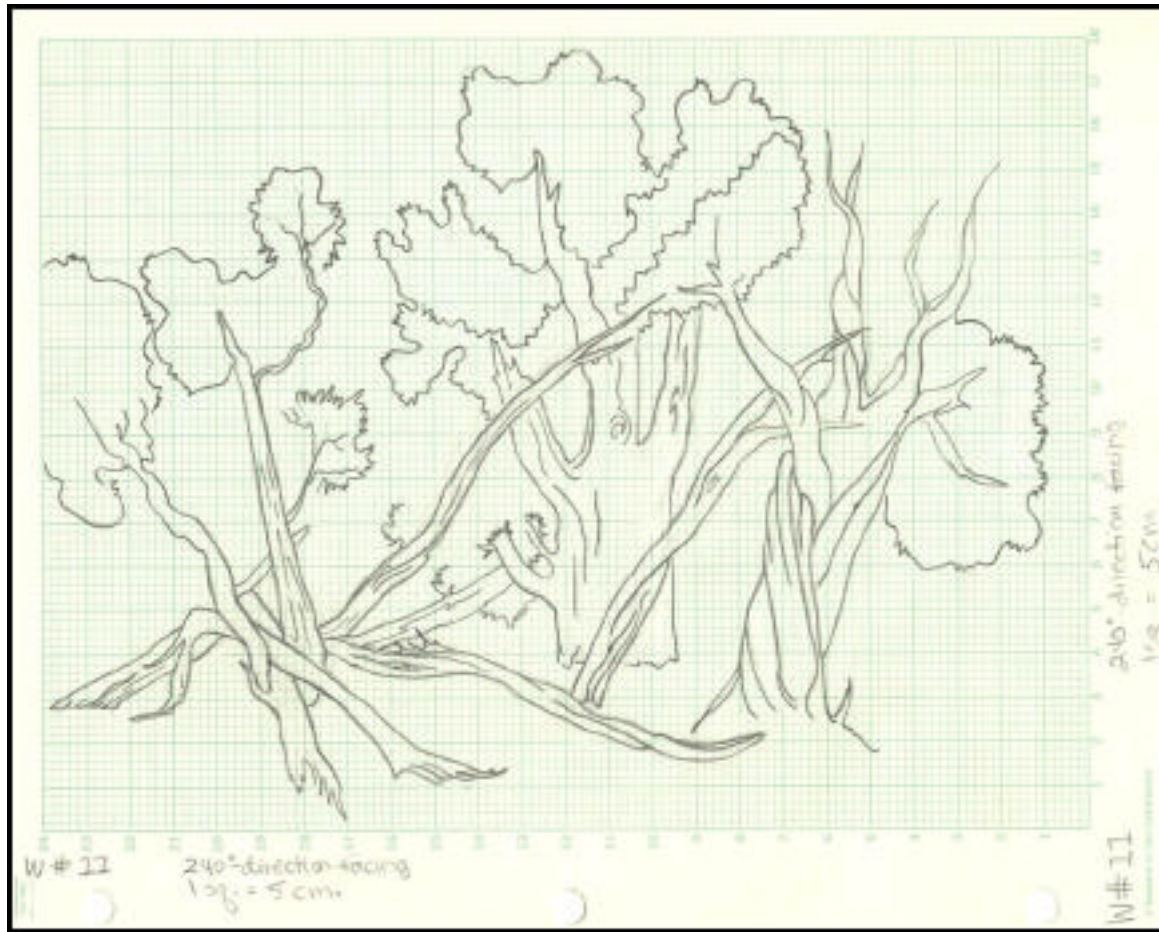


Figure 3a: Example of elevation drawings of standing wickets

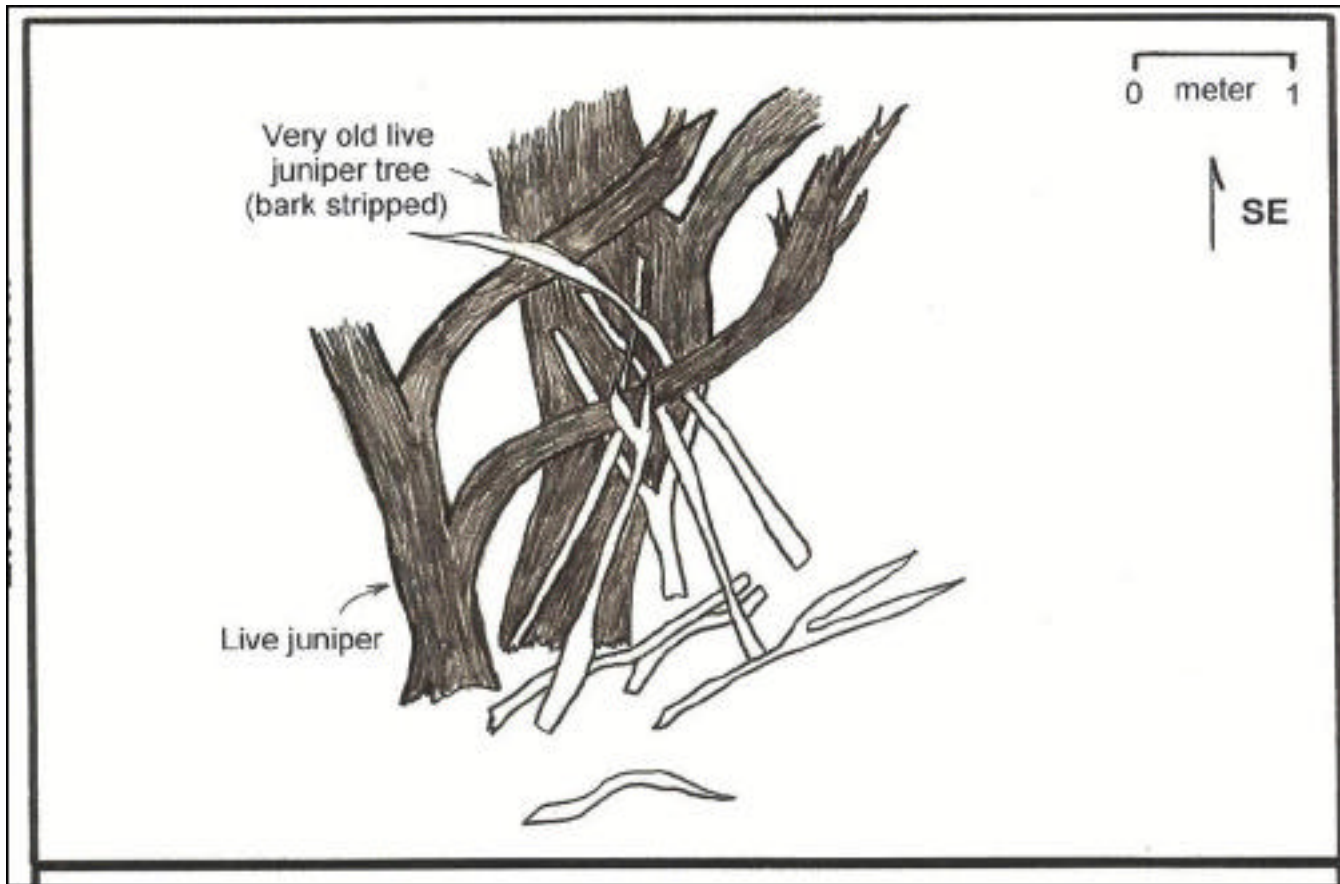


Figure 3b: Example of elevation drawings of standing wickips

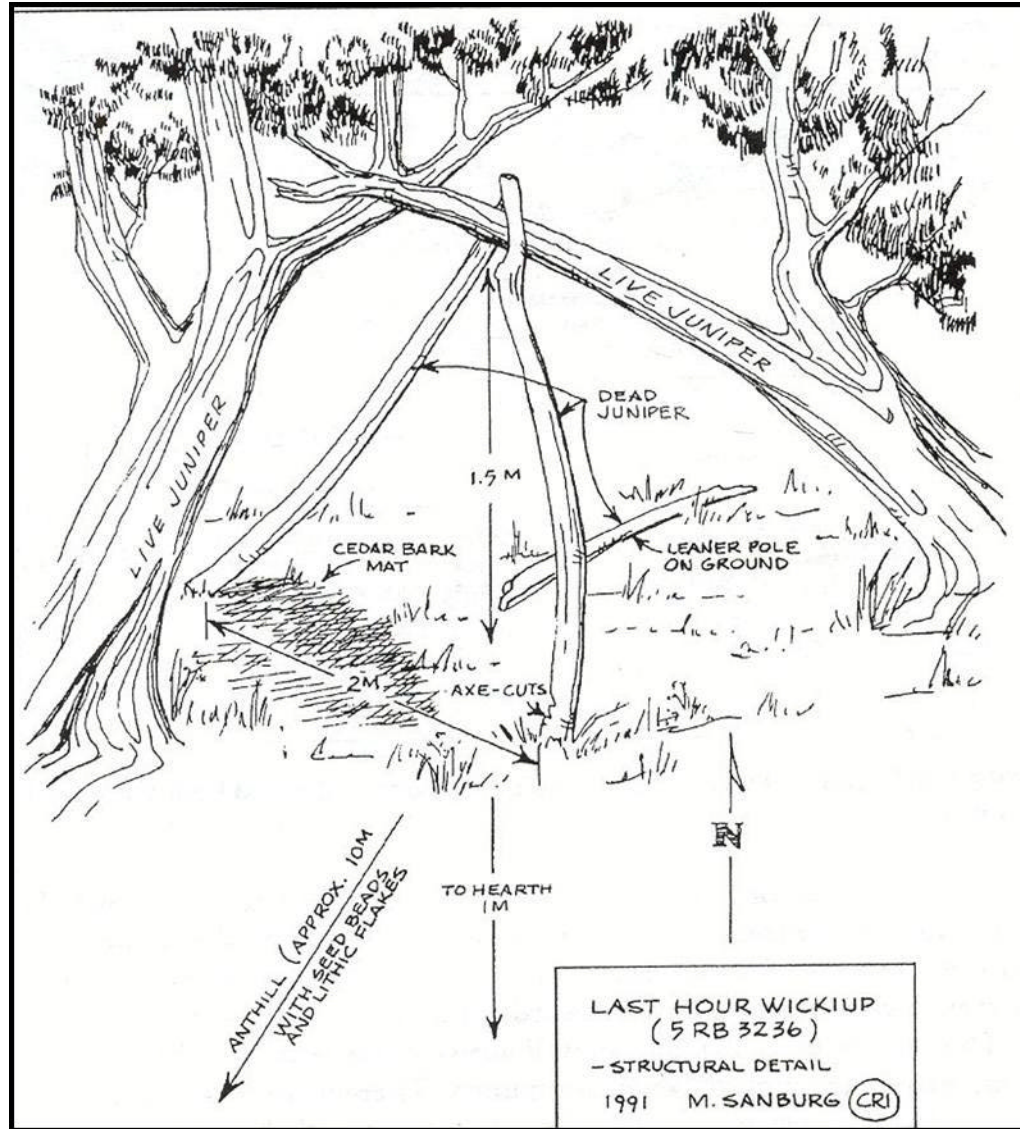


Figure 3c: Example of elevation drawings of standing wickiups

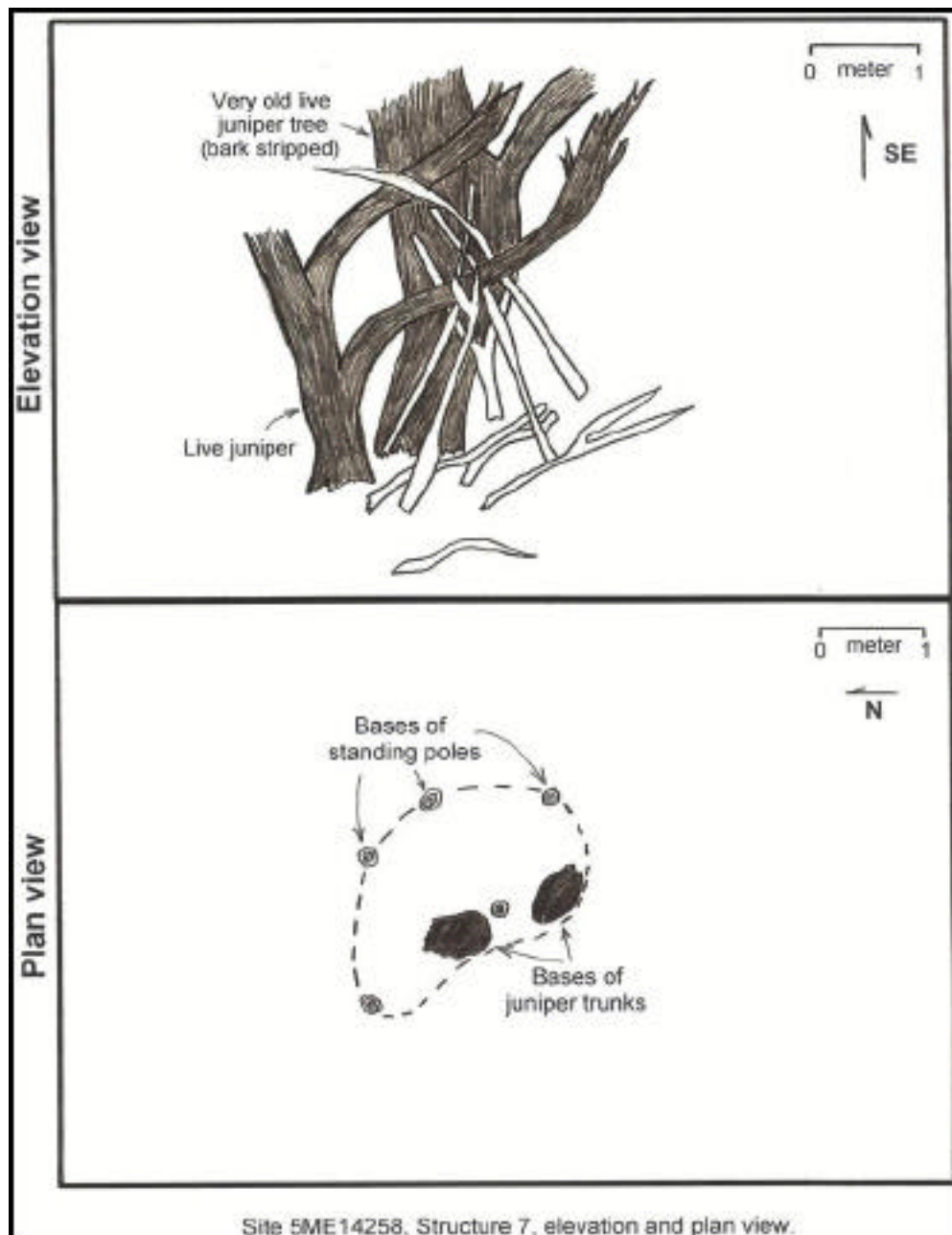


Figure 4: Example of a paired elevation and plan view of a standing wickiupP

Appendix C: Samples of Required and Recommended Forms for Aboriginal Wooden Structure Sites

Colorado Cultural Resource Survey Management Data Form C-1
Colorado Cultural Resource Survey Prehistoric Archaeological Component FormC-2
Aboriginal Wooden Structure Component Forms C-3

COLORADO CULTURAL RESOURCE SURVEY
Management Data Form
(page 1 of 4)

OAHPI400
Rev. 9/98

The *Management Data Form* should be completed for each cultural resource recorded during an archaeological survey. Exceptions to this are isolated finds and re-evaluations, neither of which require a *Management Data Form*. Please attach the appropriate component forms and use continuation pages if necessary.

