Class I Cultural Resource Overview of the Bureau of Land Management's Uncompahgre Field Office, Western Colorado

by

Rand A. Greubel, Jaclyn Mullen, Matthew J. Landt, Jonathon C. Horn, and Alan D. Reed

Principal Investigator: Rand A. Greubel

Submitted by
Alpine Archaeological Consultants, Inc.
P.O. Box 2075
Montrose, Colorado 81402
(970) 249-6761

with contributions by

Carol Patterson

Prepared for
Bureau of Land Management
Uncompahgre Field Office
2505 South Townsend Ave.
Montrose, CO 81401

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ABSTRACT

The Bureau of Land Management's (BLM) Uncompahgre Field Office (UFO) is planning to prepare a resource management plan and an associated environmental impact statement for the four landscape units and one National Conservation Area (NCA) that compose the UFO area. The landscape units have been designated the North Fork of the Gunnison, the Ouray Area, the Uncompahgre Plateau, and the West End. The fifth *de facto* landscape unit is the Dominguez-Escalante NCA. Alpine Archaeological Consultants, Inc. was hired to prepare a Class I cultural resource inventory of the study area. The overall objective of the Class I inventory is to characterize the sites within the UFO, to develop a GIS database for site and previous inventory information, and to map areas of high, medium, and low sensitivity for cultural resources. Computerized databases with site and inventory data were obtained from the State and the BLM, and existing archaeological and historical literature was examined. For prehistoric cultural resources, site sensitivity maps were developed based on Factor Analysis statistics. Sensitivity maps for historic resources were based on actual site distributions and other factors important for historic occupation, as indicated in historical indices and maps of mining leases.

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CHAPTER 1. INTRODUCTION

The Bureau of Land Management's (BLM) Uncompahgre Field Office (UFO) plans to oversee the development of a Resource Management Plan (RMP) for four landscape units (LUs) and one national conservation area (NCA) that comprise the UFO area. A component of the RMP will be an environmental impact statement, which will evaluate the potential effects of implementing the management plan on natural and cultural resources. Before the RMP can be prepared, however, baseline cultural resource data must be compiled, analyzed, and presented in a useful manner. The BLM hired Alpine Archaeological Consultants, Inc. (Alpine) to conduct a Class I compilation and basic interpretation of baseline cultural resource data.

The project was conducted under the terms of GSA Contract GS-10F-0004S and Order No. L09PD00875 between the BLM and Alpine. Glade Hadden, archaeologist, of the BLM-UFO served as the Project Inspector. Bruce Krickbaum of the BLM-UFO served as the Contracting Officer's Representative. Rand A. Greubel served as Alpine's Principal Investigator for the project. The Class I overview report was authored by Rand Greubel, Jaclyn Mullen, Matthew J. Landt, and Jonathon C. Horn, with substantial sections derived from previous Class I overviews and research design documents authored primarily by Alan D. Reed and secondarily by Rachel Smith Gebauer (Reed and Smith Gebauer 2004; Reed et al. 2008a, b). In particular, considerable material in this document was taken from the research design and context for the Uncompahgre Plateau Archaeological Project (UPAP) (Reed and Smith Gebauer 2004), which overlaps considerably with the UFO Class I overview study area. Jaclyn Mullen and Matthew J. Landt, with the assistance of Seth Frame and Stephanie Dudash, were responsible for constructing the sensitivity model and maps. Jaclyn Mullen, assisted by Charles Reed and Jeremy Omvig, created the Access database for the project. Stephanie Dudash and Seth Frame of Alpine were in charge of Geographic Information System (GIS) tasks.

Study Area

The UFO is in western Colorado in portions of Mesa, Delta, Montrose, Ouray, Gunnison, and San Miguel counties (Figure 1). The UFO study area includes roughly 2,008,413 acres. The dominant physiographic feature of the study area is the Uncompahgre Plateau, which the four landscape units surround and encompass, with the exception of the extreme northwestern end, which is in the BLM-Grand Junction Field Office, and the higher elevations, which are on the Uncompahgre National Forest. The northern boundary of the study area is largely defined by the Mesa-Delta County line and Little Dominguez Canyon; the western boundary by the Utah-Colorado state line; and the southern boundary by a line roughly following Hamilton Mesa, Wilson Mesa, and the slopes below the northern edge of the Mount Sneffels Wilderness. The eastern boundary is complex, but essentially lies east of the East Muddy Creek drainage and Paonia Reservoir, skirts the lower edges of the western slopes of the West Elk Mountains, crosses the Black Canyon, and follows the Cimarron River. Private landholdings are interspersed throughout the study area, but are especially prevalent in the lower valleys where agriculture is possible.

As noted above, the UFO study area is divided into four landscape units and a fifth *de facto* landscape unit consisting of the southeastern half of the Dominguez-Escalante NCA (DENCA). The four principal landscape units, depicted in Figure 2, are as follows:

- The Uncompahgre Plateau, consisting of 398,312 acres—not including the portion of the Dominguez-Escalante NCA that falls within the landscape unit—but including Monitor, Roubideau, Coalbank, Dry Creek, and Horsefly canyons.

- The West End, consisting of 595,263 acres and comprising public lands south and west of the Uncompahgre Plateau in the Norwood, Paradox, Dolores River, and Gateway Canyon areas.

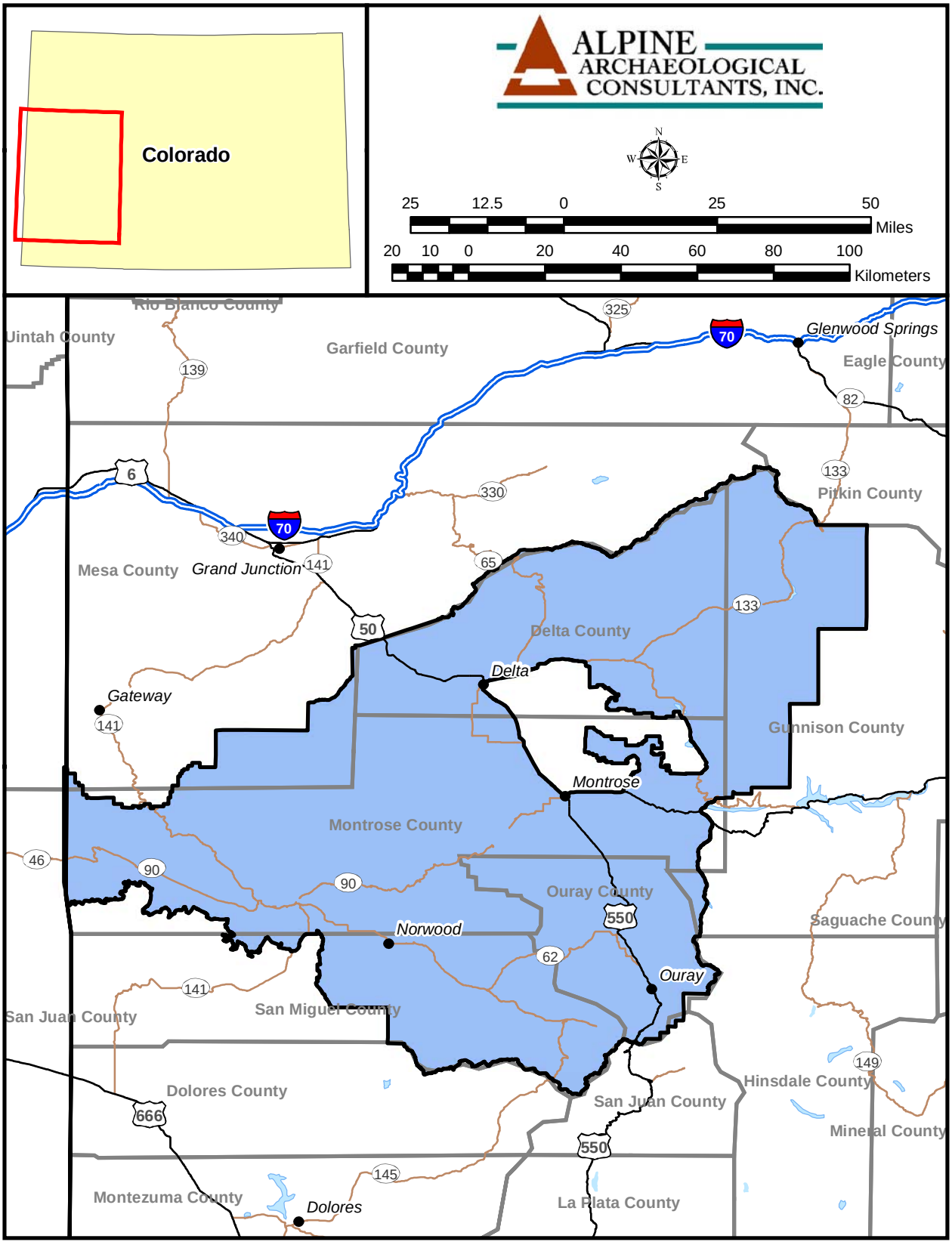


Figure 1. Location of the project area in western Colorado.

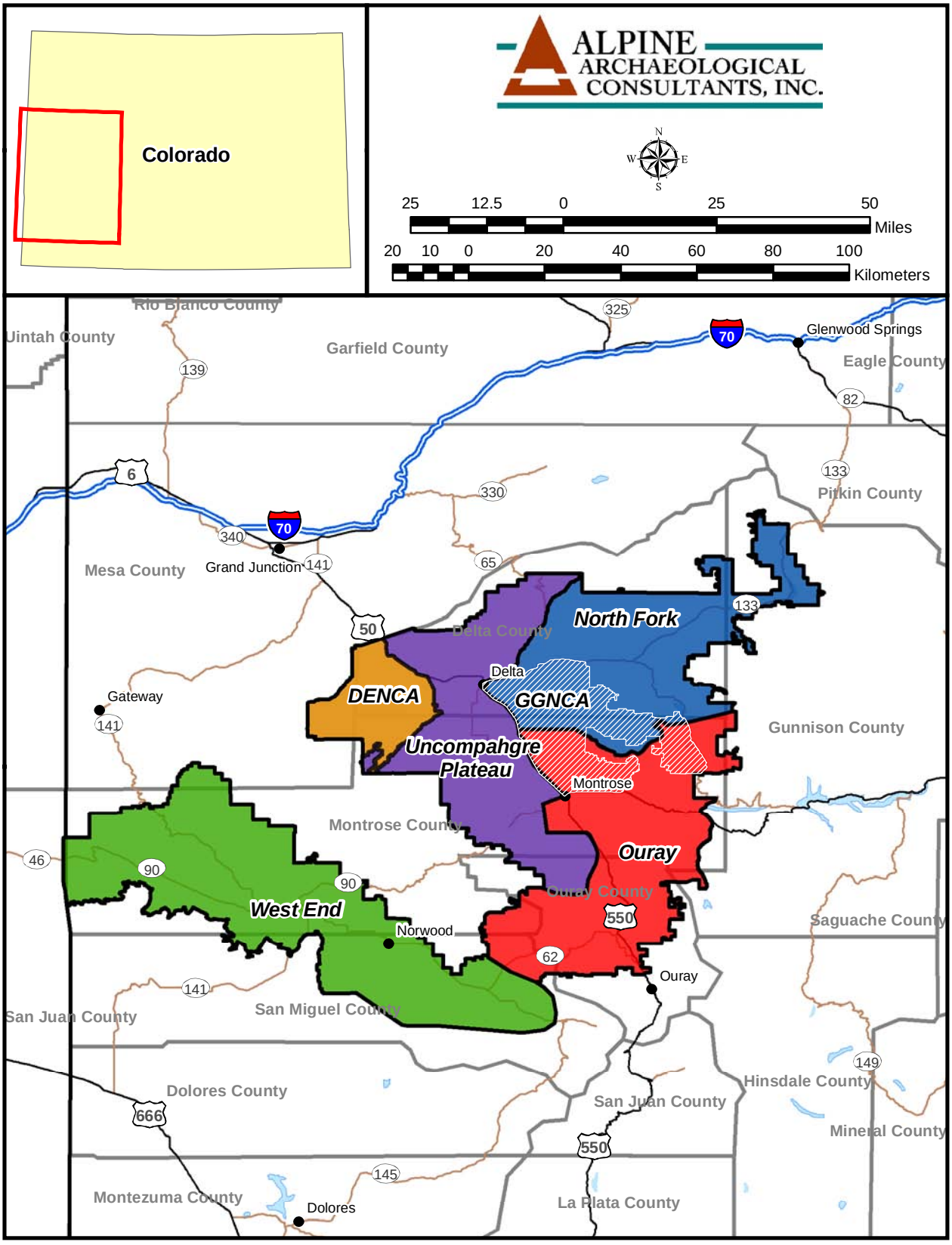


Figure 2. The Uncompahgre Field Office with the five landscape units defined for this study. The Gunnison Gorge NCA, shown as the hatched area between the North Fork and Ouray landscape units, is excluded from the study area.

- The North Fork of the Gunnison, consisting of 423,043 acres of public lands east and north of—and excluding—the Gunnison Gorge NCA.

- The Ouray area, consisting of 470,110 acres of public lands, excluding the Gunnison Gorge NCA, in the Montrose, Colona, Ridgway and Ouray localities.

As noted above, the portion of the DENCA landscape unit included in this study, consisting of 121,685 acres, comprises only the southeastern half of the entire NCA, the northwestern half of which is within the BLM-Grand Junction Field Office. Excluded from the study area are the 38,707 acres within the Gunnison Gorge NCA planning area and a total of 1,248,702 acres of USDA Forest Service lands within the RMP boundary. In the following overview, the terms "UFO study area" or "UFO Class I study area" refer to the lands encompassed by the five landscape units, rather than the larger RMP area.

Goals of the Study

According to the Statement of Work, the Class I overview is to consist of data gathering and database development, GIS database development and analysis, the synthesis of existing data into a narrative report, and the development of site sensitivity maps that reflect areas of high, medium, and low site densities. This report consists of a description of currently known UFO cultural resources, summarizes the efforts to produce site sensitivity maps, and discusses management options for cultural resources by defining use categories for particular classes of sites. The description of cultural resources includes interpretations of past human behaviors and identifies data gaps and corresponding lines of needed research. This section is meant to augment the prehistoric contexts developed for the Northern Colorado river basin (Reed and Metcalf 1999) and the UPAP study area (Reed and Smith Gebauer 2004) by focusing on archaeological data collected within the UFO. Site, survey, and GIS databases have been submitted separately. Site sensitivity models, though summarized and partially presented in this report, have been submitted in both paper and electronic formats to the BLM.

Study Methods

One of the first tasks to be implemented was the preparation of databases for all cultural resource sites, surveys, and excavations within the UFO. Site and survey databases were obtained from the UFO, with site and isolated find (IF) locations and survey areas provided as GIS shape files. Site and survey databases and GIS shape files of sites and surveys were then requested from the Colorado Office of Archaeology and Historic Preservation (OAHP). Not all sites and surveys had yet been entered into the BLM or OAHP computerized databases. For a small percentage (less than 10 percent) of the sites, paper site records and maps were inspected so that the data could be added to the computerized database and site locations digitized. A broad array of site data was collected.

The OAHP and BLM databases were merged and carefully cross-checked. Any discrepancies were resolved to create a single clean and complete database. As expected, the OAHP and the BLM data were sometimes not in agreement with regard to National Register of Historic Places (NRHP) eligibility and other data. In cases where NRHP eligibility evaluations differed, the most recent evaluation or determination was used. In cases where other types of data differed, either the more detailed data were used or the BLM data was retained. There are a total of 4,828 sites and 3,141 isolated finds (IFs) in the UFO database.

Historic research involved review of Alpine's extensive library of local and regional histories and historical documents and thorough inspection of Historic General Land Office (GLO) maps and historical indices (available at the BLM-UFO). The methods used to develop the site sensitivity maps are presented in Chapter 6 of this report.

The work conducted by Alpine for the UPAP study in 2003-2004 resulted in the compilation of a large body of data for both surface-recorded and excavated sites in the Uncompahgre Plateau area (Reed and Smith Gebauer 2004; Smith Gebauer 2004). The project also resulted in robust synthetic summaries of the prehistoric occupation of the region by temporal period and the formulation of important research questions for the Uncompahgre Plateau area. These data and summaries have been employed in this study as much as possible, often with little modification other than updating for projects that have been conducted since the UPAP study was completed. For example, important work that has been completed since UPAP includes a reanalysis of materials excavated from the Weimer Ranch sites (Greubel et al. 2006) and the recording, testing, and radiocarbon dating of 12 structural sites affiliated with the Gateway tradition (Reed and Emslie 2008). Finally, for this study Alpine relied upon a very complete and up-to-date database of radiocarbon dates from the UFO compiled by Dr. Claudia Berry for the Colorado Radiocarbon Database project.

Natural Environment

The Uncompahgre Plateau

As noted above, the study area is dominated by the Uncompahgre Plateau, part of the Colorado Plateau, which adjoins the Southern Rocky Mountains physiographic province (Fenneman 1931). Therefore, a description of the natural environment of the UFO study area might appropriately begin with a description of the Uncompahgre Plateau itself. Like much of the Colorado Plateau, the Uncompahgre Plateau is dominated by relatively high elevation and by extensive exposures of nearly horizontal beds of sedimentary rock. Precambrian metamorphic rocks and granites underlie the sedimentary formations. The sedimentary rocks, primarily composed of sandstone and shale, are primarily of Triassic, Jurassic, and Cretaceous age (Fenneman 1931; Tweto 1979). The Morrison, Dakota, and Summerville Formations are particularly extensive. The Uncompahgre Plateau represents a massive uplift, towering nearly 1,525 m (5,000 ft) above the Uncompahgre River Valley. The uplift is oriented northwest to southeast and is highest at its southeastern end, where it approaches 3,048 m (10,000 ft). One side of the plateau forms a relatively gradual, uniform slope to the northeast, whereas the southwestern side slopes more steeply and ruggedly. The northeastern side of the plateau is drained by the Gunnison and Uncompahgre rivers and the southwestern side is drained by the San Miguel and Dolores rivers and their tributaries. Secondary drainages are oriented in a trellis fashion.

Vegetation

Vegetation in the study area is variable and is, in a general sense, associated with elevation. Microenvironmental settings vary with respect to aspect, soil depth, precipitation, and other factors, so variation is greater than suggested by the broad vegetation zones commonly used to describe the plateau and adjoining areas. The broad vegetation zones are useful, however, for basic description. The crest of the Uncompahgre Plateau is within the Soil Conservation Service's (1972) Woodlands and Grasslands of Sub-Alpine Areas zone, which is dominated by stands of spruce and fir, lodgepole pine, and aspen. Parklands are often dominated by Thurber's fescue. This zone is surrounded by the Woodlands of the Lower Mountains zone, which is characterized by stands of ponderosa pine, Gambel oak, Douglas fir, blue spruce, white fir, and some aspen. Understory species include fescue, muhly, bluegrass, shrubs, and forbs. Lower on the flanks of the plateau is the Woodlands of the Intermountains zone. This zone is dominated by pinyon and juniper with wheatgrass, Indian ricegrass, bluegrass, shrubs, and forbs. The lowest elevations on the eastern side of the Uncompahgre Plateau are within the Shrublands of the Saltdeserts zone. Common plant species include big sagebrush, saltbushes, rabbitbrush, galleta, Indian ricegrass, and greasewood. Finally, the adjoining river valleys contain riparian plant communities dominated by cottonwood, willow, and a variety of shrubs, grasses, herbs, and aquatic plants such as cattail (Mutel and Emerick 1984). In general, the above description of vegetation suffices for the entire study area, although plant

distributions vary by topography and the highest-elevation species will not be present within the specific landscape units of the UFO, most of which lie below 8,500 ft (2,590 m).

Fauna

The Uncompahgre Plateau is rich in game animals, in part because vegetation zones are compressed into relatively small horizontal distances as a result of rapid increases in elevation. The same can be said for much of the surrounding area. Game can graze in the well-watered and lush highlands in the summer, then migrate relatively short distances down slope to more protected winter ranges in the valleys and on the lower slopes of the plateau. Mule deer are abundant in all areas except the lowest elevations, where antelope and desert bighorn are present, particularly along the Gunnison River valley. Elk are common. There is no historic evidence of bison on the Uncompahgre Plateau, but bison remains have been recovered from archaeological sites in the Cottonwood Creek drainage on the southwestern side of the plateau (Greubel et al. 2006; Lubinski 2005) and also from a rather late (i.e., Protohistoric or historic-era) context in the Montrose area (Rood 2010). Bison populations were also present north of the Colorado River (Meaney and Vuren 1993). The Scrublands of the Saltdeserts support jackrabbit. Cottontail rabbits are common in the pinyon and juniper woodlands, and snowshoe hare are common in the highest elevations. Common predators included black bear, coyote, mountain lion, and bobcat. Grizzly bear and wolves probably once roamed the area (Burt and Grossenheider 1976). Trout occur in the colder mountain streams, and pikeminnow, chub, and suckers historically inhabited the warmer waters of the major rivers. Important game birds available to prehistoric peoples included dusky grouse (formerly known as blue grouse), wild turkey, and Gambel's quail. As with the vegetation, the fauna described here are typically present in all of the landscape units encompassed by this study except for species that occupy only the highest elevations.

Climate

The following summary of the climate of the UFO is taken from Doesken et al. (2003). Because the climates of the four landscape units are similar due to proximity and comparable terrain and elevations, they are discussed together, with any differences noted. Climate in western Colorado in general is largely determined by elevation and topography, as it is elsewhere in the state. Compared to the mountainous central part of the state, precipitation is less and temperatures warmer. The winters in western Colorado, however, are typically colder but less variable than the eastern part of the state, though temperatures rarely drop below -10° F in the study area. Valleys, in particular, tend to experience relatively mild winters and receive abundant sunshine. In contrast, afternoon temperatures in the summer can exceed 100° F at elevations below 5,500 ft (1,676 m), but higher elevations remain relatively cool throughout the summer. The greatest amount of precipitation in western Colorado falls during the winter, with June being the driest month. Valleys average 8 to 14 inches of precipitation annually. Closer to the Utah state line in the westernmost portions of the study area, late summer and early fall can sometimes be the wettest time of the year. Table 1 lists the mean annual precipitation of seven towns within, or near, the study area, recorded over a 105-year period from 1900 to 2005 (http://www.wrcc.dri.edu/summary/climsmco.html).

Table 1. Mean Annual Precipitation at Key Locations Within or Near the UFO Study Area.

Location	Inches of Annual Precipitation
Norwood	15.1
Montrose	9.5
Paonia	14.0
Ridgway	17.2
Delta	7.9
Uravan	12.5
Gateway	11.3

The average annual number of frost-free days (i.e., the potential agricultural growing season) varies across the study by elevation, cold air drainage patterns, aspect, and other factors. In the Uncompahgre River valley between Montrose and Delta, the mean frost-free growing season ranges from 120 to 150 days. In surrounding upland areas—i.e., on the lower to middle elevations of the Uncompahgre Plateau and in the uplands adjoining the valley to the north and east—there are 90-120 consecutive frost-free days on average per year. In the surrounding mountains and on the crest of the Uncompahgre Plateau, 60-90 frost-free days can be expected. In the Norwood area, there is a 90 percent chance of at least 81 consecutive days above freezing, and a 50 percent chance of as many as 108 frost-free days. In contrast, in the San Miguel River canyon at Uravan there is a 90 percent chance of 144 consecutive days above freezing and a 50 percent chance of at least 168 consecutive frost-free days (http://www.wrcc.dri.edu/cgi-bin/cliMAIN.pl?conorw). Successful maize farming requires at least 120 frost-free days (Lipe et al. 1999), so it is clear that there are many locations within the study area that can, and potentially could in the past, support maize agriculture, as well as many places where corn cannot be grown. A more accurate way of calculating whether a particular location possesses an effective growing season for maize is known as Corn Growing Degree Days (CGDD). Briefly stated, CGDD is calculated as the difference between the daily mean temperature and the base temperature, "with one unit accumulated for each degree Fahrenheit that the average temperature is above the base temperature" (Lipe et al. 1999:23). The upper and lower limits of the measurement are the thresholds beyond which maize does not grow effectively. Maize needs a minimum of 2,500 growing degree days to mature (Lipe et al. 1999:23). Table 2 presents the mean annual CGDD for each of the same locations listed in Table 1. Thus, assuming sufficient moisture, maize farming is possible throughout the Uncompahgre River valley, the North Fork River valley, and across much of the West End landscape unit. It is not possible across many of the upland areas within the study area, such as the higher elevations of the Uncompahgre Plateau and in the mountains and highland valleys.

Table 2. Mean Annual Corn Growing Degree Days (CGDD) at Key Locations Within or Near the UFO Study Area (from http://www.wrcc.dri.edu/summary/climsmco.html).

Location	Mean Annual CGDD
Norwood	2514
Montrose	3133
Paonia	3016
Ridgway	2483
Delta	3522
Uravan	3804
Gateway	3902

Lithic Resources

The Uncompahgre Plateau and surrounding areas are relatively lithic-rich environments. Formations yielding a wide variety of knappable quartzite, orthoquartzite (silicified sandstone), silcrete, siltstone, mudstone, and chert include the Dakota, Burro Canyon, Morrison (particularly the Brushy Basin member), Summerville, and Green River Formations (Gerhardt 2001) (James Miller, personal communication to Rand Greubel). Materials outcrop in both primary (i.e., bedrock) and secondary contexts. Most of the material procured prehistorically was either picked up from secondary depositional contexts or pried from surface bedrock exposures, but true prehistoric quarries have been documented in the area, such as the "Flint Cave," a well-known bedrock mine that produced a fine-grained Burro Canyon silcrete (Hauser 2008; Richey and Hauser 2007).

Flakeable materials within the project area other than those noted above are less well known, but several areas within the UFO yield fine-grained, potentially flakeable basalt or other extrusive igneous stone, as well as conglomerates that may contain clasts of toolstone-quality chert

or quartzite. Moreover, rivers, streams, and valley terraces within or near the study area contain alluvial gravels and cobbles comprising a wide variety of transported lithic materials, some of which are suitable for tool manufacture. For example, a recent survey of regional lithic sources has identified cobbles of chert and quartzite from the Burro Canyon and Green River Formations, Kremmling chert, Belden Formation chert, and volcanic porcellanite of the Grouse Mountain Formation in Colorado River gravels (James Miller, personal communication to Rand Greubel). The easy availability of toolstone—much of it of very good quality—across much of the UFO and in areas not too far distant was undoubtedly of great importance to prehistoric people and likely played a significant role in structuring the seasonal mobility of individuals and groups in their efforts to replenish their supplies of lithic raw material.

A comprehensive lithic source study covering 170 lithic sources across the western United States, including many in western Colorado and adjoining regions, is currently being conducted by James Miller of the Dominguez Archaeological Research Group (DARG). It will eventually result in a master collection of lithic samples and a book with descriptions and photographs of the source materials. Miller's chapter on lithic resources in the 3rd edition of *Prehistoric Hunter-Gatherers of the High Plains and Rockies* (Kornfeld et al. 2010) is not only an excellent broad regional overview of lithic resources, but also clarifies terminology and provides geological definitions and descriptions of many types of siliceous or otherwise knappable toolstone.

Uncompahgre Plateau Landscape Unit

The Uncompahgre Plateau LU ranges in elevation from around 5,000 ft (1,524 m) to 9,120 ft (2,780 m) at its extreme northern end. Roughly half of the Uncompahgre Plateau LU (including the southeastern half of the Dominguez-Escalante NCA) is on the northeastern slope of the Uncompahgre Plateau, with the remainder encompassing the Uncompahgre River valley between Montrose and Delta, the adobe badlands north of Delta, and the lower slopes of the Grand Mesa extending from the Delta area to the Cedaredge area. The LU takes in the towns of Cedaredge, Olathe, and portions of Montrose and Delta.

The geology of the Uncompahgre Plateau has been described and the geology of the Grand Mesa, a small part of which which borders the Uncompahgre Plateau LU to the north, is described below under the North Fork of the Gunnison LU. The geology of the Uncompahgre River valley between Montrose and Delta consists of Mancos shale, Pleistocene gravels and alluviums, and Holocene-age alluvium.

As noted above, the drainage pattern of the northeastern slope of the Uncompahgre Plateau is trellis-like, with parallel canyons and smaller drainages flowing perpendicularly to the long axis of the plateau and draining into either the Uncompahgre River, which is tributary to the Gunnison River, or directly into the Gunnison. Major tributaries of the Uncompahgre River within the LU include the Horsefly Creek, Dolores Creek, Happy Canyon Creek, Spring Creek, Dry Creek, Piney Creek, Cushman Creek, and Roatcap Gulch. Other important streams in the LU include Roubideau Creek, which flows into the Gunnison River below Delta, and its tributaries, including Potter Creek, Monitor Creek, and Buttermilk Creek. All of these streams drain the northeastern slope of the Uncompahgre Plateau.

North Fork of the Gunnison Landscape Unit

The North Fork of the Gunnison LU ranges in elevation from around 5,000 ft (1,524 m) along the Gunnison River to over 9,200 ft (2,804 m) above Oak Mesa. The LU encompasses the East Muddy Creek valley north of Paonia Reservoir and most of the North Fork valley to as far west as Cedaredge, taking in portions of the lower slopes of the Grand Mesa and the West Elk Mountains. The LU includes the towns of Paonia, Hotchkiss, Orchard City, Crawford, and part of Delta.

The Grand Mesa, which borders the North Fork LU to the north, is a large basalt-capped mesa that rises to elevations of well over 10,000 ft (3,048 m) and extends generally westward in a Y-shaped configuration. The Grand Mesa is surrounded by three major rivers: the North Fork of the Gunnison to the south, the Gunnison to the west, and the Colorado to the north. The 60-to-150-m-thick basalt cap represents Tertiary-age extrusive volcanic flows (Yeend 1969). The surface and slopes of the mesa are mantled with glacial till, Pleistocene-age pediments, landslide debris, and Holocene-age valley fill (Yeend 1969). Extensive mass wasting is present below the base of the basalt caprock and along the slopes below. Formations underlying the basalt, and present either within or just outside of the northern LU boundary in the badlands and lower mesa slopes, include gravels and alluviums of Quaternary age, Cretaceous-age Mancos shale, Cretaceous-age Mesaverde Formation, and possibly Tertiary-age Wasatch Formation (including Ohio Creek conglomerate) (Tweto 1979). The near-surface geology within the North Fork LU consists of Quaternary-age gravels, alluviums, and landslide deposits (talus and thick colluvium); Cretaceous-age Mancos shale and Mesaverde Formation; and Tertiary-age Wasatch Formation (Tweto 1979).

The North Fork LU is drained principally by the North Fork of the Gunnison River. Major tributaries of the North Fork within the boundaries of the LU include East Muddy Creek, Anthracite Creek, Hubbard Creek, Terror Creek, Stevens Gulch, Minnesota Creek, Roatcap Creek, Love Gulch, Bell Creek, Jay Creek, Cottonwood Creek, Leroux Creek, and Alum Gulch. The Smith Fork is an important stream in the southern part of the LU, though it flows directly into the Gunnison River.

Ouray Area Landscape Unit

The Ouray Area LU ranges in elevation from around 5,360 ft (1,634 m) near Olathe to over 11,000 (3,353 m) atop Storm King in the east-central part of the LU. From north to south, the LU encompasses small portions of the lower slopes of the West Elk Mountains, part of the Black Canyon (though it is not part of the study area), much of the eastern side of the Uncompahgre River valley above Montrose, Buckhorn Lakes and a substantial portion of Cimarron Ridge, several prominent mesas west of Ridgway (Miller, Log Hill, and Hastings Mesas), Howard Flats, and Horsefly Peak. The LU encompasses the towns of Ridgway, Colona, and part of Montrose, and takes in a substantial portion of the southeastern end of the Uncompahgre Plateau.

The geology of the Ouray Area LU is complex; the following brief summary is derived from Tweto (1979). The valleys are dominated by gravels, alluviums, and landslide deposits of Quaternary age, as well as Cretaceous Mancos shale. The Cretaceous-age Mesa Verde Formation is also fairly widespread. Dakota sandstone and Burro Canyon Formation, also of Cretaceous age, are broadly exposed above the northern rim of the Black Canyon and to the northwest of Ridgway on the Uncompahgre Plateau. Relatively small exposures of Telluride Conglomerate of Eocene Prevolcanic Sedimentary Rocks (Cretaceous age) are present on Cimarron Ridge. The Ouray Area LU also includes exposures of Pre-ash Flow Andesitic Lavas, Breccias, Tuffs, and Conglomerates (igneous rocks of Tertiary age) along its eastern and southern margins. Finally, small areas of Laramide Intrusive Rocks are present within the LU.

The Ouray Area LU is drained principally by the Uncompahgre River. The major tributaries of the Uncompahgre within the boundaries of the LU include the East and West Forks of Dallas Creek, Pleasant Valley Creek, Cottonwood Creek, Coal Creek, Dry Creek, the North and South Forks of Alkali Creek, Cow Creek, Fisher Creek, McKenzie Creek, Chaffee Gulch, Billy Creek, Onion Creek, Beaton Creek, Dry Cedar Creek, and Happy Canyon Creek. Other important streams in the LU include several tributaries of the Gunnison River, such as the Cimarron River, which forms the eastern boundary of the LU, and Squaw Creek.

West End Landscape Unit

The West End LU ranges in elevation from around 4,800 ft (1,463 m) in the Dolores River canyon at the northwestern end of the LU to over 12,200 ft (3,719 m) in the mountains above the San Miguel River at its eastern end. From east to west, the LU encompasses Whipple Mountain and Diamond Hill, Wilson Mesa, Specie Mesa, part of Iron Springs Mesa, Beaver Mesa, a portion of Hamilton Mesa, Wrights Mesa, Mailbox Park, Maverick Draw, part of Naturita Ridge, the entire Paradox Valley, Davis Mesa, Carpenter Ridge, and Atkinson Mesa. The LU surrounds the towns of Sawpit, Placerville, Norwood, Naturita, Nucla, and Bedrock. It takes in portions of the lower slopes of the Uncompahgre Plateau.

The following summary of the geology of the West End LU is derived from Tweto (1979). Beginning at the eastern end, within the San Miguel River valley are exposed Cutler Formation of Permian age consisting of sandstone, siltstone, and conglomerate and Triassic-age Dolores Formation comprising red siltstone, shale, sandstone, and limestone-pellet conglomerate. The near-surface geology of the adjacent mesa tops largely consists of Dakota sandstone, Burro Canyon Formation, and Mancos shale, all of Cretaceous age. Also present in this area are isolated exposures—typically hills or small mountains such as Little Cone—of Middle Tertiary Intrusive Rocks. Further west in the Norwood-Naturita-Nucla area, the mesas are mantled with eolian deposits of Quaternary age. The Morrison and Summerville Formations are exposed in the deeper canyons and drainages in this area. In the Paradox Valley are modern alluvium and landslide deposits of Quaternary age. Adjoining the valley—primarily in the Carpenter Ridge area—are Pennsylvanian-age Hermosa Formation (sandstone, conglomerate, shale, and limestone, with some gypsum and salt deposits); Triassic-age Wingate sandstone, Chinle Formation, and Kayenta Formation; and smaller areas of Moenkopi Formation (Lower Triassic) and Cutler Formation (Lower Permian). Dominating the surrounding mesas are the usual Dakota sandstone and the Burro Canyon, Morrison, and Summerville Formations.

The West End LU is drained principally by the San Miguel River. Important tributaries of the San Miguel within the LU boundary include Bear Creek, Fall Creek, Leopard Creek, Specie Creek, Saltado Creek, Beaver Creek, Naturita Creek, the terminus of Horsefly Creek, Little and Big Bucktail Creeks, Dry Creek, Calamity Draw, Tuttle Draw, Coal Canyon, Tabeguache Creek, Hieroglyphic Canyon, and Atkinson Creek. The San Miguel flows into the Dolores River below its confluence with Atkinson Creek.

Important tributaries of Naturita Creek—which is probably the single most important tributary of the San Miguel River within the LU—include McKee Draw, Callan Draw, West Mud Springs Draw, Maverick Draw, Hamilton Creek (which forms a boundary of the LU along part of its length), Broad Canyon, and Bramiers Draw. Other important streams within the West End LU include East and West Paradox creeks, which, along with their tributaries, drain Paradox Valley and flow directly into the Dolores River; La Sal Creek, which drains the southeastern flank of the La Sal Mountains and likewise empties into the Dolores River, and a portion of Roc Creek. Finally, a series of smaller streams that drain much of the southwestern flank of the Uncompahgre Plateau are within the LU, flowing into Tabeguache Creek, Atkinson Creek, or directly into the Dolores River.

CHAPTER 2. PREVIOUS WORK

Previous Archaeological, Historical, and Ethnographic Work

A major goal of the UFO Class I overview project is to define and evaluate the nature and distribution of property types in the UFO study area, to identify properties of special significance, and to develop strategies for resource management and protection. Of key importance to these goals is a comprehensive compilation and summation of existing data from cultural resource surveys and site excavations in the study area. The compilation of existing data is particularly important because the resulting information forms the basis for the development of cultural sensitivity models and an environmental impact statement for the Uncompahgre RMP. This section discusses the methods used in the data compilation effort and summarizes the excavations and cultural resource inventories that have taken place in the study area. Also discussed in this chapter are regional context documents, archaeological syntheses, and important historical and ethnographic works covering or relevant to the UFO study area.

Archaeological Excavations

Excavated sites in the Uncompahgre RMP area were identified through a review of regional literature, through use of the OAHP "Compass" database (which can be queried for excavated sites under the "condition" variable), and through data compiled by Claudia Berry for the Colorado Radiocarbon Database project. A considerable number of sites within or near the study area have been subjected to some degree of archaeological excavation, not including shovel probes or test pits totaling less than 2 m^2 of excavation. The amount of digging varies widely, with more recent projects typically involving greater amounts of excavation. At least 105 sites within the UFO study area have undergone 2 m^2 or more of controlled excavation, or have been subjected to other major subsurface exploration such as backhoe trenching, or have had cultural features excavated during archaeological monitoring (Figure 3). An additional 10 excavated sites outside the UFO landscape units that comprise the study area (but within the RMP area) were identified. Table 3 and Table 4 list the excavated sites and Table 5 lists the sites where backhoe trenching, monitoring, or some form of limited data recovery has taken place. Several sites investigated by Dr. William Buckles for the Ute Prehistory Project are not included in Table 3 because less than 2 m^2 were excavated. On the other hand, the table includes several sites that may fall below the 2 m^2 threshold but, since this could not be ascertained with the available data, they were left in. The excavated sites are important because the data derived from these investigations have formed the foundation for studies of prehistoric chronology, subsistence, and technology in the region.

Most of the early excavation projects in the UFO (i.e., from the 1930s into the mid-1970s) were spurred by academic interest in the rich archaeology of the region. In contrast, excavations since the mid-1970s have typically been compliance projects conducted in response to Section 106 of the National Historic Preservation Act of 1966 (as amended). Aside from the published descriptions of the early excavation projects, excavated sites from years past have yielded collections of materials that frequently have not been well described, or from which additional data could be derived if analyzed using modern methods. A brief history of the major archaeological excavations in the study area, largely taken from Reed and Smith Gebauer (2004), is presented below.