1. Resource Number: _____ 2. Temporary Resource Number: _____

3. Attachments (check as many as apply)

- ___ Prehistoric Archaeological Component
- ___ Historic Archaeological Component
- ___ Historic Architectural Component Form
- ___ Sketch/Instrument Map (required)
- ___ U.S.G.S. Map Photocopy (required)
- ___ Photograph(s)
- Other, specify: _____

4. Official determination (OAHPI use only)

- ___ Determined
- ___ Determined Not Eligible
- ___ Nominated
- ___ Need Data
- ___ Contributing to NR Dist.
- ___ Not Contributing to NR Dist.

I. IDENTIFICATION

5. Resource Name: _____

6. Project Name/Number: _____

7. Government Involvement: Local ___ State ___ Federal ___

Agency: _____

8. Site Categories: Check as many as apply

Prehistoric: archaeological site ___ paleontological site ___

in existing National Register District? yes ___ no ___ name _____

Historic: archaeology site ___ building(s) ___ structure(s) ___ object(s) ___

in existing National Register District? yes ___ no ___ name _____

9. Owner(s)'s Name and Address: _____

10. Boundary Description and Justification: _____

11. Site/Property Dimensions: _____ m x _____ m Area: _____ m² (÷4047) _____ acres

Area was calculated as: Length x Width _____ OR (length X width) X .785 _____
rectangle/square ellipse

II. LOCATION

12. Legal Location

PM ___ Township ___ Range ___ Section ___ ___ 1/4 of ___ 1/4 of ___ 1/4 of ___ 1/4

PM ___ Township ___ Range ___ Section ___ ___ 1/4 of ___ 1/4 of ___ 1/4 of ___ 1/4

if section is irregular, explain alignment method: _____

Resource Number: _____
Temporary Resource Number: _____

Management Data Form
(page 2 of 4)

13. USGS Quad: _____ 7.5' 15' _ Date(s): _____ (attach photocopy)
14. County: _____ 15. Other Maps: _____
16. UTM Reference: Check your datum! NAD 27 _____ NAD 83 _____
A. _____; _____ mE _____ mN
B. _____; _____ mE _____ mN
C. _____; _____ mE _____ mN
D. _____; _____ mE _____ mN
17. Address: _____ Lot _____ Block _____ Addition _____
18. Location/Access: _____

III. NATURAL ENVIRONMENT

19. Topographic Feature(s)
- | | | |
|---|--|---------------------------------------|
| <input type="checkbox"/> mountain | <input type="checkbox"/> ledge | <input type="checkbox"/> playa |
| <input type="checkbox"/> hill | <input type="checkbox"/> terrace/bench | <input type="checkbox"/> talus slope |
| <input type="checkbox"/> tableland/mesa | <input type="checkbox"/> canyon | <input type="checkbox"/> alluvial fan |
| <input type="checkbox"/> ridge | <input type="checkbox"/> valley | <input type="checkbox"/> plain |
| <input type="checkbox"/> saddle/pass | <input type="checkbox"/> basin | <input type="checkbox"/> dune |
| <input type="checkbox"/> alcove/rockshelter | <input type="checkbox"/> floodplain | _____ |
| <input type="checkbox"/> cliff | <input type="checkbox"/> cutbank | _____ |
| <input type="checkbox"/> slope | <input type="checkbox"/> arroyo/gully | _____ |
20. Site Topographic Description (mention named landforms): _____

21. Site Elevation: _____ feet =(x .3048) _____ meters 22. Aspect: _____
23. Degree of Slope on Site: _____ 24. Soil Depth: _____ cm
25. Soil Description (character and color): _____

26. Depositional Environment:
- | | | |
|--|------------------------------------|-----------------------------------|
| <input type="checkbox"/> Aeolian | <input type="checkbox"/> Colluvial | <input type="checkbox"/> Residual |
| <input type="checkbox"/> Alluvial | <input type="checkbox"/> Moraine | <input type="checkbox"/> None |
| <input type="checkbox"/> Other, specify; _____ | | |
27. Nearest Water: name/nature: _____ distance: _____ m _____ ft.
28. Nearest Permanent Water: name: _____ distance: _____ m _____ ft.
29. Vegetation on Site (list predominant species): _____

30. Vegetation Associations/Communities Surrounding Site: _____

Resource Number: _____
Temporary Resource Number: _____

Management Data Form
(page 3 of 4)