One of the earliest archaeological investigations in the UFO study area were the surveys and test excavations conducted by the Woodburys in Paradox Valley in 1930 (Gleichman et al. 1982; McMahon 1997, 2000; McMahon and Bedingfield 2001; Woodbury and Woodbury 1932). George Woodbury was the curator of the Department of Archaeology and Ethnology at the State Historical Society of Colorado, a post previously held by Jean Jeancon (McMahon 2000). At least one of the sites (5MN191) documented by the Woodburys had been partially excavated by Jeancon and Frank Roberts, Jr. in 1924 (Jeancon 1924), but the results were never published (McMahon 2000). The Woodburys conducted "test" excavations at the site in 1931 (McMahon 2000; Woodbury and Woodbury 1932). In 1970, San Diego State University (SDSU) also excavated at 5MN191 (Wray

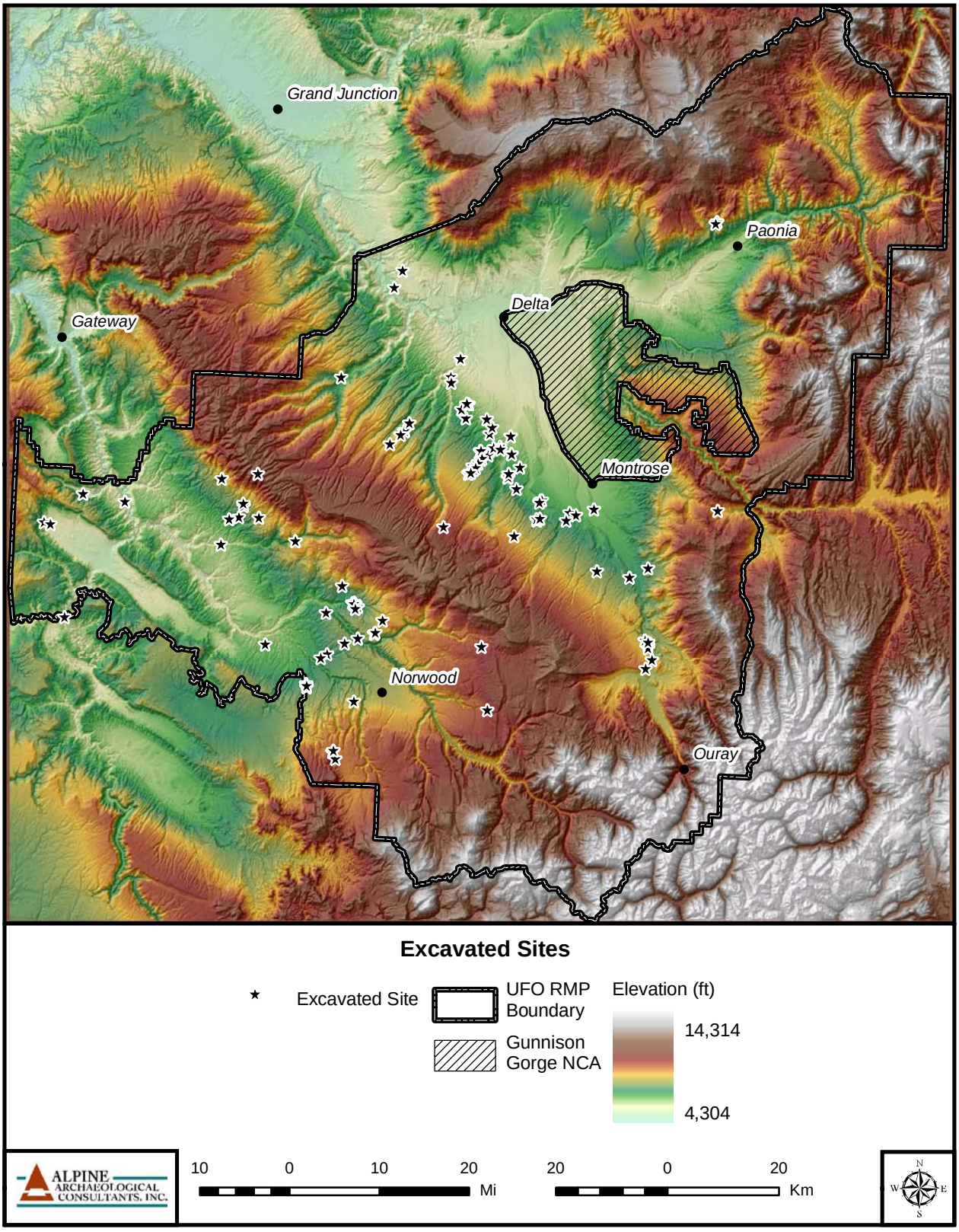


Figure 3. Map of the UFO showing the locations of excavated sites.

Table 3. Excavated Sites in the UFO Class I Study Area (i.e., within a Landscape Unit).

Site Number	Site Name	Landscape Unit	Site Type	Component	Excavation Report Reference
5ME1	Escalante Forks Petroglyph Site	Dominguez-Escalante NCA (DENCA)	Rock Art and Open Artifact Scatter	Unknown	Buckles 1971
5DT271	Roatcap Game Trail Site	North Fork	Open Artifact Scatter	Late Prehistoric	Baker 1991a
5DT771	Ridge Site	North Fork	Open Architectural	Unknown	Baker 1986
5MN48	Cornforth Site	Ouray	Open Artifact Scatter		Buckles 1971
5MN58	Caddy Site	Ouray	Open Artifact Scatter	Unknown	Buckles 1971
5MN847	Chief Ouray Home	Ouray	Historic Native American, Rural Agriculture – Farming	Ute, Mexican	Baker 1991b, 2005b
5MN1068	Zephyr Site	Ouray	Open Artifact Scatter	Archaic	Indeck and Kihm 1982
5MN4494		Ouray	Burial	Unknown	Sullivan 1998
5OR125	Cookie Tree Ranch	Ouray	Rural Agriculture - Ranching	Historic	Buckles et al. 1986
5OR126	Doelz Place	Ouray	Rural Agriculture – Farming	Historic	Buckles et al. 1986
5OR127	Cramer Farm	Ouray	Rural Agriculture – Farming	Historic	Buckles et al. 1986
5OR128	Alkali Place	Ouray	Rural Agriculture – Farming	Historic	Buckles et al. 1986
5OR129	Robert Israel Ranch	Ouray	Rural Agriculture – Ranching	Historic	Buckles et al. 1986
5OR139	Uncompahgre Ute Agency, 2nd Los Pinos Indian Agency	Ouray	Historic Native American, Government,	Ute	Baker 2004a, 2005a
5OR167		Ouray	Open Artifact Scatter	Unknown	Muceus and Lawrence 1986
5OR173	Alkali Creek School	Ouray	Settlements – School	Historic	Buckles et al. 1986
5OR178		Ouray	Unknown – Dugout	Historic	Buckles et al. 1986
5OR179		Ouray	Open Artifact Scatter	Formative	Muceus and Lawrence 1986
5OR182		Ouray	Open Artifact Scatter	Formative	Muceus and Lawrence 1986

Table 3. Excavated Sites in the UFO Class I Study Area (i.e., within a Landscape Unit).

Site Number	Site Name	Landscape Unit	Site Type	Component	Excavation Report Reference
5OR184	Slagle-Harbinson Place	Ouray	Rural Agriculture – Farming	Historic	Buckles et al. 1986
5OR188		Ouray	Industry – Mining	Historic	Buckles et al. 1986
5OR198		Ouray	Open Artifact Scatter	Formative	Muceus and Lawrence 1986
5OR209	Lee Homestead	Ouray	Rural Agriculture – Farming	Historic	Buckles et al. 1986
5OR211	William Lowery Farm	Ouray	Rural Agriculture – Farming	Historic	Buckles et al. 1986
5OR239	Crum Family Place	Ouray	Rural Agriculture – Farming	Historic	Buckles et al. 1986
5OR243		Ouray	Open Artifact Scatter	Formative	Muceus and Lawrence 1986
5OR317		Ouray	Open Artifact Scatter	Archaic	Muceus and Lawrence 1986
5OR418	Dallas Placer Co. Claim and Camp	Ouray	Industry – Mining	Historic	Buckles et al. 1986
5OR546	Racetrack and Dump	Ouray	Recreation	Historic	Buckles et al. 1986
5OR547		Ouray	Industry – Mining	Historic	Buckles et al. 1986
5OR1006	Log Hill Mesa Burial	Ouray	Burial	Unknown	Ambler 1998
5OR1062	Many Bullets Lodge	Ouray	Historic Native American	Ute	Baker 2005a
5OR1065	Jutten Lodges	Ouray	Historic Native American	Ute	Baker 2005a
5OR1194		Ouray	Open Artifact Scatter	Late Archaic, Formative	Eckman 2001
5DT2	Christmas Rockshelter	Uncompahgre Plateau	Sheltered Artifact Scatter	Paleoindian, Archaic, Formative	Buckles 1971
5DT853	Fools Hill Site	Uncompahgre Plateau	Open Artifact Scatter	Late Archaic, Fremont	Slessman et al. 2002
5MN2	Hauser Site	Uncompahgre Plateau	Sheltered Artifact Scatter	Protohistoric, Formative, Archaic	Buckles 1971; Lister and Sanburg 1963

Table 3. Excavated Sites in the UFO Class I Study Area (i.e., within a Landscape Unit).

Site Number	Site Name	Landscape Unit	Site Type	Component	Excavation Report Reference
5MN6	Frank's Shelter	Uncompahgre Plateau	Sheltered Artifact Scatter	Formative	Buckles 1971
5MN13[1]	McMillen Site	Uncompahgre Plateau	Open Artifact Scatter	Protohistoric	Buckles 1971
5MN14	Carlyle Shelter	Uncompahgre Plateau	Sheltered Artifact Scatter	Formative, Protohistoric	Buckles 1971
5MN15	Juanita's Shelter	Uncompahgre Plateau	Sheltered Artifact Scatter	Archaic	Buckles 1971; Reed and Smith Gebauer 2004
5MN17	Initial Site	Uncompahgre Plateau	Open Artifact Scatter	Formative	Buckles 1971; Conner and Davenport 1995; Hauser 2008
5MN18		Uncompahgre Plateau	Sheltered Artifact Scatter	Protohistoric	Buckles 1971
5MN20		Uncompahgre Plateau	Sheltered Artifact Scatter	Archaic, Formative	Buckles 1971
5MN27	Shavano Picture Rock	Uncompahgre Plateau	Open Artifact Scatter	Formative	Buckles 1971
5MN28	Shirley's Shelter	Uncompahgre Plateau	Sheltered Artifact Scatter	Formative	Buckles 1971
5MN30	Monte's Shelter	Uncompahgre Plateau	Sheltered Artifact Scatter	Protohistoric	Buckles 1971
5MN33	Cushman Creek Site	Uncompahgre Plateau	Open Artifact Scatter	Unknown	Buckles 1971
5MN34	Squint Site	Uncompahgre Plateau	Open Artifact Scatter	Formative	Buckles 1971
5MN35	Bedrock Pit Site	Uncompahgre Plateau	Open Artifact Scatter	Formative, Protohistoric	Buckles 1971; Hauser 2008
5MN36		Uncompahgre Plateau	Sheltered Artifact Scatter	Unknown	Buckles 1971
5MN37		Uncompahgre Plateau	Sheltered Artifact Scatter	Unknown	Buckles 1971
5MN38	Childer's Site	Uncompahgre Plateau	Open Artifact Scatter	Formative	Buckles 1971
5MN40	Shavano Springs Site	Uncompahgre Plateau	Open Artifact Scatter	Archaic, Formative, Protohistoric	Buckles 1971
5MN43	Sanburg Site	Uncompahgre Plateau	Sheltered Artifact Scatter	Archaic	Buckles 1971
5MN55	Roubideau Rim Site	Uncompahgre Plateau	Open Artifact Scatter	Formative	Buckles 1971

Table 3. Excavated Sites in the UFO Class I Study Area (i.e., within a Landscape Unit).

Site Number	Site Name	Landscape Unit	Site Type	Component	Excavation Report Reference
5MN57	Frank Bond Site	Uncompahgre Plateau	Open Artifact Scatter	Formative	Buckles 1971
5MN61	Long Draw Shelter (# 1 of 3)	Uncompahgre Plateau	Sheltered Artifact Scatter	Formative	Buckles 1971
5MN62	Long Draw Shelter (# 2 of 3)	Uncompahgre Plateau	Sheltered Artifact Scatter	Unknown	Buckles 1971
5MN63	Long Draw Shelter (# 3 of 3)	Uncompahgre Plateau	Sheltered Artifact Scatter	Unknown	Buckles 1971
5MN863	Moore Site	Uncompahgre Plateau	Sheltered Artifact Scatter	Formative and Archaic	Wormington and Lister 1956
5MN864	Casebier Site	Uncompahgre Plateau	Sheltered Artifact Scatter	Formative and Archaic	Wormington and Lister 1956
5MN1365	Duckett Draw Site	Uncompahgre Plateau	Isolated Feature	Late Prehistoric, Euro-American	Horvath 1980
5MN1920		Uncompahgre Plateau	Open Artifact Scatter	Late Prehistoric	Davis 2000; Eckman et al. 2001
5MN2341	Harris Site	Uncompahgre Plateau	Sheltered Artifact Scatter	Archaic and Protohistoric	Horn and Greubel 1997; Tucker and Society 1989
5MN2538		Uncompahgre Plateau	Open Artifact Scatter	Ute	Moore 2008
5MN3858		Uncompahgre Plateau	Sheltered Camp, Historic Camp	Unknown	Reed 2001
5MN3859	Coalbank Canyon Site	Uncompahgre Plateau	Open Artifact Scatter, Historic Artifact Scatter	Archaic, Formative, Historic Native American	Kalasz et al. 2001b
5MN3861		Uncompahgre Plateau	Open Artifact Scatter	Archaic, Protohistoric	Slessman and Davies 2001
5MN3876	Transfer Road Hamlet	Uncompahgre Plateau	Open Architectural	Formative	Kalasz et al. 2001a
5MN3887		Uncompahgre Plateau	Open Artifact Scatter	Unknown	Eckman et al. 2001
5MN191	Wray Mounds, Paradox Pueblo, Wray Hill, Wray ranch, Paradox 1	West End	Open Architectural	Basketmaker III, Freemont, Pueblo?	McMahon 1997, 2000; McMahon and Bedingfield 2001; Reed and Metcalf 1999
5MN367	Roc Creek	West End	Open Architectural	Gateway	Brandau and Noakes 1978
5MN368	Battleship (Weimer Ranch)	West End	Open Architectural	Formative	Crane 1977, 1978; Greubel 2006; Greubel et al. 2006; Greubel et al. 2009

Table 3. Excavated Sites in the UFO Class I Study Area (i.e., within a Landscape Unit).

Site Number	Site Name	Landscape Unit	Site Type	Component	Excavation Report Reference
5MN517	Hill I (Weimer Ranch)	West End	Open Architectural	Formative	Crane 1977, 1978; Greubel 2006; Greubel et al. 2006; Greubel et al. 2009; McMahon and Bedingfield 2001
5MN652	Middle Hill (Weimer Ranch)	West End	Open Architectural	Formative	Crane 1977, 1978; Greubel 2006; Greubel et al. 2006; Greubel et al. 2009
5MN653	Wagon Bend (Weimer Ranch)	West End	Open Architectural	Formative	Crane 1977, 1978; Greubel 2006; Greubel et al. 2006; Greubel et al. 2009; McMahon and Bedingfield 2001
5MN654	Cottonwood Pueblo (Weimer Ranch; probably Huscher's site "HHR")	West End	Open Architectural	Formative	Crane 1977, 1978; Greubel 2006; Greubel et al. 2006; Greubel et al. 2009; McMahon and Bedingfield 2001
5MN890	Tabeguache Cave II	West End	Sheltered Artifact Scatter	Formative	Hurst 1943, 1944, 1945; Stiger 1994
5MN915	Dolores Cave	West End	Sheltered Artifact Scatter	Basketmaker III	Hurst 1947
5MN1609	Tabeguache Pueblo	West End	Open Architectural	Formative	Hurst 1946; Reed and Emslie 2008
5MN3760		West End	Open Artifact Scatter	Formative	Conner and Hutchins 1992
5MN4082		West End	Open Artifact Scatter	Archaic, Formative, Protohistoric	Slessman et al. 2001
5MN4253	Schmidt Site	West End	Wickiup	Formative, Protohistoric	Greubel 2005; Greubel and Cater 2001
5MN4270	Aldasoro Site	West End	Open Artifact Scatter	Protohistoric	Greubel and Reed 2001
5MN4706	Bassnet Ranch Cave Site	West End	Sheltered Architectural	Formative	McMahon 1997; Woodbury and Woodbury 1931
5MN7006		West End	Open Artifact Scatter	Archaic	Honeycutt and Fetterman 2005
5MN7720	Weimer IV (Weimer Ranch)	West End	Open Architectural	Late Archaic, Formative	Crane 1977, 1978; Greubel 2006; Greubel et al. 2006; Greubel et al. 2009
5MN7721	Creek Knoll (Weimer Ranch)	West End	Open Architectural	Formative	Crane 1977, 1978; Greubel 2006; Greubel et al. 2006; Greubel et al. 2009
5SM2425	Simpson Wickiup Site	West End	Wickiup	Archaic, Formative, Protohistoric	Greubel 2001a, 2005

1 Buckles (1971) does not indicate how much was excavated; it may have been less than 2 m^2.

Table 4. Excavated Sites in the Uncompahgre RMP Area outside of the UFO Study Area (i.e., not within a Landscape Unit).

Site Number	Site Name	Landowner	Site Type	Component	Excavation Report Reference
5OR585.34	Vanoli Site, Goldbelt Theater, Goldbelt Bar and Grill	Private	Historic Brothel	Euroamerican	Blee 1991
5OR965	Chief Ouray Home	Private	Historic Native American	Ute	Baker 1991b, 2004b
5SM2423	Broken Leg Site	San Juan National Forest	Open Artifact Scatter	Paleoindian, Formative	Firor 2001
5MN41	Lee Ranch Wickiups	Uncompahgre National Forest	Wickiups	Protohistoric	Buckles 1971
5MN519	Cottonwood Cave	Uncompahgre National Forest	Sheltered Artifact Scatter	Formative	Hurst 1948a, b; Stiger and Larson 1992
5MN868	Tabeguache Cave	Uncompahgre National Forest	Sheltered Artifact Scatter	Formative	Hurst 1940, 1941, 1942; Stiger 1994
5MN3462	Jeff Lick Site (HJL)	Uncompahgre National Forest	Open Architectural	Formative	Currit 1992; Huscher and Huscher 1943; Huscher and Huscher 1939; Reed and Emslie 2008
5MN3541		Uncompahgre National Forest	Open Artifact Scatter	Archaic	Eckman et al. 2001
5SM2578	Fallen Deer Site	Uncompahgre National Forest	Open Artifact Scatter	Formative	McDonald 1998
5MN2628	Oak Hill Site	Uncompahgre National Forest, Private	Open Artifact Scatter	Formative, Protohistoric	Cater 2001

Table 5. Sites Subjected to Backhoe Trenching, Extensive Monitoring, or Limited Data Recovery in the UFO Class I Study Area.

Site Number	Site Name	Landscape Unit	Site Type	Component	Excavation Report Reference
5MN44[1]	Monitor Creek Wickiup	Uncompahgre Plateau	Wickiup	Protohistoric	Buckles 1971
5MN3866[2]		Uncompahgre Plateau	Open Artifact Scatter	Unknown	Eckman et al. 2001
5MN3880[3]		Uncompahgre Plateau	Open Artifact Scatter	Archaic, Formative	Eckman et al. 2001
5MN3881[2]		Uncompahgre Plateau	Open Artifact Scatter	Formative	Eckman et al. 2001
5MN3883[2]		Uncompahgre Plateau	Open Artifact Scatter	Formative, Euro-American	Eckman et al. 2001
5MN3888[4]		Uncompahgre Plateau	Open Artifact Scatter	Formative	Eckman et al. 2001
5MN4240[2]		Uncompahgre Plateau	Open Artifact Scatter	Unknown	Eckman et al. 2001
5MN273[1]		West End	Open Artifact Scatter	Unknown	Eckman et al. 2001
5MN3001[5]		West End	Open Artifact Scatter	Formative	Moore 2008
5MN4081[1]		West End	Open Artifact Scatter	Formative	Eckman et al. 2001
5MN4255[2]		West End	Open Artifact Scatter	Archaic, Protohistoric	Eckman et al. 2001
5SM2424[2]		West End	Open Artifact Scatter	Archaic	Eckman et al. 2001
5SM2426[6]		West End	Open Artifact Scatter	Formative	Eckman et al. 2001
5SM2427[6]		West End	Open Architectural	Archaic, Formative	Eckman et al. 2001
5SM2457[2]		West End	Open Artifact Scatter	Unknown	Eckman et al. 2001

1 One cultural feature was excavated.
2 Backhoe trenches were excavated across these sites prior to pipeline construction.
3 Two cultural features were excavated during monitoring of pipeline construction.
4 A backhoe trench was excavated across the site and three cultural features were excavated prior to pipeline construction.
5 Blading of an access road across the site was monitored by an archaeologist.
6 A backhoe trench was excavated across the site and two cultural features were excavated prior to pipeline construction.

Mounds or Paradox 1) but the results were never published, beyond a brief article by Kasper (1977). The documentation and artifacts from the SDSU work were largely destroyed in a fire (McMahon 2000), though it is rumored that some of the materials survived and have resurfaced (Todd McMahon, personal communication to Rand Greubel, 2010). Metropolitan State College of Denver also conducted limited excavations at Paradox Valley sites in 1973; this work likewise was never published. The Paradox Valley sites include above-ground masonry structures, pithouses, and possibly jacal structures and have yielded Puebloan ceramics (Kasper 1977; McMahon 1997, 2000; Woodbury and Woodbury 1932). Collectively, they seem to represent a substantial prehistoric farming community of possible Puebloan origin, though their cultural affiliation has yet to be satisfactorily resolved. Of a select group of the most highly significant Formative-era sites in the UFO study area, the open architectural sites of the Paradox Valley are the most understudied.

Other early professional excavations in the project area were conducted in the late 1930s by Betty and Harold Huscher of the Colorado Museum of Natural History, C. T. Hurst of Western State College, and H. Marie Wormington, also of the Colorado Museum of Natural History. The Huschers focused their research on prehistoric architectural sites in west-central Colorado. These sites commonly had circular masonry structures, some Anasazi pottery and, occasionally, corn macrofossils. They excavated several sites near the project area and others elsewhere in the region. At least two of the sites—the Harvey Place Hogan (site HH) and the Middle Fork (of the Escalante) Hogans (site HMF)—are outside of the UFO project area on the Uncompahgre National Forest (though the Harvey Place Hogan may be on a small private inholding within the forest). Three other sites excavated by Huscher—designated HSP, HBL, and HMH—are either within the UFO study area or just to the north of it in Mesa County (Huscher and Huscher 1943). The Huschers suggested that the masonry architectural sites represented the remains of Athapaskan immigrants en route to their historic homelands in the Southwest (Huscher and Huscher 1943). It is now understood that most, if not all, of these sites are Formative-period habitations related to the Gateway tradition as defined by Alan Reed (1997). The Gateway tradition has recently been reexamined by Bradford Andrews, Rand Greubel, Alan Reed, and others in a series of reports, papers, and a published article (Andrews 2006; Andrews and Greubel 2007; Greubel 2006, 2007; Greubel et al. 2006; Greubel et al. 2009; McMahon 2007; Reed 2005, 2007a; Reed and Emslie 2008; Reed 2007b; Varien 2007).

C. T. Hurst began nearly a decade of excavation at rockshelter sites and sites with architecture reminiscent of Puebloan habitations in western Montrose County. The rockshelter sites, such as Tabeguache Caves I and II, Cottonwood Cave, and Dolores Cave, yielded corn and other items that indicated a Basketmaker II-like occupation (Hurst 1940, 1941, 1942, 1943, 1944, 1945, 1946, 1947, 1948a, b; Hurst and Anderson 1949). Recent chronometric dates from these sites confirm early Formative-era occupations (Stiger 1994, 2001; Stiger and Larson 1992). The architectural sites, namely, Cottonwood and Tabeguache Pueblos, included rectangular masonry rooms and Anasazi pottery. Ceramic cross-dating indicated that these sites were occupied more recently than the primary occupations at the cave sites—between A.D. 900 and 1050.

H. Marie Wormington excavated the Casebier and Moore sites southwest of Delta, Colorado, in 1938 and 1939. These sites, which are both within the UFO study area, are rockshelters that had been discovered by local amateur archaeologists. The resulting data were combined with data from the nearby Taylor Site to serve as the basis for Wormington's dissertation (see Wormington and Lister 1956). In the early 1950s, the Denver Museum of Natural History and the University of Colorado collaborated on a second phase of excavations, focusing on sites northwest of the UFO study area area. Data from the two phases of investigation provided the basis for the definition of the Uncompahgre complex (Wormington and Lister 1956). The Uncompahgre complex was thought to represent a localized variant of Jenning's (1953) Desert Culture, defined in the Great Basin. Artifact types thought to be unique to the Uncompahgre complex included "Uncompahgre Scrapers," adze-like scrapers, and polished and shaped stone spalls (Wormington and Lister 1956).

Academic interest in the region's prehistoric record continued in the early 1960s with the initiation of the Ute Prehistory Project. This project was conducted by the University of Colorado, under the overall direction of Robert Lister. William G. (Bill) Buckles was in direct charge of the project. Buckles and his associates investigated 17 rock art sites and excavated 39 sites on the eastern flank of the Uncompahgre Plateau, several of which are listed in Table 3. Buckles' excavations were not extensive compared to more recent data recovery projects, ranging between 1 to 24 m^2 in most cases. Buckles' resulting dissertation included an extensive analysis of the region's rock art and prehistoric artifacts (Buckles 1971). Although few chronometric dates were obtained, a phase sequence was developed for the region's archaeology. The overall objective of tracing Ute prehistory was not realized but the Uncompahgre complex, as originally defined by Wormington and Lister (1956), was refined. The artifact types described by Wormington and Lister as diagnostic of the complex were found to not be unique to the region. Buckles's dissertation has had a major impact on the region's archaeology, in part because of the huge volume of data presented, but also because of the thoroughness of his research and the thoughtfulness of its interpretations.

The Weimer Ranch sites are on private and BLM land on the southwestern flank of the Uncompahgre Plateau along Cottonwood Creek, a tributary of the San Miguel River. The sites were described briefly by the Huschers as HHR (Huscher and Huscher 1943:19-21). They were given more serious archaeological attention in 1947 and 1948, when, as noted above, C.T. Hurst of Western State College excavated two areas of Cottonwood Pueblo, one of the largest of the sites (Hurst 1948a). From 1974 to 1977, Metropolitan State College (MSC) of Denver undertook field school excavations at Weimer Ranch (Crane 1977, 1978). These investigations, directed by Dr. Jiri Vondracek, focused on a discrete complex of sites with evidence of masonry structures. The materials recovered from the sites were never fully analyzed by MSC, though one of the field school students, Cathy Crane, described the sites in her Master's thesis (Crane 1977). Once believed lost, this collection was recently rescued from obscurity and thoroughly analyzed as an offshoot of the Uncompahgre Plateau Archaeological Project, resulting in new interpretations (Greubel et al. 2006; Greubel et al. 2009) of the elusive Gateway tradition of west-central Colorado (originally defined by Reed 1997). It is likely that other curated collections from early excavation projects in the region could also yield useful data if reexamined and reinterpreted by modern archaeologists.

In the mid-1980s, the Chipeta Chapter of the Colorado Archaeological Society conducted excavations at the multicomponent Harris site (5MN2341) (Tucker and Society 1989). These excavations were conducted in response to ongoing vandalism at the site. Subsequent excavations at the historic Ute component of the Harris site took place in 1990, also by the Chipeta Chapter (Horn and Greubel 1997).

As noted above, most of the excavation projects that followed the Ute Prehistory Project, particularly since the mid-1970s, have been Section 106 compliance projects. One the earliest major projects of this type in the area was the Old Dallas Historical Archaeological Program for the Dallas Creek Project, all within the UFO Class I study area (Buckles et al. 1986). The Bureau of Reclamation contracted with ESCA-Tech Corporation to conduct archaeological mitigation within the area now encompassing Ridgway Reservoir and State Park. Bill Buckles of the University of Southern Colorado was hired to conduct the archaeological work. Archaeological inventories began in 1973 and data recovery was conducted from 1979 to 1981. Investigations of historic sites included 17 farms or ranches, eight miscellaneous structures, one school, the D&RG Railroad and eight railroad-related sites, six camps, 11 trash scatters or dumps, 12 roads, four ditches and the Dallas townsite. Of these, archaeological excavations were conducted at 15 historic sites: nine farms and ranches, the school, two sites related to placer mining, a dump associated with a racetrack, a dugout, and an artifact scatter (Buckles et al. 1986). In addition, five prehistoric sites were excavated (Muceus and Lawrence 1986).

The largest compliance project to date was the TransColorado natural gas pipeline project, conducted by Alpine Archaeological Consultants and its subcontractor, Centennial Archaeology, Inc. Twenty-four prehistoric sites in the UFO study area were excavated in 1997 and 1998, with eight sites subjected to full-blown data recovery and 16 undergoing backhoe trenching or limited data recovery. Excavations were often extensive, and a great number of artifacts, radiocarbon, and other ancillary study specimens were analyzed (Reed 2001). A synthetic volume was produced that integrated all the sites investigated along the 300-mile-long pipeline route.

Summaries of Important Excavated Sites in the UFO Study Area

Important excavated sites in the UFO study area—that is, within the five studied landscape units—are briefly described below. The reader desiring more information is encouraged to obtain the original excavation reports or other cited sources.

5DT2—Christmas Rockshelter (Uncompahgre Plateau LU)

Christmas Rockshelter was excavated by Bill Buckles during the Ute Prehistory Project. The site had been damaged by a bulldozer prior to excavation, but a total of around 14 m^2 of intact deposits were excavated (Buckles 1971). The excavations resulted in the recovery of 1,246 artifacts from four cultural components ranging from throughout the Archaic (including Pioneer period), the early Formative era, and the Historic period. Several thermal features were found and an artifact assemblage consisting of projectile points, flaked stone tools, and ground stone tools was recovered. The site was interpreted as a winter habitation. A Midland point recovered by Buckles was originally thought to represent a Paleoindian component (Reed and Metcalf 1999:58), but subsequent analysis of the site's stratigraphy by Reed and Smith Gebauer (2004) suggest that the point was curated by later inhabitants and no intact Paleoindian component is present at the site.

5DT271 – The Roatcap Game Trail Site (North Fork LU)

The Roatcap Game Trail site was excavated by Centuries Research, Inc. in 1986. The site is on a bench in a pinyon-juniper and Gambel oak woodland near East Roatcap Creek above the North Fork Valley. Cultural materials were confined to the upper 25-30 cm. Two components were identified, Formative and Protohistoric Ute (Baker 1991a). The Formative component yielded debitage, flaked stone tools, projectile points, and ground stone artifacts. Recovered cultural materials from the Numic component included debitage, hammerstones, one piece of ground stone, and Uncompahgre Brown Ware sherds.

5MN2 – the Hauser Site (Uncompahgre Plateau LU)

The Hauser site (5MN2) was excavated twice. The rockshelter was first excavated in 1960 by the Chipeta Chapter of the Colorado Archaeological Society (CAS). Proveniences were recorded for some, but not all, of the artifacts (Lister and Sanburg 1963). Artifacts recovered included a short length of sinew, an arrow foreshaft, a gypsum ornament, bone awls, bifaces, scrapers, projectile points, drills, manos, mauls, and hammerstones (Lister and Sanburg 1963). No mention is made of debitage. No chronometric samples were collected. Eighty-five artifacts were described by Lister and Sanburg (1963). The artifacts from this phase of site investigation were kept by their finders.

Buckles (1971) conducted additional excavations at the Hauser site as part of the Ute Prehistory Project. Buckles' excavations focused on discerning the stratigraphy of the site, but these efforts were unsuccessful, as only disturbed deposits were encountered. Buckles recovered a small quantity of chipped and ground stone tools and a single sherd. The sherd recovered by Buckles is apparently associated with a Protohistoric-era occupation of the site.

5MN14 – Carlyle Shelter (Uncompahgre Plateau LU)

Carlyle Shelter is a rockshelter northwest of Montrose in the vicinity of Dry Creek excavated during the Ute Prehistory Project (Buckles 1971). Buckles excavated approximately 9.3 m^2 at the site. Archaeological deposits were stratified, but small corner-notched projectile points were found in all cultural levels, suggesting multiple reoccupations by Formative-era peoples. Cultural features included unlined fire pits, but none was dated by chronometric means. A Protohistoric occupation was suggested by a Desert Side-notched projectile point from Level 4. No chronometric dates were obtained at the site.

5MN17 – the Initial Site (Uncompahgre Plateau LU)

The Initial site is northwest of Montrose along the eroding caprock of a mesa. Approximately 23.8 m^2 were excavated as part of the Ute Prehistory Project (Buckles 1971). Excavations revealed one large, slab-lined fire pit and a sample of lithic artifacts. No radiocarbon samples from the site have ever been processed. The recovery of small corner-notched and stemmed projectile points in all levels suggests primary occupation during the Formative era.

5MN28 – Shirley's Shelter (Uncompahgre Plateau LU)

Shirley's Shelter, excavated by Bill Buckles during the Ute Prehistory Project (Buckles 1971), is west of Montrose. Approximately 16.7 m^2 of the rockshelter's stratified cultural deposits were excavated and two unlined thermal features were found. No chronometric dates were obtained. Diagnostic artifacts were dominated by small corner- or side-notched projectile points, suggesting a Formative-era occupation.

5MN30 – Monte's Shelter (Uncompahgre Plateau LU)

Monte's Shelter is west of Montrose between Roubideau and Dry creeks. The rockshelter, 10 m^2 of which were excavated as part of the Ute Prehistory Project (Buckles 1971), contained shallow cultural deposits. The site is attributed to the Formative era on the basis of diagnostic corner-notched and stemmed projectile points, sufficiently small to represent arrow points. Three unlined fire pits were found, but none have been dated chronometrically.

5MN33 – Cushman Creek Site (Uncompahgre Plateau LU)

The Cushman Creek site was excavated by Buckles during the Ute Prehistory Project (Buckles 1971). The site is at the confluence of two streams. Approximately 93.5 m^2 were excavated, a relatively large exposure for that project and time. The excavations recovered debitage, "rock fragments," 34 lithic tools, and a single hearth. The tools included projectile points, knives and cutting implements, scrapers, choppers, hammerstones, manos, and a few other items. Buckles discussed the hearth and its spatially associated artifacts as a female activity area (Buckles 1971:871), and interpreted the site as a seasonal camp mostly supporting the collecting of vegetal resources. The artifacts classed as projectile points were apparently not diagnostic of time period and actually may have represented small cutting tools rather than projectile armatures. No radiocarbon samples were processed from the site.

5MN34 – Squint Site (Uncompahgre Plateau LU)

The Squint site is northwest of Montrose, on the eastern side of Dry Creek. It consists of a scatter of lithic artifacts among large boulders that have detached from rimrock. The boulders offer some protection from the elements. Just over 23 m^2 of the site were excavated during the Ute Prehistory Project (Buckles 1971). Excavators documented stratified cultural deposits that yielded primarily small corner-notched points. The points suggest that site occupation was mostly restricted to the Formative era. Cultural features identified consisted of unlined fire pits. No radiocarbon dates were obtained at the site.

5MN35 – Bedrock Pit Site (Uncompahgre Plateau LU)

The Bedrock Pit site, nearly 14 m² of which were excavated as part of the Ute Prehistory Project (Buckles 1971), was named after a large fire pit that was partly excavated into bedrock. The site, located northwest of Montrose on the eastern side of Dry Creek, is situated adjacent to a low exposure of bedrock. Cultural deposits generally extended only about 30 cm below the modern ground surface. No cultural deposits at the site have ever been radiocarbon dated. Affiliation with the Formative era is inferred from the discovery of small corner-notched or stemmed projectile points from multiple excavation levels. A Protohistoric occupation of the site is denoted by a steel knife blade and a shell button, but little else.

5MN37 (Uncompahgre Plateau LU)

Site 5MN37, excavated during the Ute Prehistory Project, is upstream from the Moore site on the Uncompahgre Plateau (Buckles 1971). The site was a former rockshelter with a collapsed overhang. Buckles excavated approximately 9.9 m² of the site to a depth of about 45 cm and recovered a small assemblage of flaked and ground stone tools. No temporally diagnostic artifacts were recovered. One slab-lined hearth was excavated, but no radiocarbon samples from the feature were collected, apparently.

5MN40 – Shavano Springs Site (Uncompahgre Plateau LU)

Approximately 20 m² of the Shavano Springs site—an open campsite—were excavated during the Ute Prehistory Project (Buckles 1971). Radiocarbon dates from the site indicate an Archaic (Terminal period) occupation. Projectile points suggest the presence of Formative and Protohistoric components; two historic-period glass trade beads were also recovered. Excavated features include slab-lined and unlined fire pits associated with the Archaic and Formative components.

5MN43 – Sanburg Site (Uncompahgre Plateau LU)

The Sanburg site was investigated during the Ute Prehistory Project (Buckles 1971); a total of approximately 18.5 m² was excavated. The rockshelter is in the rimrock on top of Monitor Mesa. The site reportedly has deep midden deposits and the lithic assemblage includes bifaces and flake tools. Many manos were found but no floral or faunal remains were recovered. One radiocarbon assay dates the site to the Terminal period of the Archaic era.

5MN44 – Monitor Creek Wickiup (Uncompahgre Plateau LU)

The Monitor Creek Wickiup site west of Montrose was investigated by the Ute Prehistory Project. A single wickiup was found at the site. An unlined fire pit was found inside the structure, but no artifacts were recovered (Buckles 1971). Excavations appear to have focused only on the structure.

5MN57 – Frank Bond Site (Uncompahgre Plateau LU)

The Frank Bond site is along Dry Creek northwest of Montrose. Approximately 11.6 m² of the open site were excavated as part of the Ute Prehistory Project (Buckles 1971). Excavations were conducted in arbitrary levels because of the lack in variation in site sediments. Two slab-lined fire pits were excavated, but no radiocarbon samples were processed. Affiliation with the Formative era is inferred from small stemmed or corner-notched projectile points in all the excavated levels.

Site 5MN191 – Paradox Valley (West End LU)

Site 191, actually a cluster of Formative-era structural sites including Wray Mounds, Paradox Pueblo, Wray Hill, Wray Ranch, and Paradox 1, was first partially excavated by Jeancon and Roberts in 1924 (Jeancon 1924) and subsequently test excavated by George and Edna Woodbury in 1931 (Woodbury and Woodbury 1932). No report ever issued from the 1924 work. Aside from

their 1932 article in *The Colorado Magazine*, the work conducted by the Woodburys and the Paradox sites themselves have been summarized by Gleichman et al. (1982) and McMahon (1997; 2000; McMahon and Bedingfield 2001). Additional excavations were conducted at 5MN191 (Wray Mounds or Paradox 1) in 1970 by San Diego State University and in 1973 by Metropolitan State College of Denver (at Wray Mounds). Unfortunately, the results of these efforts were never published, beyond a brief article by Kasper about the SDSU work focusing on faunal assemblages (Kasper 1977) and a timely report and article by Todd McMahon (1997; 2000) that present a few photographs of the SDSU excavations. The Paradox Valley sites are of major significance for understanding the nature of the Formative occupation of west-central Colorado in general and the Gateway tradition in particular. If undisturbed areas still exist at the sites, additional excavations could yield valuable data regarding chronology, cultural affiliation, and subsistence.

The artifacts recovered by the Woodburys are curated in the Material Collection of History Colorado (i.e., the Colorado Historical Society) (Todd McMahon, personal communication to Rand Greubel, 2010, see also McMahon 1997). Some of the Woodbury expedition ceramics have recently been reanalyzed by Ken Bedingfield and subjected to Instrumental Neutron Activation Analysis (INAA), with the results reported in Bedingfield's M.A. thesis (Bedingfield 2009). The materials recovered by Jeancon and Roberts also likely reside with History Colorado, although this has not been confirmed (Todd McMahon, personal communication to Rand Greubel, 2010). In any case, History Colorado retains the field notes, photographs, and original maps from both of these expeditions.

5MN367 – Roc Creek (West End LU)

Roc Creek, another Formative-era structural site with similarities to the Paradox Valley and Weimer Ranch sites, was excavated by Metropolitan State College (MSC) of Denver in 1974. This work was never fully reported, but was included in a Master's thesis written by Cathy Crane (1977). A small collection of debitage and flaked stone tools from the site was analyzed by Alpine Archaeological Consultants along with the Weimer Ranch materials and a radiocarbon date was obtained from a maize cob recovered from the site by MSC (Greubel et al. 2006). The site has eight contiguous, masonry rooms of variable shape built around a larger boulder. Ceramics may include Emery Gray, suggesting a Fremont affiliation (Crane 1977; McMahon and Bedingfield 2001), but the veracity of the ceramic classification remains uncertain (Reed 1997). In all other respects, the site appears to represent a Gateway tradition occupation similar to the Weimer Ranch sites, the Maze (5SM346), and other structural Gateway tradition sites in the region (see Reed and Emslie 2008). There are indications that the site may yet contain undisturbed deposits.

The Weimer Ranch Sites (West End LU)

The Weimer Ranch sites include Battleship (5MN368), Weimer IV (5MN7720), Creek Knoll (5MN7721), Hill I (5MN517), Middle Hill (5MN652), Wagon Bend (5MN653), and Cottonwood Pueblo (5MN654, which includes Hill Pueblo). Other excavated sites included in the Weimer Ranch site cluster are No. 90 (5MN665), "Cliffhanger," and "No. 6." The last two are believed to be part of Cottonwood Pueblo and apparently represent MSC's rather informal field school nomenclature; for example, other names applied by MSC to parts of the Cottonwood Pueblo structure complex include Rim, Rim II, and West Rim II. Finally, one other site present in the vicinity but apparently unexcavated is Last Hill (5MN518).