IV. NATIONAL/STATE REGISTER ELIGIBILITY ASSESSMENT

31. Context or Theme: _____

32. Applicable National Register Criteria:

___ Does not meet any of the below National Register criteria

___ A. Associated with events that have made a significant contribution to the broad pattern of our history; or

___ B. Associated with the lives of persons significant in our past; or

___ C. Embodies the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or

___ D. Has yielded, or may be likely to yield, information important in history or prehistory; or

___ Qualifies under exceptions A through G.

Level of Significance: National ___ State ___ Local ___

33. Condition

a. Architectural/Structural

b. Archaeological/Paleontological

_____ Excellent

_____ Undisturbed

_____ Good

_____ Light disturbance

_____ Fair

_____ Moderate disturbance

_____ Deteriorated

_____ Heavy disturbance

_____ Ruins

_____ Total disturbance

34. Describe condition: _____

35. Vandalism: yes ___ no ___ describe: _____

36. National Register Eligibility Field Assessment:

Eligible ___ Not Eligible ___ Need Data ___

Statement of Significance/N.R.H.P. Justification: _____

37. Status in an Existing National Register District:

Contributing ___ Non-Contributing ___

38. National Register District Potential yes ___ no ___ discuss: _____

Resource Number: _____
Temporary Resource Number: _____

Management Data Form
(page 4 of 4)

V. MANAGEMENT AND ADMINISTRATIVE DATA

39. Threats to Resource: Water erosion___ Wind erosion___ Grazing___ Neglect ___
Vandalism___ Recreation___ Construction___ Other (specify): _____
comments: _____
40. Existing Protection: None___ Marked___ Fenced___ Patrolled___ Access controlled ___
other (specify): _____
41. Local landmark designation: _____ 42. Easement: _____
43. Management Recommendations: _____

VI. DOCUMENTATION

44. Previous Actions Accomplished at the site:
a. Excavations: Test___ Partial___ Complete___ Date(s): _____
b. Stabilization: Date(s): _____
c. HABS/HAER Documentation: Date(s) & Numbers: _____
d. Other: _____
45. Known collections/reports/interviews and other references (list): _____

46. Primary Location of Additional Data: _____
47. State or Federal Permit Number: _____ Collection Authorized: yes___ no___
Artifact Collection: Yes___ No___ Artifact Repository: _____
Collection Method: Diagnostics___ Grab Sample___ Random Sample___ Transect
Other (specify): _____
48. Photograph Numbers: _____ Negatives filed at: _____
49. Report Title: _____
50. Recorder(s): _____ Date(s): _____
51. Recorder Affiliation: _____
Phone Number: _____

NOTE: Please attach a sketch map, a photocopy of the USGS quad. map indicating resource location, and photographs.

COLORADO CULTURAL RESOURCE SURVEY
OAH P1401
Prehistoric Archaeological Component Form
(page 1 of 2)

Rev. 9/98

Use this form in conjunction with the Management Data Form. One of these forms should be completed for each cultural resource with a prehistoric component.

1. Resource Number _____ 2. Temporary Resource Number _____

3. Site Type _____

4. General Site Description: _____

5. Prehistoric Non-Architectural Features (note dimensions in meters)

<u>Map Ref.</u>	<u>Description</u>	<u>Construction Material</u>	<u>Dimensions</u>
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

6. Prehistoric Architectural Features (note dimensions in meters)

<u>Map Ref.</u>	<u>Description</u>	<u>Construction Material</u>	<u>Dimensions</u>
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

Resource Number: _____
Temporary Resource Number: _____

Prehistoric Archaeological Component Form
(page 2 of 2)

7. Artifact classes (flake, uniface, mano, scraper, etc.)

<u>Description</u>	<u>Material</u>	<u>Quantity</u>
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

The above artifact quantities reflect (check one)
 total quantity of artifacts observed at the site
 only those artifacts which were collected
 extrapolated quantities based on a sample of the remains
 other, specify _____

8. Chronology
A. Cultural Affiliation _____ Date _____
Dating Criteria _____
B. Cultural Affiliation _____ Date _____
Dating Criteria _____

9. Depth of Cultural Deposits _____
Based on: cutbank___ auger___ shovel/trowel test___ road cut___ other_____

10. Activities inferred from the remains _____

11. Is this site likely to yield information important in prehistory? Yes___ No___
If yes, identify research domains and supporting data _____

12. Recorder(s) _____ Date(s) _____

Aboriginal Wooden Structure Component Form

(Page 1 of 2)

Complete one form for each structure and attach to a completed
Colorado Cultural Resource Inventory Management Data Form and/or Prehistoric Archaeological Component Form.
(Check as many categories as apply.)