The Weimer Ranch sites were apparently visited and described by the Huschers in the late 1930s, though there is no evidence that they conducted any excavations (Huscher and Huscher 1943). C.T. Hurst of Western State College excavated House 4 (which he called Lone Tree House) and Hill Pueblo (both now considered parts of Cottonwood Pueblo) in 1947 and 1948 (Hurst 1948a, b). Metropolitan State College of Denver undertook field school excavations at Weimer Ranch from 1974 to 1977, under the direction of Dr. Jiri Vondracek. Excavations were conducted at Cottonwood Pueblo (House 3 and either House 1 or House 2), Battleship, Weimer IV, Creek Knoll, Hill I, Middle Hill, Wagon Bend, and No. 90 (Crane 1977, 1978). As described above, the materials from the sites

were never fully analyzed by MSC but were eventually acquired by the Rimrocker Historical Society of Nucla, Colorado. Funded by a Colorado State Historic Fund grant, Alpine analyzed the collections in 2005; the results are reported in Greubel et al. (2006; 2009). New insights into the Gateway tradition were gained. The analysis of ceramics and other artifacts, as well as new radiocarbon dates on maize, led to the conclusion that the sites likely represent a settlement of Ancestral Puebloan (i.e., Anasazi) farmers that took place during the A.D. 900s. There is at least one apparently unexcavated site at the Weimer Ranch, as noted above, as well as unexcavated portions of the excavated sites that may yet retain enough integrity to yield additional important data.

5MN847 – Chief Ouray's Home (Ouray area LU)

The remains of Chief Ouray's Home in the Uncompahgre Valley near Montrose (1875-1881) were investigated by Steve Baker as part of the Uncompahgre Valley Ute Project (Baker 1991b) (Baker 2005b). The razed remnants of the adobe ranch house were delineated and several extramural features were excavated. Most of the artifacts recovered during the excavation were the result of occupation of the residence after Ouray and Chipeta resided there. Some artifacts may have been the result of Ouray's occupation. Hispanic laborers are known to have worked for Ouray on the ranch, so some of the cultural deposits may be attributed to them.

5MN863 – The Moore Site (Uncompahgre Plateau LU)

The Moore site, on the Uncompahgre Plateau southwest of Delta, was excavated by Marie Wormington in 1938 and 1939 (Wormington and Lister 1956). The site consists of a 46-m-long rockshelter width an average overhang width of 5 m. A combination of blocks and trenches were excavated in three areas of the rockshelter (Wormington and Lister 1956:Figure 5). Somewhere between 280 and 290 m^2 of the shelter were excavated. Excavation levels were typically 20 cm in thickness. Numerous flaked stone tools were recovered, including projectile points, knives, scrapers, drills, gravers, flake tools, and choppers. Hammerstones, a shaft smoother, stone ornaments, manos, and basin metates were also found. Non-lithic artifacts included bone and antler tools, faunal remains, one wooden artifact, and a few perishable items including a basketry fragment. At least four hearths were found. Projectile point styles suggest Archaic and Formative occupations.

5MN864 – Casebier Site (Uncompahgre Plateau LU)

The Casebier site is only one-quarter mile from the Moore site. It was excavated in 1938 (Wormington and Lister 1956). Like the Moore site, it is a rockshelter. It measures about 16.5 m in length by an average of 3.7 m in width. It is not clear how much was excavated, but it was apparently considerably less than the Moore site. The artifacts recovered from the Casebier site were similar to those from the Moore site, though fewer and less diverse, so it is likely that Archaic and Formative occupations were represented (Wormington and Lister 1956). At least one hearth was excavated. Based on the materials excavated from both the Moore and Casebier sites, as well as several other excavated sites on the Uncompahgre Plateau, Wormington and Lister defined the Uncompahgre Complex (Wormington and Lister 1956).

5MN890 – Tabeguache Cave II (West End LU)

Tabeguache Cave II was originally excavated by C. T. Hurst in the early 1940s (Hurst 1943, 1944, 1945; Schroeder 1964). The site is along Tabeguache Creek in a steep canyon, just a few miles from its confluence with the San Miguel River. At least two components were recognized: an upper Ute component and a lower Basket Maker component, according to Hurst (1944). Cultural features included unlined and slab-lined fire pits and "potholes" excavated into the lowermost hardpan clay (Hurst 1945). Corn and squash rind were recovered. Artifacts recovered included perishable items, including cordage, leather, and a dart foreshaft. A variety of stone artifacts was also found. Stiger (2001) has recently reported a radiocarbon date from the site that, when calibrated (two sigma), indicates an occupation sometime between A.D. 440 and 760.

5MN915 – Dolores Cave (West End LU)

Dolores Cave, a rockshelter along the Dolores River in western Montrose County, was excavated by C.T. Hurst and Western State College in 1946 (Hurst 1947). The site had been heavily vandalized prior to Hurst's work. The large rockshelter measured 23 m long, with a maximum width of over 10 m. It was excavated by means of a long "frontal" trench and a shorter cross-trench, with cultural deposits ranging from "a few inches" to 5 ft (1.5 m) thick (Hurst 1947:9). The dry deposits of the shelter yielded not only flaked and ground lithic artifacts, but also numerous perishable items. One partially slab-lined hearth was excavated. Hurst mentions projectile points, knives, scrapers, hammerstones, manos, and metates. The points are described as two arrow points and three dart points, probably indicating Formative and Archaic occupations, respectively. A few bone and sheep horn tools were found. The highly varied perishable artifact assemblage included woven rush mat fragments, cordage, a juniper bark brush, woven yucca, a sandal fragment, bark coils, wooden dart and arrow foreshafts, a cane arrow shaft fragment, wooden artifacts resembling Promontory pegs that may have been triggers for traps (e.g., Jennings 1978:Figure 42), and a "medicine bundle" consisting of owl feathers, a stone fetish, a wooden knife, deer leg skins, and yucca cord. Recovered plant materials included cactus, yucca, small amounts of maize, and "native seeds and berries" (Hurst 1947:11). Abundant faunal remains were also recovered.

5MN1609 – Tabeguache Pueblo (West End LU)

Tabeguache Pueblo is an open architectural site northwest of Nucla, Colorado that was excavated by Hurst in 1945 (Hurst 1946). Hurst excavated parts of four masonry structures or rooms. Four "houses" were observed at the site, which constituted noncontiguous masonry room blocks. Rooms are rectangular and delineated by masonry walls. The Southeast and the Southwest Houses were completely excavated. Less intensive excavations—aimed primarily at exposing wall alignments—were conducted at the Northeast and the Northwest Houses. Two middens were identified outside the room blocks. Recovered artifacts included small corner-notched arrow points, ground stone, flaked stone tools, beads, and pottery. Unmodified and modified animal bone was also recovered. Diagnostic pottery included Mancos Black-on-white and Lino Gray. The Mancos Black-on-white type indicates a site occupation sometime between A.D. 900 and 1150. Because Anasazi pottery and rectangular masonry architecture was found, Hurst (1946) suggested that the site represented a peripheral Pueblo II habitation. Test excavations at the site were recently conducted by Alan Reed of Alpine and Steven Emslie of the University of North Carolina Wilmington (Reed and Emslie 2008) and charcoal was recovered for radiocarbon dating. The resulting dates, however, suggest an occupation between A.D. 780 and 930, which is at odds with the ceramics from the site and likely reflects the use of old wood as hearth fuel.

5MN2341 – The Harris Site (Uncompahgre Plateau LU)

The Harris site is a multicomponent rockshelter located at the lower, eastern edge of the Uncompahgre Plateau near Olathe. The site, which had been extensively vandalized, contains deep, stratified deposits, several rock art panels, and a light scatter of artifacts fronting the shelter and on the opposite side of a shallow drainage. The site was excavated by the Chipeta Chapter of the Colorado Archaeological Society (CAS) from 1984 to 1987 (Tucker and Society 1989). The CAS work consisted of three test units and the collection of surface artifacts; a total of 6,700 artifacts was recovered in addition to faunal remains and charred plant material yielding radiocarbon dates. Six stratigraphic levels were delineated, representing occupations beginning around 3500 B.P. and extending into historic times. A late historic Ute occupation dating to 1879-1881 was excavated in 1990, also by the Chipeta Chapter. Two teepee areas with hearths were excavated, yielding metal artifacts, glass seed beads, debitage, and flaked stone tools from the historic period (Horn and Greubel 1997).

5MN3760 (West End LU)

Site 5MN3760 is an open lithic scatter a few miles southeast of Naturita, Colorado. Grand River Institute excavated at the site in advance of planned mining developments (Conner and Hutchins 1992). Excavations focused on the exposure of two thermal features, one of which was slab-lined. One feature dated to the Terminal period of the Archaic era and the other a few centuries more recent in age, represents either a Terminal-period or early Formative-era occupation.

5MN3859 – Coalbank Canyon Site (Uncompahgre Plateau LU)

The Coalbank Canyon site was excavated by Centennial Archaeological Consultants during the data recovery phase of the TransColorado Pipeline project in 1998 (Kalasz et al. 2001b). The site is an extensive, multicomponent camp on the Uncompahgre Plateau. The cultural strata on the site were 20-30 cm deep, with some artifacts found as deep as 45 cm below the modern ground surface. Eighteen cultural features were excavated within three excavation blocks. The site comprises lithic workshops and campsites occupied intermittently over a 6,000-year period, during the Settled, Transitional, and Terminal periods of the Archaic era as well as the early Formative era. A historic component, represented by the remains of a Navajo Gray Ware ceramic vessel, was also present. Very few floral or faunal remains were recovered. Over 9,000 artifacts were recovered, including debitage, bifaces, projectile points, modified cobbles/nodules, and expedient lithic tools (Kalasz et al. 2001b). The projectile points included Mallory, Northern, and San Rafael Side-notched; Humboldt Concave-base; and McKean Lanceolate types.

5MN3876 – Transfer Road Hamlet (Uncompahgre Plateau LU)

Also excavated by Centennial Archaeological Consultants during the data recovery phase of the TransColorado Pipeline project in 1998, the Transfer Road Hamlet is an architectural site whose cultural affiliation is categorized as Aspen tradition (Kalasz et al. 2001a). The site is located on a gently sloping ridge on the eastern flank of the Uncompahgre Plateau. Three circular basin houses, each with central hearth areas, were excavated during the excavations. Floral remains were lacking, but significant quantities of faunal refuse were associated with House 3. Several extramural features were associated with one of the basin houses. Radiocarbon dating from one of the basin houses suggests an occupation as early as the first century A.D., but dates from another house indicate an occupation between A.D. 400 and 500. Over 7,000 artifacts were recovered, including debitage, flaked stone tools, battered stone tools, modified cobbles, projectile points, manos, metates, and faunal remains.

5MN4082 (West End LU)

Site 5MN4082 was excavated by Centennial Archaeology as part of the TransColorado pipeline project (Slessman et al. 2001). Although 70 m² was shallowly excavated, less information was recovered than anticipated. One unlined hearth with fire-cracked rock was found; it yielded a radiocarbon date indicating a Formative-era occupation. A variety of stone artifacts was recovered, including small- and medium-sized notched projectile points. The site was interpreted as a "way station" by peoples engaged in hunting and gathering activities.

5MN4253 – The Schmidt Site (West End LU)

The Schmidt site is northwest of Norwood, Colorado, on a mesa top near Maverick Draw. The site is nearly a mile long and contains seven defined artifact and feature clusters, (Greubel and Cater 2001). Excavations were conducted at four of the loci in advance of construction of the TransColorado natural gas pipeline. Multiple components were identified, including a probable Terminal period Archaic occupation and several components dating to the Formative and Protohistoric eras. These components yielded numerous thermal features and lithic artifacts. Two shallow basin houses were excavated in one of the early Formative components. One of the basin houses yielded charred maize, which was radiocarbon dated. Protohistoric components, including the remains of collapsed wickiups, were excavated in three loci (Greubel 2005; Greubel and Cater

2001). Collectively, the Protohistoric occupations date between A.D. 1450 and the late 1800s. Multiple dating methods were employed for the Protohistoric occupations, including thermoluminescence, radiocarbon dating on both wood charcoal and deer bone, dendrochronology, and lithic and ceramic cross-dating. Over 600 m^2 were excavated at the site.

5MN4270 – The Aldasoro Site (West End LU)

The Aldasoro site is a sherd and lithic scatter investigated on the TransColorado Pipeline project northwest of Norwood, Colorado. Two blocks were excavated. Block 1, comprising 33 m^2, yielded evidence of a Protohistoric component (Greubel and Reed 2001). Block 1 excavations yielded 533 sherds, dominated by a brown ware variety with partly obliterated corrugations. A thermoluminescence date from one of the sherds indicates manufacture sometime between A.D. 1461 and 1545. Lithic artifacts were also recovered. One pit feature was excavated that yielded a radiocarbon date of cal A.D. 1305-1430. The discrepancy between the thermoluminescence and radiocarbon dates is attributed to use of old wood as fuel in the hearth (Greubel and Reed 2001).

5OR139 – Uncompahgre Ute Agency, 2nd Los Pinos Indian Agency (Ouray area LU)

Archaeological excavations of the Uncompahgre Ute Agency in the Uncompahgre Valley (1875-1881) were conducted by Steve Baker in 2002 under a Colorado State Historic Fund Grant (Baker 2004a, 2005a). Although considerably damaged by subsequent plowing and construction of U.S. Highway 550, the layout of the site could be discerned and several structures were identified.

5OR179 (Ouray area LU)

Site 5OR179 was just west of the Uncompahgre River at the present location of Ridgway Reservoir. The open lithic scatter was excavated as part of the Dallas Creek project, conducted in advance of inundation of the reservoir's pool area. Site 5RO179 was relatively large and had at least 12 concentrations of surface artifacts; some were surface collected and others were excavated, though none extensively. The site yielded evidence of probable Terminal period Archaic- and early Formative-era occupations (Muceus and Lawrence 1986). Modest numbers of flaked and ground stone artifacts were recovered at the site.

5OR182 (Ouray area LU)

Site 5OR182 was also excavated at the present location of Ridgway Reservoir. Like 5OR179, it was on a bench just west of the Uncompahgre River (Muceus and Lawrence 1986). Excavations focused on roasting features identified during testing and on a surface cluster of ground stone artifacts. An early Formative-era occupation was identified and a small assemblage of flaked and ground stone artifacts was recovered.

5OR198 (Ouray area LU)

Site 5OR198 was also excavated as part of the Dallas Creek project (Muceus and Lawrence 1986). It was on a bench on the western side of the Uncompahgre River. Excavations focused on cultural features evident on the ground surface. Three thermal features were exposed and small blocks around them were excavated. Radiocarbon dates from the features revealed Formative-era occupations. Small quantities of lithic artifacts and faunal remains were recovered.

5OR243 (Ouray area LU)

Site 5OR243 was on a terrace above the Uncompahgre River at the present location of Ridgway Reservoir (Muceus and Lawrence 1986). Charcoal for radiocarbon dating was collected from two disturbed features as well as general excavation levels. The assays on these samples indicted early Formative-era occupations. Significantly, one of the features yielded fragments of either squash or gourd seeds.

5OR317 (Ouray area LU)

Site 5OR317 was excavated at the present location of Ridgway Reservoir, as part of the Dallas Creek Project (Muceus and Lawrence 1986). Like many other sites identified during this project, 5OR317 is located on a terrace on the western side of the Uncompahgre River. The site consisted of multiple surface artifact concentrations (Muceus and Lawrence 1986). Flaked and ground stone artifacts were recovered, in addition to faunal remains. A radiocarbon date from a hearth reflects a Transitional period Archaic occupation, but later reoccupation of the site during the Formative era is indicated by small corner- and side-notched arrow points.

5OR1062 and 5OR1065 – Many Bullets Lodge and Jutten Lodges (Ouray area LU)

Also excavated as part of the same Colorado State Historic Fund Grant as the Los Pinos Agency (5OR139) and situated nearby, Baker (2005a) excavated two historic-period Ute encampments in 2003 believed to have been occupied at the same time as the agency. Discrete residential locales with historic artifacts in association were uncovered.

5SM2425 – Simpson Wickiup Site (West End LU)

The Simpson Wickiup site is west of Norwood on the rim of Hamilton Creek canyon. The site was excavated as part of the TransColorado Pipeline project (Greubel 2001a). Archaic, Formative, and Protohistoric/historic Native American components were identified. The earliest component was Settled period, and yielded slab-lined thermal features and flaked and ground stone tools. A Transitional period component, evidenced by flaked stone artifacts and a partially lined hearth, was also identified. The Formative component consisted of four features dating between cal A.D. 660 and 1150, as well as a small assemblage of projectile points and other flaked stone artifacts. The site is more notable, and indeed was selected for excavation because of, its highly visible and extensive Protohistoric and historic-period Ute occupations (Greubel 2001a, 2005). The remains of two wickiups (including one partially standing) were excavated within a 400 m^2 block. Smaller blocks were also excavated in several locales across the site area. The wickiups date to the late eighteenth and early nineteenth centuries. The Protohistoric/historic components yielded thermal features and numerous artifacts, including flaked stone, ceramics, faunal remains, and a small assemblage of historic artifacts consisting of a possible ceramic pipe fragment, a piece of hammered brass or copper, a percussion cap, and iron cone tinklers (Greubel 2001a, 2005). Dating was conducted through radiocarbon assays, dendrochronology, and artifact cross-dating.

Cultural Resource Inventories

A large number of cultural resource inventories have been conducted within the UFO Class I study area. At least 100,275 acres within the project area have been intensively inventoried for cultural resources, representing approximately 5.4 percent of the total project area of 1,854,092 acres. Table 6 shows the total acreage, surveyed acreage, and percentage represented per identified landscape unit in the project area. These totals include all cultural resource inventories within the boundaries of each landscape unit regardless of land ownership, but exclude the Gunnison Gorge NCA and the Black Canyon of the Gunnison National Park. Figure 4 through Figure 7 show the locations of the inventories conducted on each landscape unit of the UFO.

Table 6. Previous Survey in the UFO by Landscape Unit.

Landscape Unit	Total Acreage	Surveyed Acreage	Percentage Surveyed
Dominguez-Escalante NCA	121,685	11,480	9.4
North Fork	314,863	9,181	2.9
Ouray	387,622	8,427	2.2
Uncompahgre	398,638	19,881	5.0
West End	631,284	51,306	8.1
Total	**1,854,092**	**100,275**	**5.4**

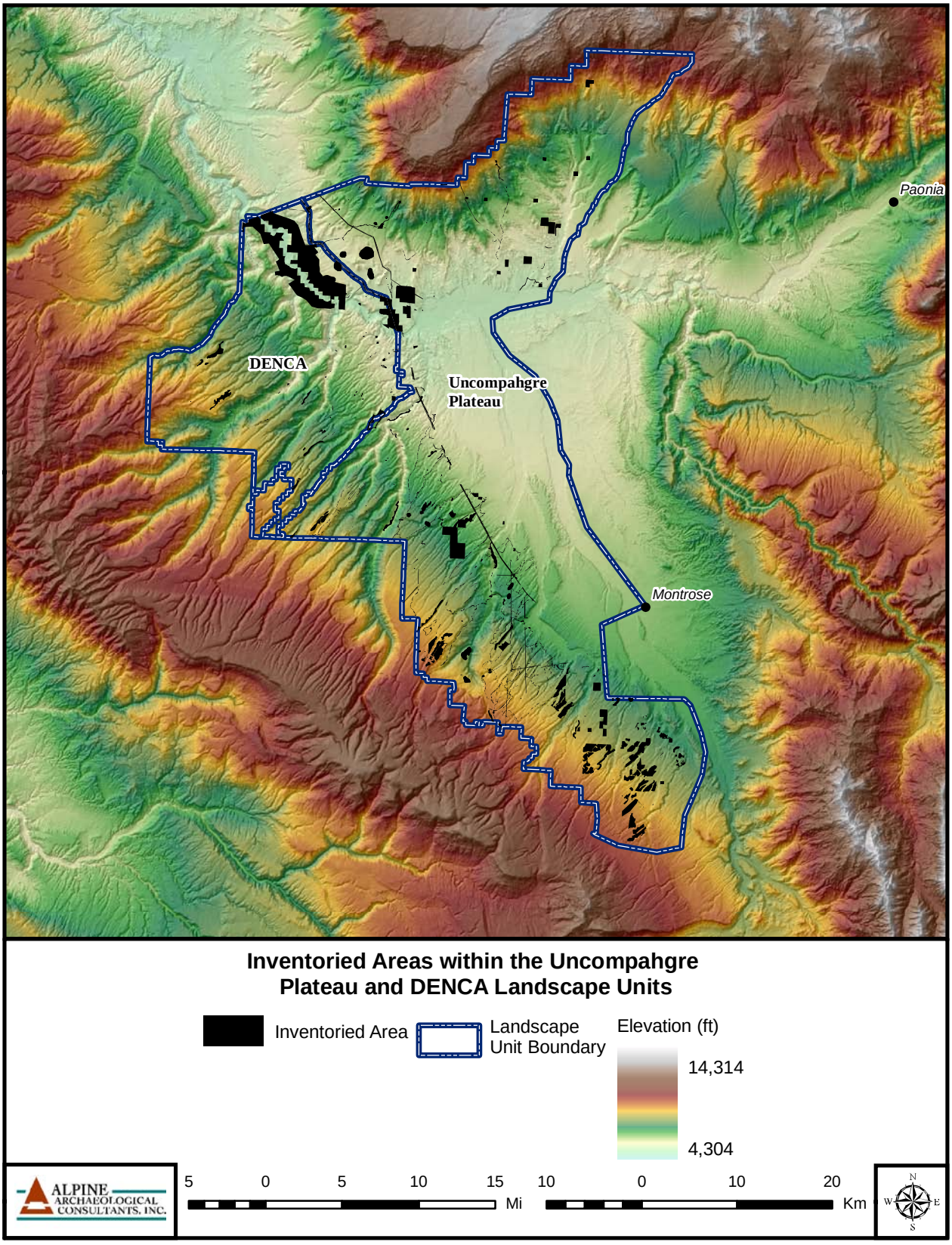


Figure 4. Cultural resource inventories conducted on the DENCA and Uncompahgre Plateau landscape units.