1. **Site Number:** _____ 2. **Temporary Site Number:** _____ 3. **Structure Number:** _____
4. **Location Co-ordinates:** _____
5. **Kind of Structure:** Wickiup____; 1-2 pole leaner____; Tree platform____; Other: _____
6. **Inferred Function of Structure:** Habitation____; Menstrual hut____; Sweatlodge____; Windbreak/lean-to____;
Hide processing/meat drying____; Burial platform____; Hunting blind____; Storage platform____; Sun shade____; Corral____;
Animal pen____; Drift fence____; Other _____
7. **Structure Format:** Freestanding____; Leaner____; Pull-down____; Suspended in tree____; Other _____
8. **Condition:** Standing____; Partially collapsed____; Collapsed____; Comments _____
9. **Total No. of Poles:**____; No. standing____; No. collapsed____; No. suspended by tree/other poles _____
10. **Range of Pole Length(s):**_____ to _____ m 11. **Range of Mid-Pole Diameter(s):**_____ to _____ cm
12. **Pole Ends** (number of each): Decayed____; Broken____; Axe cut____ (steel axe?____ stone axe?____); Sawn____;
Uprooted____; Burned____; Comments _____
13. **Interlocked/Structural Forked Poles** (number):____; Nature/Description _____
14. **Pole Wood** (number): Juniper____; Pinyon____; Aspen____; Lodgepole____; Other _____
15. **Pole Condition:** Sagging____; Crumbling____; Highly decomposed____; Lichens____; Moss____; Cracking across grain____;
Lengthwise grain separation____; Comments _____
16. **Species of Support Tree** (give number): Juniper____; Pinyon____; Ponderosa____; Other _____
17. **Diameter of Support Tree(s) Near Base:**____, _____, _____ cm 18. **Living/Dead:** _____
19. **Direction of Support Tree(s) Relative to Structure:** _____
20. **Cultural Modification of Tree:** Limbed within int. of structure____; Limbed elsewhere____; Axe cuts____;
Peeled bark____; Horiz. circumferential cut marks____; Other/describe _____
21. **Parts of Support Tree Utilized By Structure:** Trunk____; Limb(s)____; Limb(s) & trunk____; Poles supported by
other poles____; Partially broken bent down limbs____; Other _____
22. **Evidence of Covering** (describe): _____
23. **Entry Orientation** (if discernable): _____ 24. **Entry Dimensions** (h/w): _____ cm
25. **Floor/Platform Plan:** Circular____; Semi-circular____; Oval____; Rectangular____; Square____; Irregular____
26. **Dimensions:** Int. height (headroom) : _____ m; Diameter: _____ m;
or Length _____ m, Direction _____; Width _____ m, Direction _____;
27. **Area:** _____ m² [Calculations: Circle = 3.14 x radius-squared; Oval = length x width x .785]
28. **Floor Treatment:** Shallow basin____; Matting____; Packed____; Other _____;
Trowel tested? (describe) _____
29. **Hearth Type** (if discernable): Ash stain____; FCR concentration____; Slab-lined____; Rock-filled____;
Describe: _____
30. **Visible Dimensions of Hearth:** _____ cm 31. **Est. Potential for C-14 Date:** _____
32. **Location of Hearth:** Interior____; Exterior____; Comments: _____
33. **Location/Direction of Int. Hearth:** Center____; Other _____
34. **Distance/Direction of Ext. Hearth Relative to Center of Structure:** _____ m _____
35. **Rocks Associated with Structure** (give number): Interior _____; Exterior perimeter (e.g. base of poles) _____;
Other _____; Types & forms (eg. river cobbles, sandstone slabs, etc): _____;
Inferred purpose _____ . Comments _____

Aboriginal Wooden Structure Component Form

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Site Number: _____ **Temp. Number:** _____ **Structure Number:** _____

36. Associated Artifacts (describe): Inside structure _____;
Outside structure _____; Diagnostics _____

37. Estimated Age and/or Cultural Affiliation of Structure: _____

38. Imminent Threats to Structure: Collapse ___; Decay ___; Erosion ___; Fire ___; Vandalism ___; Grazing ___;
Ips beetle ___; Comments: _____

39. Degree of Slope at Structure: _____ Direction _____

40. Photos: B&W ___; Color prints ___; Slides ___; Digital ___; Roll/disc(s): exp. #s ___ On file at: _____

41. Add'l Documentation: Structure plan-view ___; Structure elevation drawing ___; Other _____
Attached ___; On file at _____