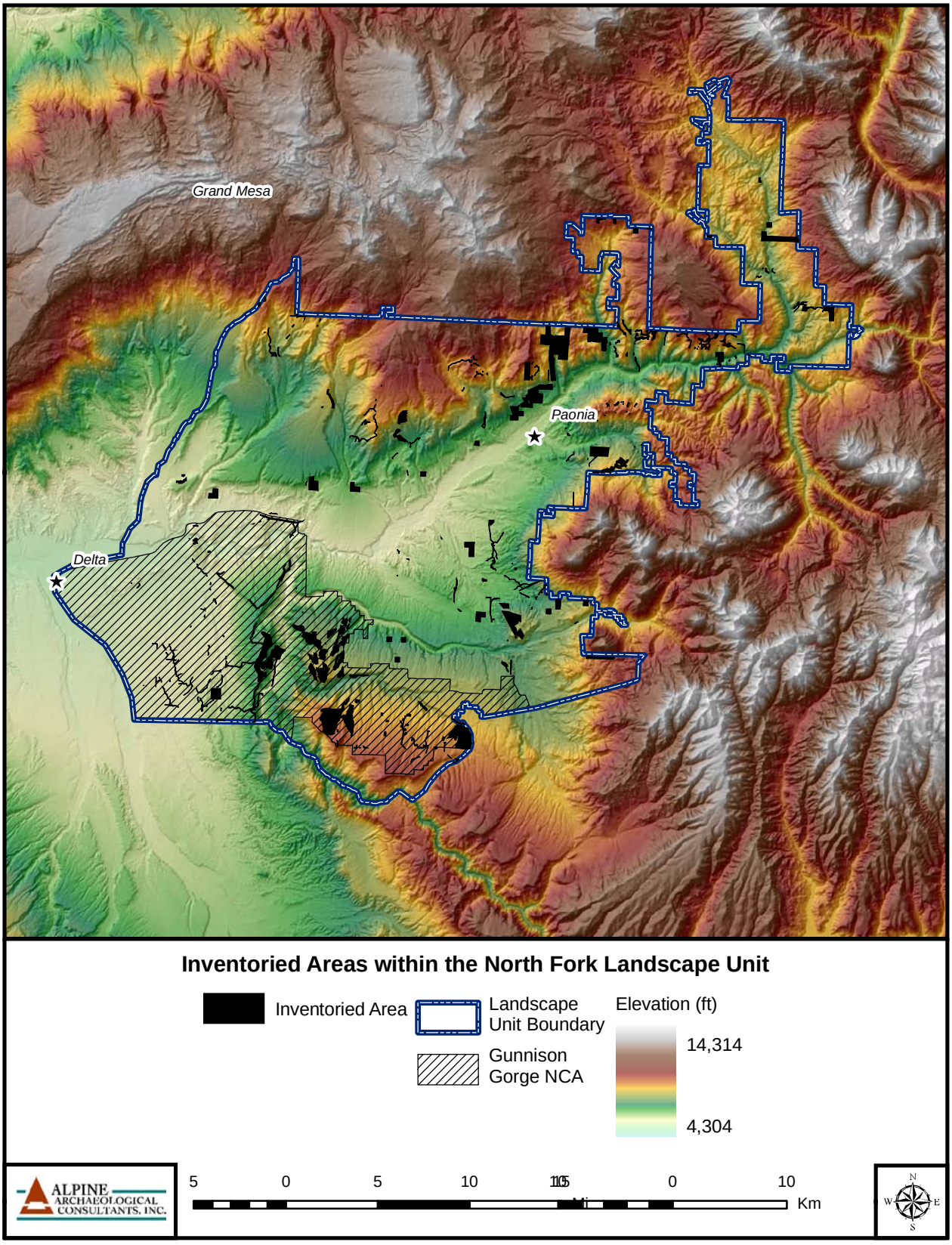


Figure 5. Cultural resource inventories conducted on the North Fork landscape unit.

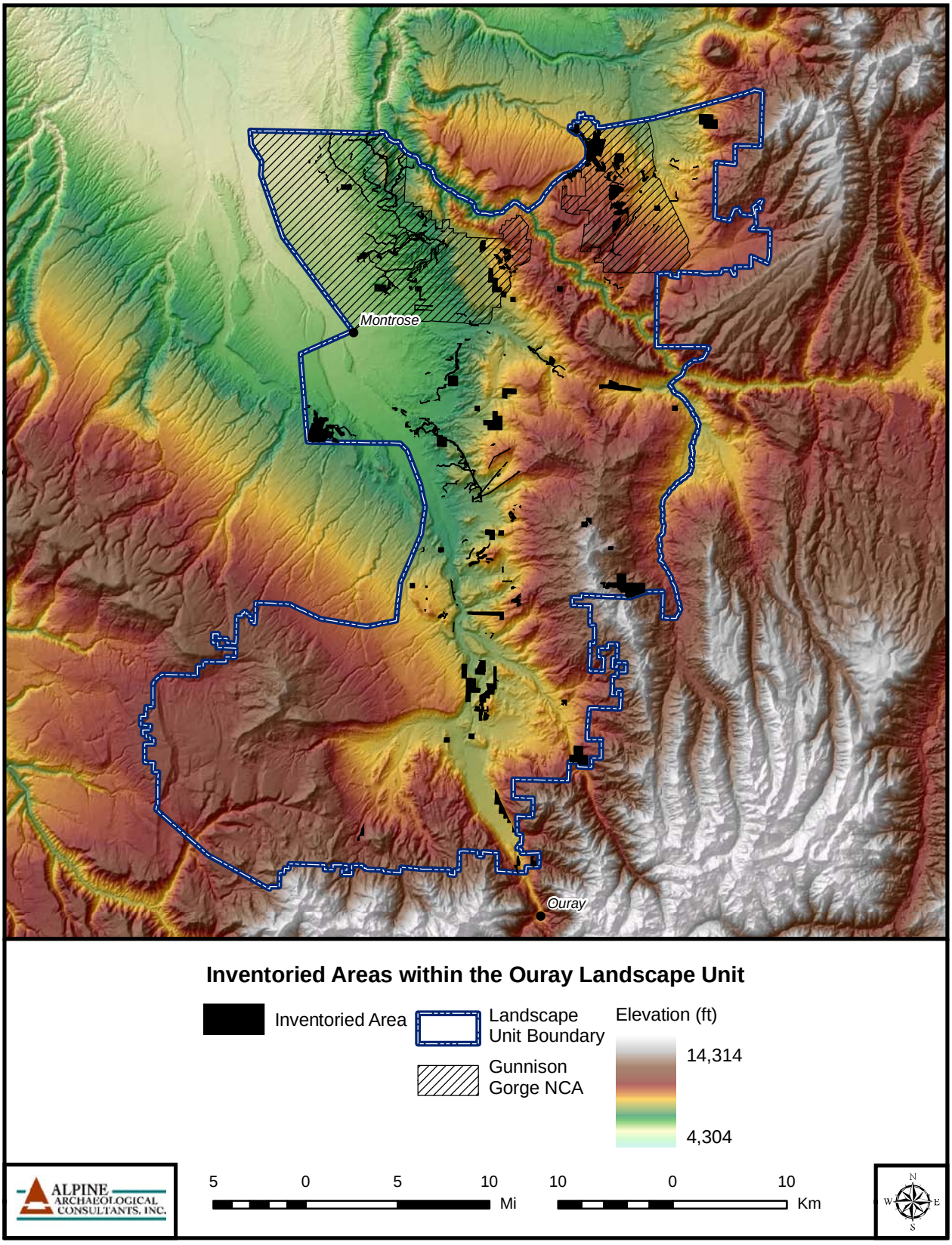


Figure 6. Cultural resource inventories conducted on the Ouray landscape unit.

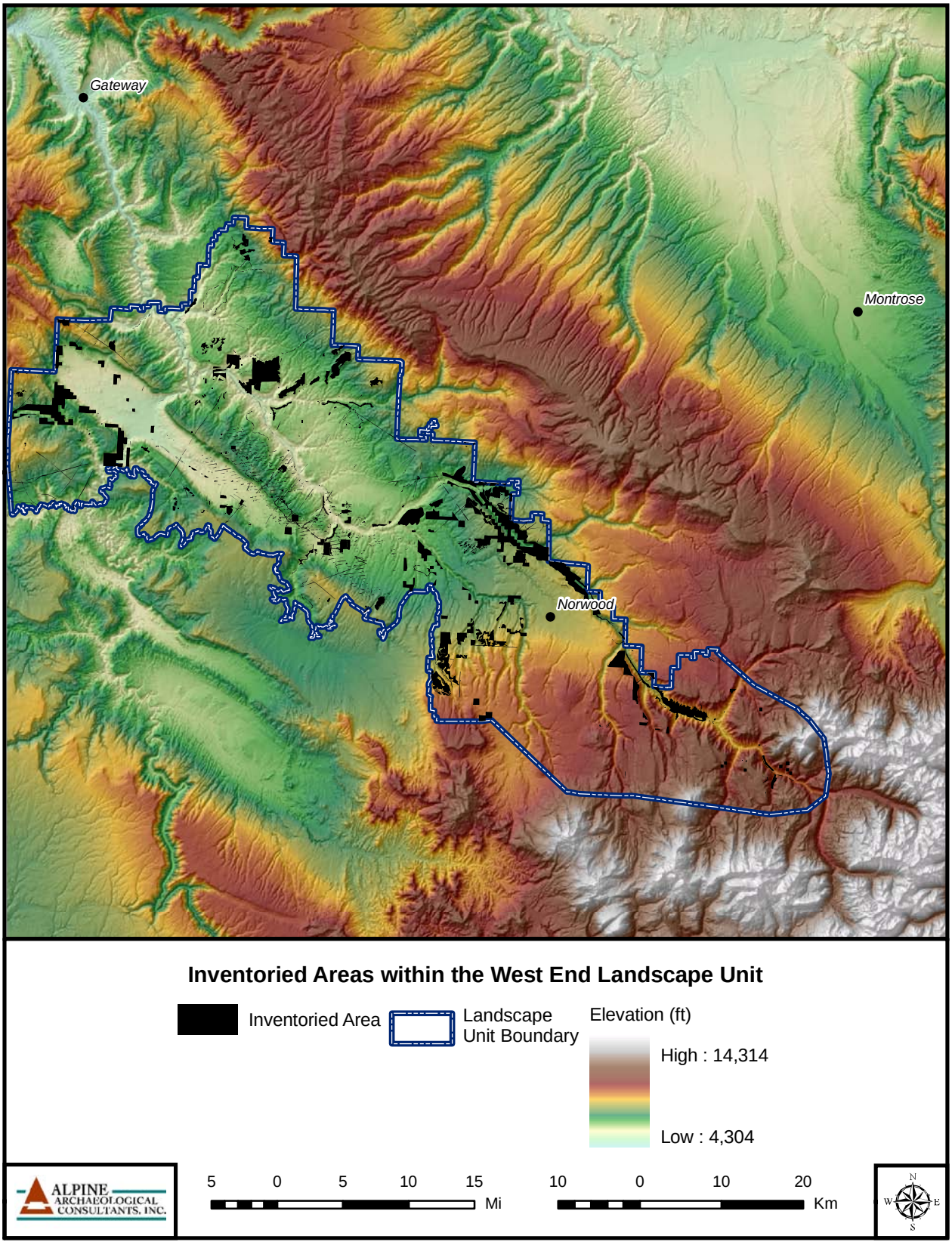


Figure 7. Cultural resource inventories conducted on the West End landscape unit.

Table 7 shows counts of cultural resource inventories for the UFO by type for each decade. The table includes only projects within the five landscape units, but may include projects that took place on private lands within the LUs. The data presented in Table 7 reflect a "snapshot" of archaeological survey coverage in the UFO in late 2009-early 2010.

Table 7. Summary by Project Type and Decade of All Inventory Projects in the UFO.

Project Type	1970s	1980s	1990s	2000s	Total
General Development	*3*	*3*	*1*	*3*	***10***
Communications	3	5	9	10	**27**
Mine/Quarry	4	49	102	40	**195**
Oil and Gas	6	45	24	64	**139**
Power		22	23	31	**76**
Transportation	3	37	53	62	**155**
Unknown Pipeline		1		3	**4**
Industry Total	*16*	*159*	*211*	*210*	***596***
Development Total	***19***	***162***	***212***	***213***	***606***
Fence		15	19	12	**46**
Prescribed Burn	1	1	1	3	**6**
Grazing or Stock Management		11	9	22	**42**
Timber Sale	3	6	2	1	**12**
Vegetation Management	1	3	9	33	**46**
Wildfire Rehabilitation/Reconnaissance		3		4	**7**
Wildlife			4	6	**10**
Water	6	98	76	38	**218**
Firewood Sale		10		1	**11**
Erosion Control		2	3	21	**26**
Landfill			2		**2**
Land Use/Maintenance Total	***11***	***149***	***125***	***141***	***426***
Recreation	***1***	***6***	***10***	***5***	***22***
Historic Survey		***2***	***2***	***1***	***5***
Research	***4***	***1***		***4***	***9***
Land Exchanges		***7***	***12***	***4***	***23***
Site Specific Projects		***1***	***1***		***2***
Military			***3***		***3***
Miscellaneous/Unknown	***1***	***16***	***12***	***21***	***50***
Total by Decade	**36**	**344**	**377**	**389**	**1146**

Most of the subject cultural resource inventories were conducted to comply with Section 106 of the National Historic Preservation Act of 1966. Some are linear in nature and represent work conducted in advance of seismic operations and construction of power and telephone transmission lines, roads, and pipelines. Most inventories, however, consist of block surveys. These include planned land exchanges, coal leases or coal mine development, firewood cutting areas, timber sales, reservoir pool areas, small-scale water developments, vegetation treatments, wildfire management, grazing allotments, and oil and gas wells. Trends that are evident within the data presented in Table 7 include an increase in development-related projects since the 1970s and a slight decrease in projects related to land use or maintenance. In particular, projects related to transportation, power, and communications have increased over the past three decades, while mining and quarrying peaked in the 1990s and declined in the first decade of the twenty-first century. Oil and gas-related projects were strong in the 1980s, declined in the 1990s, and resurged strongly in the 2000s. Projects related to water management or development display a drastic decline from the 1980s, whereas vegetation management projects have increased. Land exchanges and recreation-related projects were most numerous in the 1990s.

A comprehensive listing or discussion of the major cultural resource inventories that have been conducted in the UFO study area is beyond the scope of this document, but Reed and Smith Gebauer have recently summarized many of the most important archaeological surveys in the region (Reed and Smith Gebauer 2004:Table 2).

Regional Contexts, Syntheses, and Other Important Archaeological Work

Four documents stand out as the most important synthetic works regarding the prehistoric archaeology of the UFO and surrounding region. Published in 1999, the context for the Northern Colorado River Basin written by Alan Reed and Michael Metcalf remains an important source of information for any archaeologist conducting research or cultural resource work in the region (Reed and Metcalf 1999). Despite being over a decade old, most of the data, research issues, and conclusions presented in the document are still valid and relevant. The second document is the synthetic report of the TransColorado Pipeline project in western Colorado (Reed et al. 2001), which summarizes and synthesizes the results of the extensive excavation of 8 sites as well as limited data recovery work on 16 others, many of which are in the UFO. The synthetic report addresses a number of regionally and locally important research issues in detail and, apart from Buckles' (1971) monumental dissertation, stands as the most thorough summary and analysis of excavated data ever produced for the study area. The UPAP research design, context, and sensitivity model produced in 2003-2004 resulted in the compilation of a large body of data for both surface-recorded and excavated sites in the Uncompahgre Plateau area (Reed and Smith Gebauer 2004; Smith Gebauer 2004). The project also resulted in robust synthetic summaries of the prehistoric occupation of the region by temporal period and the formulation of important research questions for the Uncompahgre Plateau area. These data and summaries have been employed in this Class I document as much as possible, often with little modification other than updating for projects that have been conducted since the UPAP study was completed. Lastly, the context for the Southern Colorado River Basin (Lipe et al. 1999), though focused primarily on southwestern Colorado, is also an important potential source of information for researchers working in or near the UFO, particularly regarding Ancestral Puebloan (Anasazi) archaeology.

The Colorado Radiocarbon Database project conducted by Claudia Berry (2009) has resulted in a comprehensive compendium of radiocarbon dates from hundreds of excavated or otherwise dated archaeological components across the region, complete with descriptions and references for each. Dr. Berry's work represents a major contribution to not only the archaeology of the UFO area but all of western Colorado.

Another notable archaeological investigation in the UFO study area, though not involving substantial excavation, was the work conducted at the so-called "Flint Cave" (5MN7429) by the Chipeta Chapter of the Colorado Archaeological Society and Neil Hauser, a graduate student at the University of Colorado, Denver. The Flint Cave—actually a bedrock mine—was the site of intensive prehistoric quarrying of high-quality silcrete. Two documents resulted from this work, a report prepared by the Chipeta Chapter (Richey and Hauser 2007) and a Master's thesis by Hauser (2008). Hauser's MA work evaluates several hypotheses pertaining to the existence of the mine and in doing so focuses attention on the larger issues surrounding prehistoric lithic procurement on the Uncompahgre Plateau and surrounding region.

The recent work conducted by Alpine Archaeological Consultants (Greubel et al. 2006; Greubel et al. 2009) with the collections from the Weimer Ranch sites has been discussed. Even more recently, Reed and Emslie undertook the recording, testing, and radiocarbon dating of 12 structural Gateway tradition sites in or near the West End LU of the present study area (Reed and Emslie 2008). This work resulted in valuable data on site size, structure and room sizes, artifact assemblages, and chronology. Several sites that seem to retain good potential for intact buried deposits were recommended for archaeological excavation.

Our knowledge of past environments and paleoclimate of the Uncompahgre Plateau and surrounding areas during the late Pleistocene and throughout the Holocene are limited because of the dearth of paleoenvironmental work in the study area, which has in turn hampered our understanding of how past environments may have affected Paleoindian and Archaic settlement and subsistence systems. Work conducted on packrat middens on the Uncompahgre Plateau by Dr. Steven Emslie and his colleagues (as yet unpublished) has recently improved the outlook for a useful regional paleoenvironmental model spanning the Paleoindian and Archaic eras. Hopefully, this is just the first of many such studies.