42. Collections (give numbers): Artifacts _____;
Dendro ___; C-14 ___; Soil ___; Other/describe _____ On file at _____

43. Recorder(s): _____ **Date(s)** _____ **Affiliation** _____

44. Additional Comments/Recommendations:

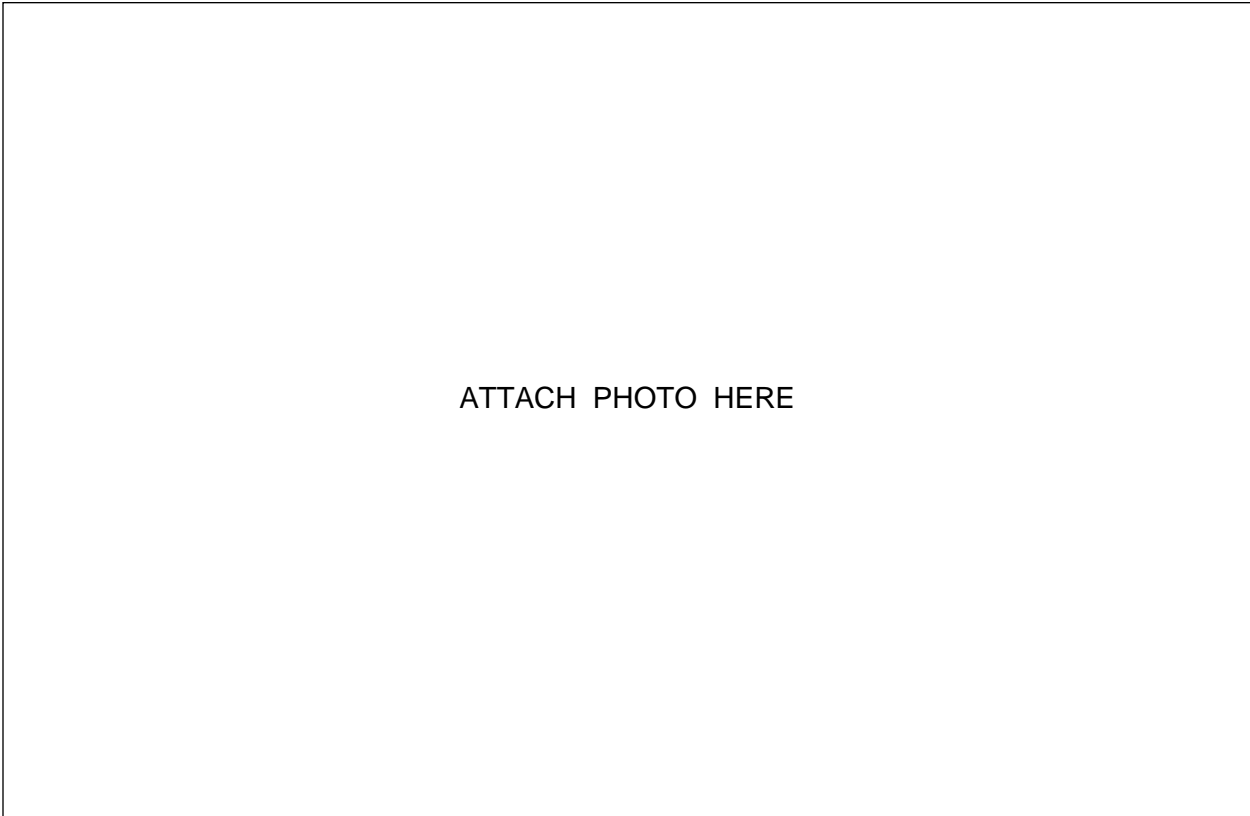


Photo Description: _____

Photo Direction: _____ **Date:** _____ **Photo Reference** (roll/exp): _____

**** Remember, this structure may be gone before it can be recorded again ****

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Appendix D: Recommended Field Techniques for Recording Wickiups and other Aboriginal Wooden Structures and Features

In addition to the standards of documentation normally applied when recording an archaeological site in the field, several supplemental techniques and enhanced levels of recordation are also recommended when recording ephemeral wooden structures. Some of the following suggestions may appear to be overstating the obvious, however far too often these simple rules are being overlooked by researchers in the field.

Photographic documentation

A familiar adage for photographing archaeological excavations, where the resource is being destroyed as it is being investigated, is: "*film is cheap!*" It is a useful admonition for documentary photography of wickiups and other wooden structures as well.

Thorough and comprehensive photographic records are essential for adequately documenting ephemeral wooden structures. Furthermore, the documentary value of such photography can be greatly enhanced by employing the following techniques, especially when recording free-standing or leaning poles:

1. Utilize limited depth of field (selective focus) to throw the vegetation in the distance out of focus in order to make the feature stand out from the background (see Plate 11, Appendix A-8). This can be accomplished by selecting a larger aperture on the camera setting to create less depth of field (remember, the smaller the number — for example f4 or f5.6, the larger the hole, the lesser the depth of field; that is, the less will be in focus).
2. If at all possible, photograph features (of all kinds) when the sun is behind the clouds or the structure is in full shadow. Most importantly, try to avoid having some of the feature elements (poles) in sun while others are in shade. Alternatively, some of the most informative photographs can be made by viewing the structure so as to silhouette the poles against a brightly lit background (see Plate 12, Appendix A-8). This is especially true when photographing the interiors of wickiups.
3. Take at least one photograph that shows the entirety of the support tree or trees (see Plate 13, Appendix A-9), and others taken from afar showing the topographic situation of the feature or site as a whole.
4. Take at least one photograph from the interior or backside of a structure. These often show more about the construction of the feature than all of the exterior shots. Again, silhouetting the poles against the sky can be quite revealing (see Plate 14, Appendix A-10). Try some lying on your back with a wide angle lens and shooting toward the sky.
5. Don't forget the details of inter-locked poles, forked-stick frameworks, axe marks, support trees, and so forth. A scale of some sort is especially valuable in close-ups.
6. When photographing collapsed structures, shoot from as high a vantage point as possible to accurately portray the arrangement of the downed poles (see Plate 15, Appendix A-11).