Very important work on prehistoric rock art has been accomplished by Sally Cole in the UFO study area and surrounding region (Cole 1987, 1990). More recently, Dr. Carol Patterson and her colleagues have begun to produce high-quality documentation and research on rock art in the study area. Examples include studies of the Shavano Valley petroglyphs west of Montrose (Patterson 2005), rock art in Leonards Basin and Palmer Gulch at the eastern edge of the Uncompahgre Plateau (Patterson et al. 2006), rock art site 5DT813 along the Gunnison River east of Delta (Watchman and Patterson 2006), petroglyph sites in Deer Creek and Big Dominguez Canyon northwest of Delta (Patterson and Duncan 2007), the Escalante Bridge Rock Art site (5DT4) west of Delta (Williams and Patterson 2008), and the Roc Creek Petroglyph site (5MN443) along the Dolores River (Patterson and Patterson 2010). Dr. Patterson's meticulous recordation methods, systematic and insightful interpretations, and partnerships with Native American elders have raised the bar for all archaeologists who undertake the documentation and study of prehistoric and historic Native American rock art in the region. Recent work conducted by Dr. Patterson on the cultural affiliations of rock art in the UFO study area is summarized in Appendices C and D.

Historical Work Relevant to the UFO Study Area

Important summaries of the history of the region encompassing the UFO have been presented in O'Rourke (1980; 1992) and Mehls (1982). The recent document by Church et al. (2007) provides a comprehensive context for both Euroamerican and Native American historical archaeology in the region. Other important context documents useful for historical archaeological work in the study area include Buckles and Buckles (1984) and Husband (1984) for general historical topics, Fell and Twitty (2006) on mining, King (1984) on engineering, and Holleran (2005) on irrigation and water supply.

Important projects or reports related to historical archaeology have been noted in the above section on excavated sites, but include the report of the Dallas Creek Project (Buckles et al. 1986), Eric Twitty's work on uranium mining sites (Twitty 2006, 2008b), historical work for the Rifle-San Juan Transmission Line (McDonald and Horn 1987), historical work for the Trans-Colorado Pipeline (Reed and Horn 1992; Reed et al. 1992), work conducted on historic Ute sites in the region (Baker 2004a; Horn and Greubel 1997), and work conducted for the Hanging Flume by Alpine (Pfertsh 2005).

American Indian Trails

No attempt was made to identify historic-period Native American trails during the compilation of data for the UFO Class I overview project, primarily because this was done for the UPAP study (Reed and Smith Gebauer 2004). GLO maps on file at the BLM offices in Montrose and Grand Junction were carefully inspected and all trails labeled "Indian trails" were digitized and summarized in the UPAP report (Reed and Smith Gebauer 2004). The GLO maps generally date to the 1880s and 1890s, so map indications of Native American trails were regarded as fairly accurate. Recent USGS topographic quadrangles were also inspected for Indian trails, though the credibility of the USGS designations was considered less than that of the GLO data. The exercise resulted in the identification of six Native American trails within the boundaries of the UPAP: the Wrights Mesa Indian trail, the Indian Creek trail, the Horsefly Indian Creek trail, the Forty-Seven Creek Indian

trail, the Shavano Valley Rock Art site trail, and an Indian trail recorded as site 5ME504 (Reed and Smith Gebauer 2004:16), all of which are described briefly below.

The Wrights Mesa Indian trail, identified from the GLO records, is approximately 8 km (5 miles) long and runs northwest to southeast of the town of Norwood, Colorado. The trail takes a relatively straight path across the mesa above Naturita Canyon. The Indian Creek trail is roughly 250 m (800 ft) long and runs along a steep slope just north of Outlaw Mesa, less than ½ mile south of Indian Creek. This trail was also identified from the GLO records. The Horsefly Indian Creek trail is roughly 8 km (5 miles) long and parallels the North Fork and the West Fork of Horsefly Creek, terminating at its northern end around Government Springs. Like the Wrights Mesa Indian trail and the Indian Creek trail, the Horsefly Indian Creek trail was identified from the GLO records. Roughly 11 km long (7 miles), the south end of the Forty-Seven Creek Indian trail begins on top of Pinto Mesa and goes down the steep slope to 47 Creek, which it follows for roughly 3.5 km (2.2 miles) before turning northeast toward Starvation Point. The trail was identified from 1:24,000 scale USGS topographic quadrangle maps. At the North Fork of the Tabeguache Creek, this trail joins a modern "pack" trail, making it unclear where the Indian trail ends. The Shavano Valley Rock Art site trail is associated with the Shavano Valley Rock Art Site (5MN5) on the northeastern slope of Shavano Valley west of the town of Montrose, Colorado. The trail runs roughly 200 m (700 ft) downslope at the northern end of the site, just east of rock art panel 7. Lastly, the American Indian trail recorded as site 5ME504 runs along Blue Creek, just north of Blue Mesa in the northeast part of the project area. The length of this trail is unknown.

Ethnographic Studies Relevant to the UFO Study Area

Several studies of Eastern Ute or other Numic groups relevant to the Ute peoples who formerly inhabited the UFO area have been published. Principal among these is Anne Smith's ethnography of the Northern Ute (Smith 1974). Isabel Kelly's ethnography of the Southern Paiute contains comparative data useful in applications of ethnographic analogy to the prehistory of the UFO study area (Kelly 1964). Ethnographic studies or overviews by Callaway et al., Lowie, Opler, Steward, and Stewart concerning various Numic groups of the Intermountain West are all relevant to the study area to one degree or another (Callaway et al. 1986; Lowie 1924; Opler 1940; Steward 1938, 1974; Stewart 1942, 1966, 1971).

Goss (1999) addresses issues surrounding group labels and social identities of Numic peoples of the Intermountain West, focusing in particular on the Ute people of Colorado and Utah. A recent volume on Ute arts and culture published by the Colorado Springs Fine Arts Center contains several valuable articles, including a summary of subsistence and material culture (Fowler 2000); a discussion of traditional Ute cosmology, ecology, and language (Goss 2000); an overview of Ute history since 1850 (Ellis 2000); and a treatment of Ute culture during the prehistoric and Spanish Colonial periods (Wroth 2000). Even more recently, the Dominguez Archaeological Research Group (DARG) prepared an overview of Ute ethnohistory in west central Colorado based on a collaborative project involving three BLM field offices (Glenwood Springs, Grand Junction, and Uncompahgre) and three Ute tribes, the Uintah and Ouray (Northern Utes), the Ute Mountain Ute, and the Southern Ute (Ott et al. 2009). The overview is both a synthesis of "existing historical, ethnographic, and archaeological data" and a documentation of "current Ute heritage needs" as determined through consultation, discussions, and site visits with representatives of each tribe (Ott et al. 2009:1). The goals of the project, which is ongoing, are "to identify areas and sites of cultural and religious importance to the Ute people, to preserve and protect Ute cultural heritage values that are embedded in public lands, and to encourage and support the Utes' traditional use of those lands" (Ott et al. 2009:1).

Baker et al. (2007) present a useful discussion of ethnohistorical sources pertaining to the Eastern Ute. Verner Reed produced an interesting first-hand description of the Ute bear dance (Reed 1896). Other miscellaneous articles or papers pertaining to Ute history that may be of interest to researchers in the UFO study area, though not all representing original research, include Barber's description of Ute gaming (1877), an ethnographic summary of the Ute by Beals (1935), a historical account of the Utes of eastern Utah (O'Neil n.d.), and an account of the Utes and Apaches in a report by the U.S. Secretary of War (Secretary of War 1879). Sally Crum has authored a good overview of American Indians, including the Ute, of the prehistoric and historic periods in Colorado that contains valuable ethnographic information (Crum 1996). Other useful books on the Ute people of the historical period include Pettit (1990), Rockwell (1956), Simmons (2000), and a history of the Northern Ute published by the Uintah-Ouray Ute Tribe (Conetah 1982).

Finally, as an outcome of a collaborative project sponsored by the Grand Mesa, Uncompahgre, and Gunnison National Forests and the Bureau of Land Management-Grand Junction Field Office, McBeth (2008) presents original research on Ute ethnobotany that includes the perspectives of traditional Ute people. Moerman (1998) also includes some data on Ute ethnobotany.

CHAPTER 3. PRESENTATION OF THE PREHISTORIC AND HISTORIC DATA

Introduction

This chapter summarizes the site data for the UFO project area and discusses the frequencies of site types and cultural affiliations currently present in each landscape unit. Information regarding the prehistoric and historic sites present in the UFO project area was obtained from site databases managed by the OAHP and the UFO. The database used in this analysis contains records of all site information entered into the OAHP and UFO databases prior to December 11, 2009. The information obtained in these tables was combined and duplicate site entries were removed. In addition, sites located on lands administered by the United States Forest Service (USFS) were also removed. The information contained with the UFO and OAHP databases includes, but is not limited to, the site's Smithsonian number, resource type (e.g., prehistoric or historic), archaeological type (e.g., open camp, historic canal, isolated find, etc), features (e.g., hearth, wickiup, structure, etc), and artifacts (flaked stone, tin cans, ceramics, etc.).

As of December 11, 2009, there are 3,556 prehistoric sites and 1,272 historic sites within the UFO project area, for a total of 4,828 cultural resource sites (Figure 8). In addition, there are 2,914 prehistoric and 227 historic isolated finds or features present in the project area. Some of these cultural resources are duplicated in the total site count as some sites contain both a historic and prehistoric component, as well as a site and isolated find component. For example, of the 3,556 prehistoric sites present in the current dataset, 223 of these also contain a historic component.

Because of the considerable degree of variability in the terminology used in entering site data into the database, Alpine found in necessary to further summarize and interpret the available data as part of the current project. To consolidate the data into manageable units, each prehistoric site was classified to a specific site type and cultural affiliation group using the data present in the OAHP and UFO site databases. In cases where the information was vague or incomplete, an effort was made to gather the site forms to clarify the site type and cultural affiliation information. When the cultural affiliation could not be accurately determined, the site was categorized as Unknown Prehistoric. The following summarizes the site types and cultural affiliations assigned to each site in the sensitivity model database and the criteria used to designate a site to a specific resource type or temporal period.

Definition of Site Types and Cultural Affiliations

Historic sites are classified according to thematic associations. Each site, regardless of property type, is classified according to the research theme best associated with the recorded remains. Research themes include: transportation, water control and distribution, communication, settlements, rural agriculture, industry, recreation, and government. Table 8 summarizes the historic sites, by research theme, in the UFO project area, by landscape unit.

For this analysis, nine different prehistoric site types were defined. These resources include open artifact sites, open architectural sites, wickiups, rock art sites, sheltered architectural sites, sheltered artifact sites, lithic procurement sites, cambium trees, and human burials. When a cultural resource site corresponds to multiple site types, the site is counted multiple times, one for each site type represented. For example, a sheltered architectural site may also have rock art present, and would be represented under both site type categories. Table 9 summarizes each of the site types present within each of the five landscape units present in the UFO project area.

Sites were categorized as open artifact sites when classified as either an "open lithic scatter" or "open camp" in the UFO and OAHP databases. Some of these sites contain documented features, such as a hearth or thermal feature, and all of the sites have an artifact assemblage dominated by flaked stone debris and occasionally ground stone and flaked stone tools. A limited number of these sites also contain ceramic artifacts. Similarly, a site was classified as a sheltered artifact site if it contained the same attributes as an open artifact site, with the exception of being located within a rockshelter or protected by a rock overhang.

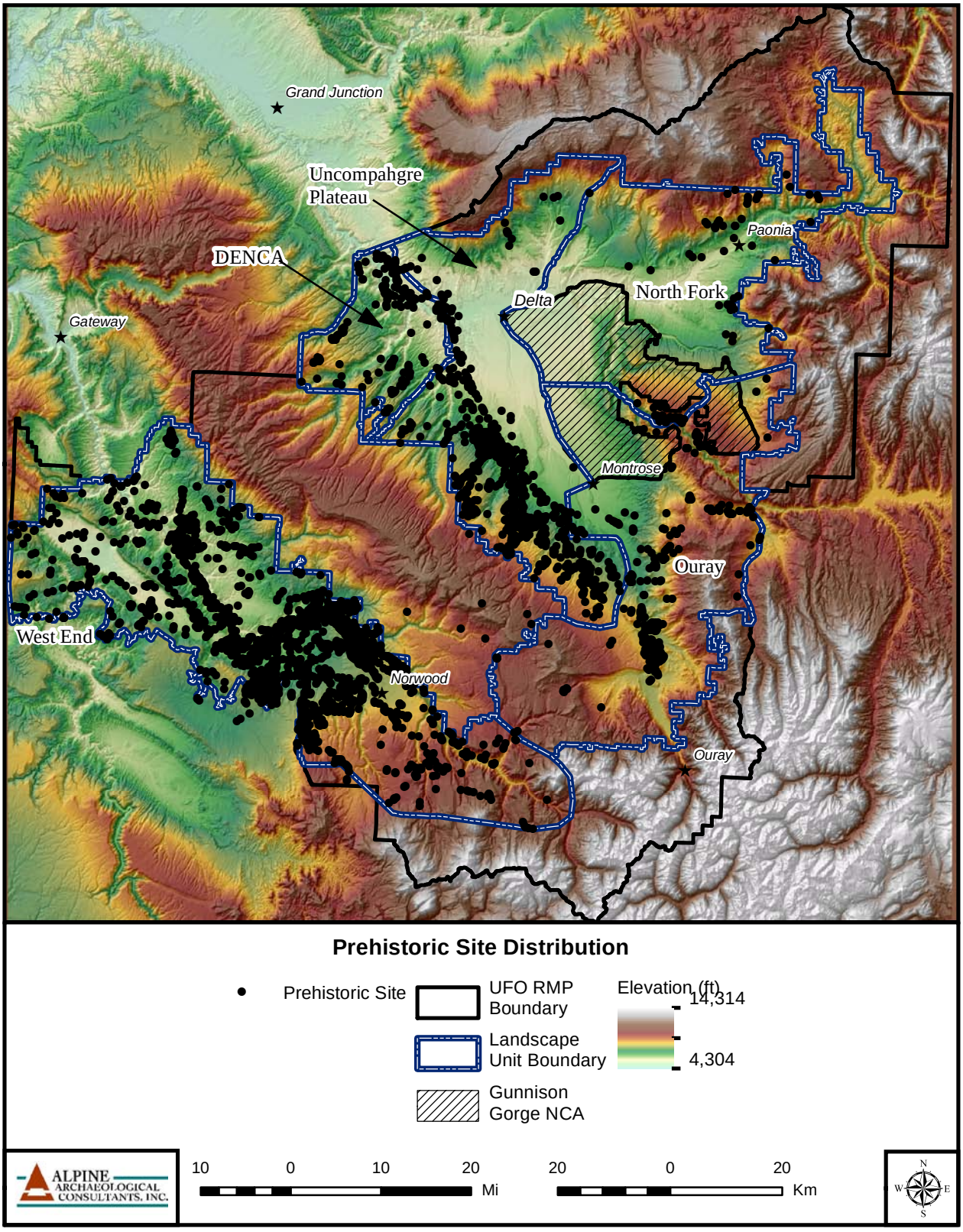


Figure 8. Distribution of known prehistoric sites within the Uncompahgre Field Office.

Table 8. Historic Resource Types within the UFO Study Area, by Landscape Unit.

Research Theme	DENCA	North Fork	Ouray	Uncompahgre	West End	Total
Communication	0 (0.0)	0 (0.0)	1 (0.3)	1 (0.4)	0 (0.0)	2
Government	0 (0.0)	1 (< 1.0)	2 (0.6)	4 (1.4)	1 (0.2)	8
Industry	3 (7.7)	19 (10.1)	31 (9.7)	9 (3.2)	194 (42.1)	256
Recreation	0 (0.0)	0 (0.0)	1 (0.3)	0 (0.0)	0 (0.0)	1
Rural Agriculture	8 (20.5)	49 (26.0)	57 (17.8)	37 (13.0)	78 (17..0)	229
Settlement	6 (15.4)	87 (46.5)	116 (36.1)	81 (28.5)	54 (11.7)	344
Transportation	7 (17.9)	12 (6.3)	48 (15.0)	33 (11.6)	26 (5.6)	126
Water Control/Distribution	1 (2.6)	15 (8.0)	26 (8.1)	32 (11.3)	26 (5.6)	100
Unknown/Other	14 (35.9)	5 (2.6)	39 (12.1)	87 (30.6)	82 (17.8)	227
Total Sites	**39[1]**	**188**	**311[23]**	**284[12]**	**457[3]**	**1,272†**
TOTAL Research Themes	**39**	**188**	**321**	**284**	**461**	**1,293**

[1] Three sites overlap both the DENCA and Uncompahgre landscape units. [2] Three sites overlap both the Ouray and Uncompahgre landscape units. [3] One site overlaps both the Ouray and West End landscape units. † A total of seven sites overlap multiple landscape units.

Like the artifact scatter category, architectural sites were divided into open and sheltered resources. Sites classified as "open architectural" in the OAHP and UFO databases include those containing features such as stone circles, stone alignments, ruins, granaries, storage cists, masonry structures, hunting blinds, and sweat lodges. Wickiup sites, although generally classified as open architectural in the OAHP and UFO databases, were separated from the rest of the open architectural sites when a wickiup structure was designated under the feature or site name columns. Similar to sheltered artifact sites, sheltered architectural sites are located along or within a rockshelter or protected by a rock overhang, but must contain at least one architectural element, such as a masonry wall or storage cyst.

Site types present in smaller numbers within the UFO project area include cambium trees, rock art sites, lithic procurement sites, and human burials. A site was categorized as a cambium tree site when it was classified as a "cambium tree" or "scarred tree" in the OAHP and UFO databases. Rock art sites were typically designated within the Archaeological Type category in UFO and OAHP databases; however, sites containing a rock art feature were also considered a rock art site when the sites were classified for the current analysis. Lithic procurements sites include those classified as "stone quarry," "lithic quarry," or "lithic procurement" under the archaeological type or feature type categories in the OAHP and UFO databases. To remain consistent during the site classification, lithic procurement sites were not duplicated in the open artifact sites category, even though they were frequently designated as both a lithic procurement and an open artifact site in the OAHP and UFO databases. Finally, a site was considered to be a human burial if a prehistoric burial was noted in either the archaeological type or feature column.

The prehistoric sites in the UFO project area were categorized into six archaeological units or cultural affiliations. The cultural affiliations used in this report were defined based on those presented in Reed and Metcalf (1999); however, variations in cultural affiliation terminology were extensive throughout the database. The five primary chronological units used for this classification include the Paleoindian era, the Archaic era, the Formative era, the Protohistoric era, and Historic Native American. Additional terminology used in the OAHP and UFO databases includes, but is not limited to, the Late Prehistoric, Uncompahgre Complex, Post-Archaic, Anasazi, and Gateway. In these cases, additional information available in the OAHP and UFO was used to determine into which of the five major cultural affiliations a site was most suited. If no definitive information was present, such as the presence of diagnostic artifacts, then the site was classified under the catchall category, Unknown Prehistoric. Similar to the site type designation, an individual site may be doubly represented in the cultural affiliation counts if the site contains multiple prehistoric components. Of the 3,556 prehistoric sites in the UFO project area, there are 249 sites are multi-component sites. Table 10 summarizes the prehistoric cultural affiliations present in the UFO project area by landscape unit. The cultural affiliation for all of the historic sites was broadly categorized as Euroamerican.

Table 9. Prehistoric Resource Types within the UFO Study Area, by Landscape Unit.

Prehistoric Site Type	DENCA*	North Fork	Ouray	Uncompahgre	West End	Total
Open Artifact	107 (56.6%)	48 (94.1%)	259 (91.5%)	782 (88.9%)	1968 (91.4%)	3164 (89.0%)
Open Architectural	6 (3.2%)	2 (3.9%)	8 (2.8%)	14 (1.6%)	62 (2.9%)	92 (2.6%)
Wickiup	17 (9.0%)	0 (0.0%)	0 (0.0%)	4 (0.5%)	16 (0.7%)	37 (1.0%)
Rock Art	20 (10.6%)	1 (1.7%)	0 (0.0%)	30 (3.4%)	22 (1.0%)	73 (2.0%)
Sheltered Architectural	3 (1.6%)	0 (0.0%)	0 (0.0%)	1 (0.1%)	9 (0.4%)	13 (<1.0%)
Sheltered Artifact	32 (16.9%)	0 (0.0%)	4 (1.4%)	57 (6.5%)	75 (3.5%)	168 (4.7%)
Lithic Procurement	10 (5.3%)	0 (0.0%)	2 (0.7%)	11 (1.2%)	19 (0.9%)	42 (1.2%)
Cambium Trees	0 (0.0%)	0 (0.0%)	6 (2.1%)	0 (0.0%)	3 (0.1%)	9 (<1.0%)
Burial	1 (0.5%)	0 (0.0%)	5 (1.8%)	2 (0.2%)	3 (0.1%)	11 (<1.0%)
Total Sites	189	51	283	880	2153	3556
Total Site Types	**196 (103.7%)**	**51 (100.0%)**	**284 (100.4%)**	**901 (102.4%)**	**2177 (101.1%)**	**3609 (101.5%)**

*Dominguez-Escalante National Conservation Area.