Elevation or profile drawings

A review of the existing literature, site forms, and project reports on standing wickiups reveals that perhaps the most valuable element of all in the documentation process is a carefully-executed elevation or profile sketch. By carefully drawing the individual poles and their relationship to each other and to the support tree (if any), the nature of a structure can be much more graphically illustrated than simply with photographs. Buckles (1971) and Martin (2004b) provide examples of effective wickiup elevation drawings in which the support tree(s) is shown in solid black and the individual feature poles are shown as outlines (see Figures 3a-c, Appendix B).

Plan views

Possibly the most difficult and time consuming aspect of recording wickiups is the creation of a plan view. Often the results of even a carefully constructed map ends up looking somewhat like a random pile of brush, where it is virtually impossible to differentiate between the base of the feature and the top, and between the limbs of a support tree and the structure poles themselves. One method for helping to create a useful plan view is to keep it simple by showing only the critical elements. Often it is best to simply map in the *base* of each standing pole, the entirety of each collapsed pole on the ground, and the base, or “footprint” of the support tree. In this way the outline or floor plan of a shelter becomes easily comprehensible (see Figure 4, Appendix B). Even if the entire length of standing poles is illustrated, it helps to graphically indicate each base where it contacts the ground by darkening in that contact point. The possible addition of a branch or two of the support tree can aid in demonstrating how a structure is leaning onto the tree.

As it is often difficult or impossible to suspend oneself above a structure for this task, sometimes it is helpful to physically lie down beneath the poles and work by looking upwards. A plumb bob with a long cord on it can prove invaluable when constructing these plan maps, especially when attempting to pinpoint the locations of the upper ends of standing or leaning poles.

Trowel tests.

If authorized by the contracting agencies involved, it is recommended that a small and carefully executed trowel test be conducted within the floor area of structures (at least through the overlying duff) for the purpose of ascertaining and recording the nature of the interior floor surface (excavated basin?, mat-covered?, packed earth?).

Collections

Also, when authorized, the collection of datable materials is of significant value in recording Protohistoric structures. To help address some of our most pressing research questions, a concerted is needed effort on the part of Colorado archaeologists in order to secure dendrochronological and radiocarbon samples of not only the wooden feature poles and hearth charcoal, but of culturally-altered trees, floor mat materials, etc. As discussed above, the scarred surfaces of culturally altered (“peeled”) trees offer particularly viable dendro opportunities. A BLM mandate is already in place in northwestern New Mexico for the collection, and processing, of dendrochronological cores or pole sections when extant wooden structures are encountered on survey — in their case usually forked-stick hogans and sweat lodges (Jim Copeland, personal communication, 1/31/05).

Regarding the typically small-in-diameter, and often heavily weathered, wickiup poles, it is often preferential to collect an entire cross section of the base of the pole as opposed to simply a core sample. If a cross section is to be collected, have an assistant firmly hold the pole to be sampled so as not to disturb the other poles, or the sample pole’s position in relation to the support tree. Use a sharp saw and work smoothly and evenly. A battery-powered jig or saber saw may create less potentially destructive vibration and shaking than a hand saw. If a core is to be collected from a standing pole it should be noted that often the interior surface, or the surface facing downwards, has been less weathered than that of the exterior and will possibly provide additional outside rings for analysis. As with all destructive actions such as this on a cultural resource, the location of the intrusion should be permanently marked with a metal or ceramic identifying tag.

As in excavation situations where cultural fill is left *in situ* for potential future investigations utilizing unforeseeable analytical techniques, materials from ephemeral structure sites should be collected and stored for similar potential developments. In a field where dogs are now being used to sniff out the locations of where human bodies decomposed thousands of years earlier, and a tablespoon of permafrost is producing DNA from a host of Pleistocene megafauna, we have to assume that we have not yet seen the end of the scientific possibilities for analyzing cultural resources, especially in such recent contexts as Protohistoric habitations. With this in mind it is possibly expedient to collect a bulk soil sample from the surface of particularly intact wickiup floors for macro and microbotanical analysis. Possibly even samples of the bark from the surface of support trees facing the interior of lean-to wickiups could prove valuable at some later date.

Full scale surface mapping

Thorough mapping of surface artifact distributions within and adjacent to extant Protohistoric wooden structures, and those from subsurface contexts as well, provides extremely valuable reserch data for the analysis of site structure at other open lithic sites where temporary shelters once existed but are now no longer evident. The value such mapping is greatly enhanced with the utilization of contemporary GPS-GIS mapping instruments and techniques.

Feature collection, stabilization, and reconstruction

Two examples of the wholesale collection of wooden features — a free-standing wickiup (Martorano et al 1999) and a tree platform (Gooding 1981) — are presented elsewhere in this report (see Annotated Bibliography, p. 23). The practical value of such efforts remains an open question, but this solution may be appropriate in some circumstances.

In situ stabilization or reconstruction attempts for aboriginal wooden structures, on the other hand, are not reported in the literature to our knowledge. It is implicitly understood that any efforts to stabilize or preserve wooden structures in the field offer only temporary mitigation, at best. The same can be said, however, of many other archaeological stabilization efforts, such as those on pictographs. Preservation techniques for exposed wooden structures obviously exist and are being employed on many kinds of cultural resources throughout the world. We suggest that this approach, at least theoretically, may have useful application in some, as yet undefined, circumstances and mention it here as an idea for further consideration and discussion..