Table 10. Prehistoric Cultural Affiliations within the UFO Study Area, by Landscape Unit.

Prehistoric Site Type	DENCA*	North Fork	Ouray	Uncompahgre	West End	Total
Unknown Prehistoric	155 (82.0%)	42 (82.4%)	222 (78.4%)	648 (73.6%)	1666 (77.4%)	2733 (76.8%)
Paleoindian	1 (0.5%)	0 (0.0%)	4 (1.4%)	14 (1.6%)	36 (1.7%)	55 (1.5%)
Archaic	10 (5.3%)	5 (9.8%)	30 (10.6%)	151 (17.2%)	331 (15.4%)	527 (14.8%)
Formative	4 (2.1%)	2 (3.9%)	10 (3.5%)	76 (8.6%)	189 (8.8%)	281 (7.9%)
Protohistoric	23 (12.2%)	3 (5.9%)	20 (7.1%)	78 (8.9%)	91 (4.2%)	215 (6.1%)
Historic Native American	1 (0.5%)	0 (0.0%)	9 (3.2%)	12 (1.4%)	6 (0.3%)	28 (<1.0%)
Total Sites	189	51	283	880	2153	3556
Total Cultural Affiliations	**194 (102.6%)**	**52 (102.0%)**	**295 (104.2%)**	**979 (111.3%)**	**2319 (107.7%)**	**3839 (107.9%)**

*Dominguez-Escalante National Conservation Area.

Prehistoric and Historic Cultural Resources in the Study Area

The following presents the frequencies of site types and cultural affiliations by landscape unit for the both the prehistoric and historic cultural resources. In addition, counts of prehistoric and historic isolated finds or features are also presented.

Dominguez-Escalante NCA Landscape Unit

Site Types and Frequencies

A total of 289 cultural resource sites is documented in the Dominguez-Escalante NCA (DENCA) landscape unit, including 189 prehistoric sites, 39 historic sites, 56 prehistoric isolated finds or features, and 5 historic isolated finds or features.

The distribution of prehistoric sites by type within the DENCA and Uncompahgre Plateau landscape units is shown in Figure 9-Figure 11. The 189 prehistoric sites in the DENCA landscape unit represent eight of the nine different prehistoric site types (Figure 18). Cambium trees represent the only site type currently not represented in the DENCA landscape unit. Similar to the prehistoric site types in all landscape units as summarized in Table 9, the prehistoric site types in the DENCA landscape unit are dominated by open artifact sites, which make up 56.6 percent of the site types present with 107 sites represented. Twenty rock art sites, 32 sheltered artifact sites, and 17 wickiups account for another 36.5 percent of the total site types present. Twelve of the rock art sites are designated as petroglyphs and the remaining eight are described as rock art panels in the UFO and OAHP databases. Two of the sheltered artifact sites also contain rock art elements and eight of the sheltered artifact sites have thermal features present. The artifact assemblages at the sheltered artifact sites are dominated by flaked stone debris, with some ground stone artifacts present as well. All but three of the wickiup sites have artifacts documented at the site. The assemblages are diverse and include lithic debris, ground stone artifacts, ceramics, copper artifacts, glass beads, and metal hooks.

Site types present in even smaller numbers include 6 open architectural sites, 3 sheltered architectural sites, 10 lithic procurement sites, and a single human burial. The open architectural sites include 1 game blinds, 3 circular stone enclosures, 1 stone structure, and 1 stone alignment. Architectural elements associated with the sheltered architectural sites include a cairn, a rock alignment, and upright slabs. Data available in the UFO and OAHP tables indicates that chert was procured at the three of the lithic procurement sites and quartzite was procured at four others. The remaining three sites do not describe the lithic material procured. Site 5ME14257 represents the only known human burial in the DENCA landscape unit.

The distribution of historic sites in the DENCA and Uncompahgre Plateau landscape units is shown in Figure 12. The 39 historic sites in the DENCA landscape unit include a variety of site types related to the following research themes (Table 11): transportation, water control and distribution, settlements, rural agriculture, and industry. In addition, there are 14 sites classified as Unknown or Other. Rural agricultural-related sites in this unit include 3 habitation structures, 2 agricultural homesteads, 1 ranching homestead, 1 corral, and 1 root cellar, for a total of 8 sites. Seven sites are classified under the transportation theme and include 2 bridges, 1 railroad, 3 trail segments, and 1 wagon road. Notable sites include a segment of the Denver and Rio Grande Western railroad bed (5DT749.1) and two segments of the Old Spanish Trail—Salt Lake Wagon Road (sites 5DT854.2 and 5DT854.5). Settlement sites within the DENCA landscape unit include six historic camp sites, one of which has associated rock art graffiti. All three of the industrial sites relate to the mining industry and include two lime kilns and a powder house. Only one site is related to water control and distribution and is classified as a water wheel. Finally, the 14 sites not classified under a specific theme include one cache, four rock art sites, five trash dumps, three stone cairns, and two stone alignments or miscellaneous structures.

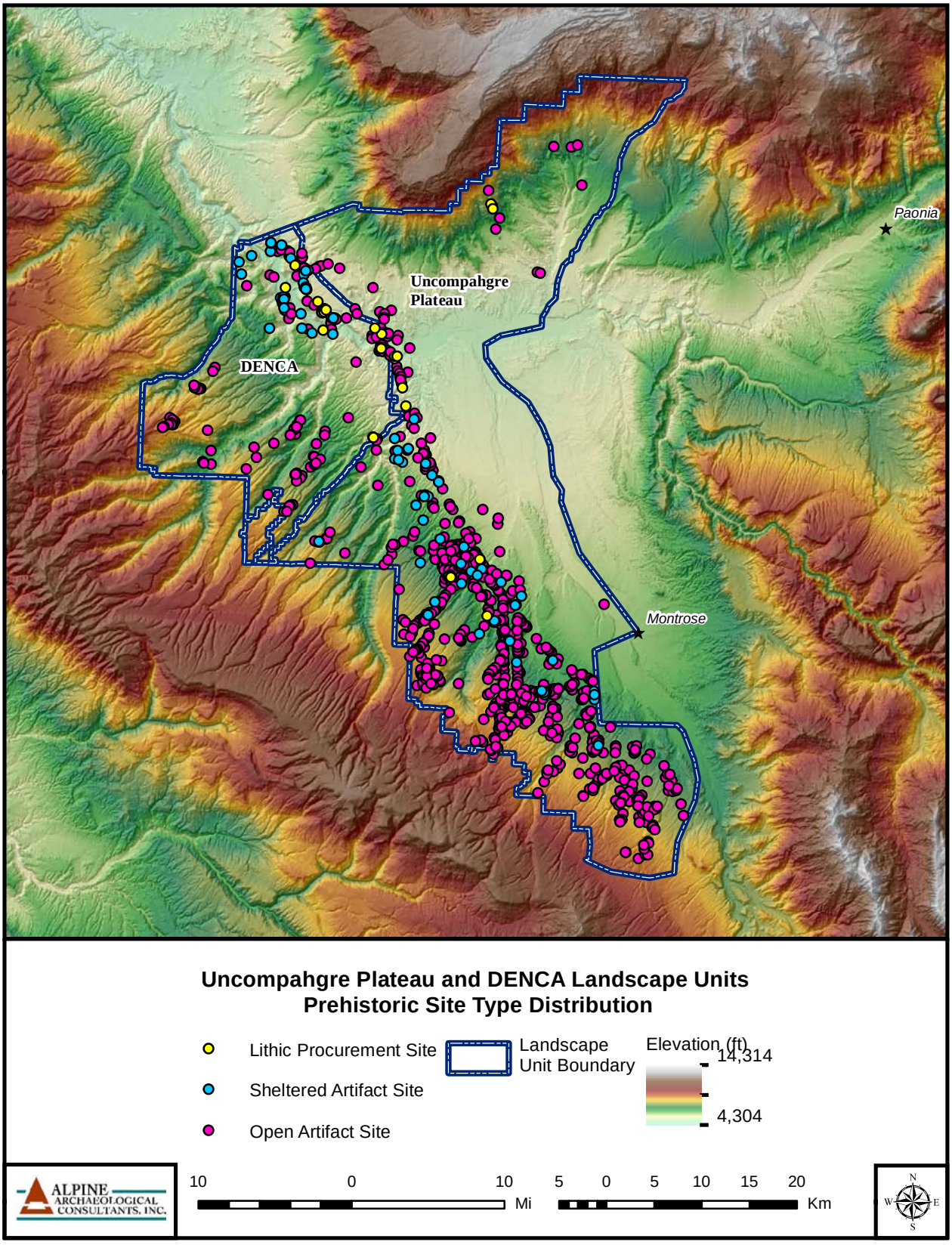


Figure 9. Distribution of open artifact, sheltered artifact, and lithic procurement sites within the DENCA and Uncompahgre Plateau LUs.

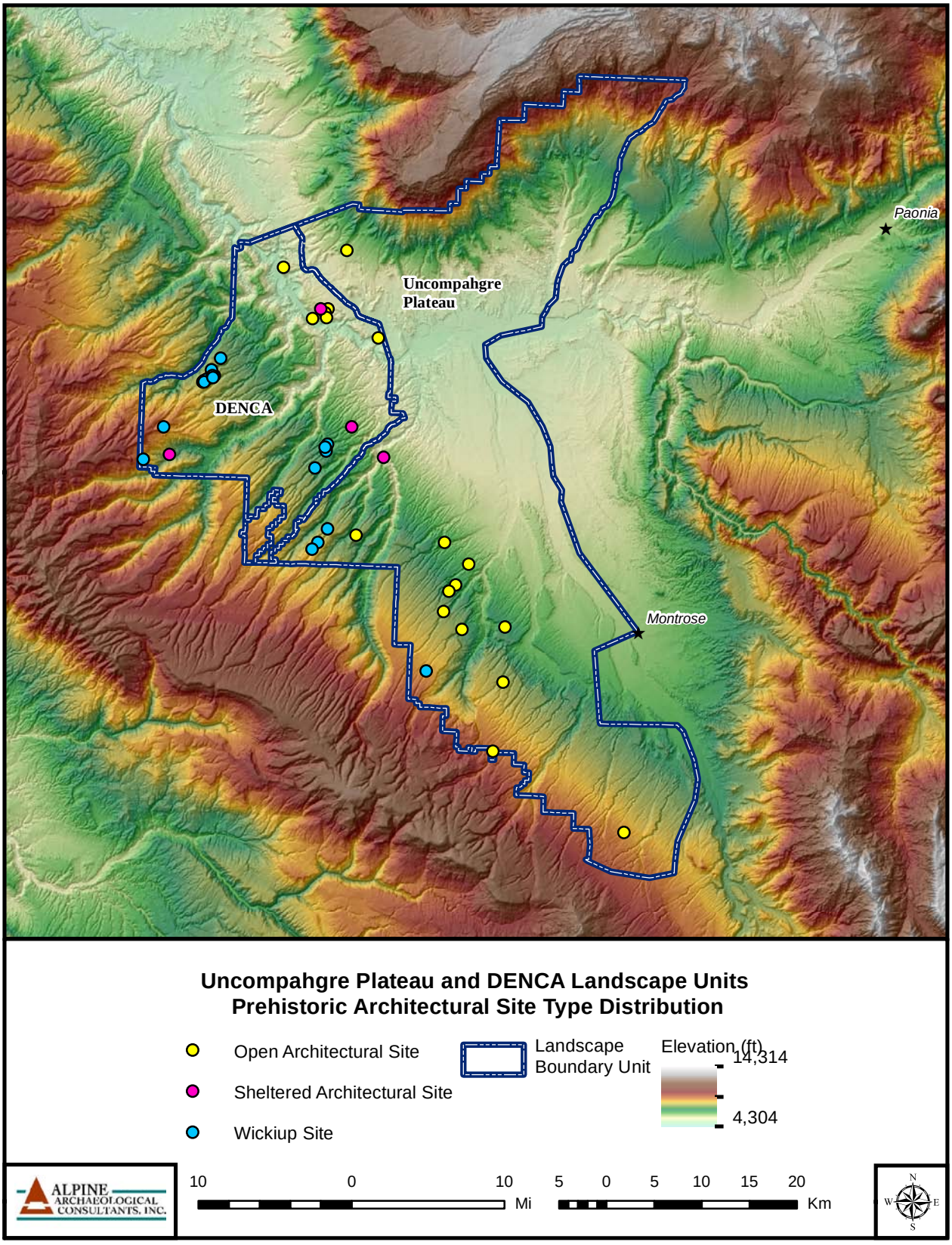


Figure 10. Distribution of open architectural, sheltered architectural, and wickiup sites within the DENCA and Uncompahgre Plateau LUs.

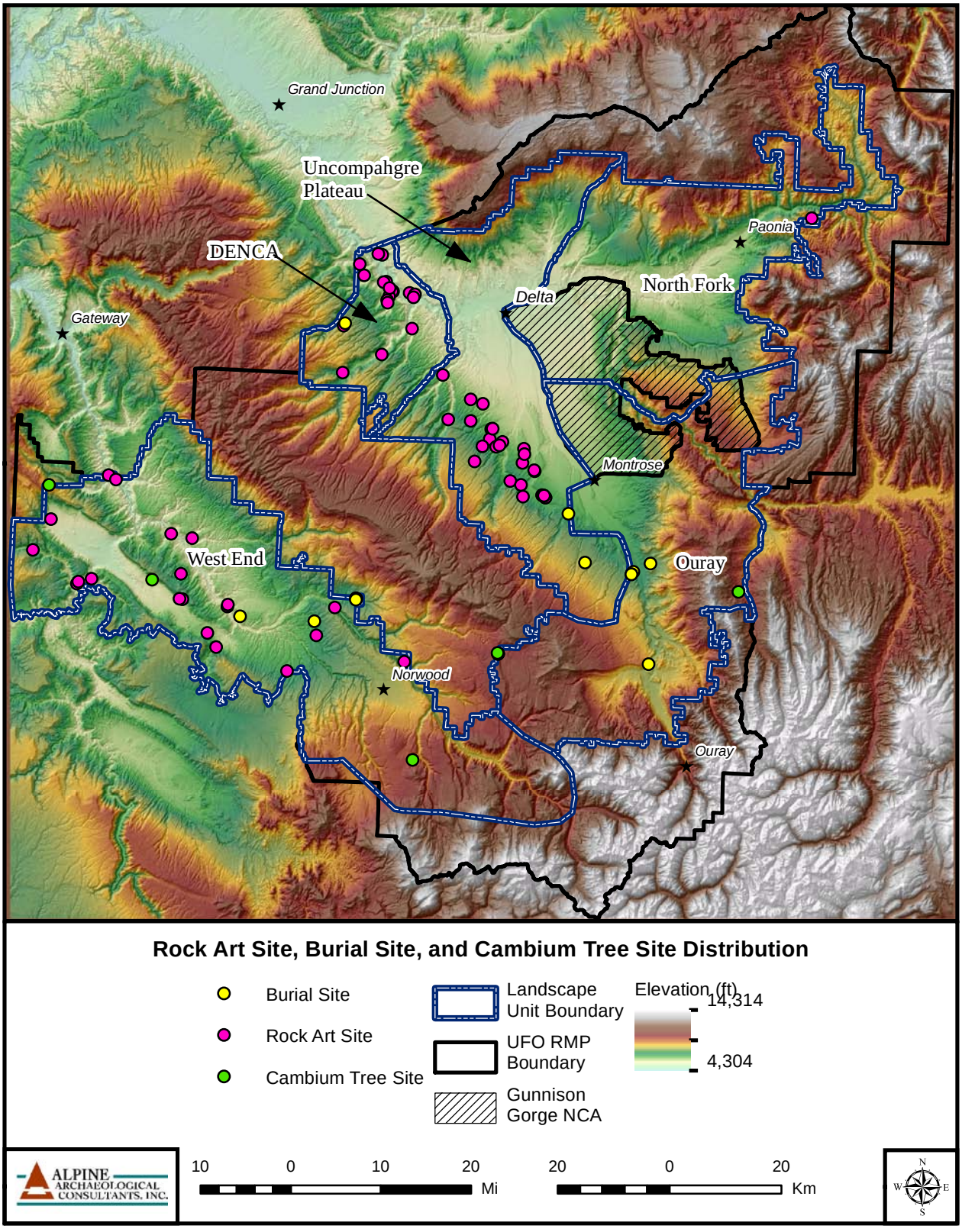


Figure 11. Distribution of rock art, burial, and cambium tree sites within the Uncompahgre Field Office.

For Official Use Only: Disclosure of site locations prohibited (43 CFR 7.18).

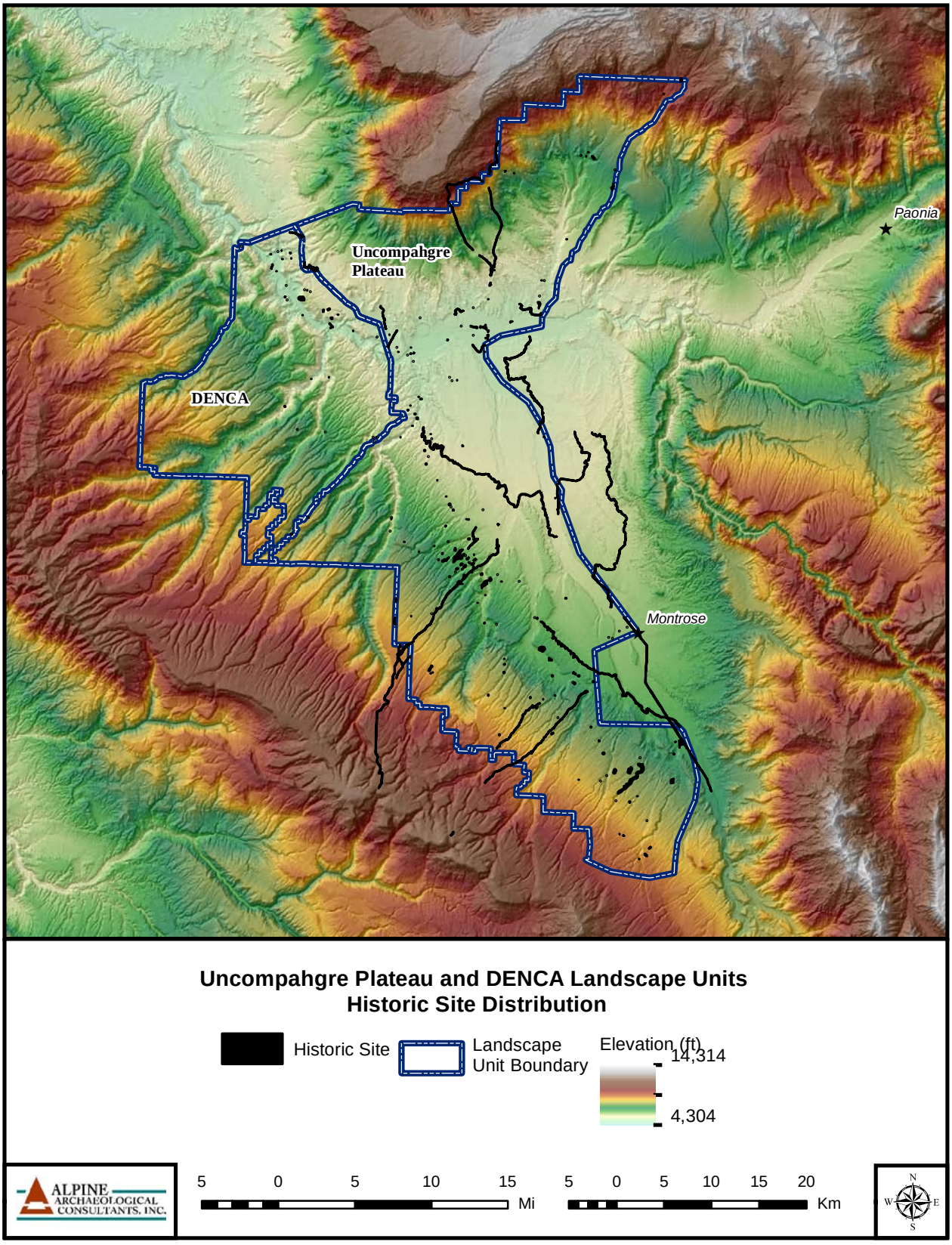


Figure 12. Distribution of historic sites within the DENCA and Uncompahgre Plateau LUs.

Table 11. Historic Research Types in the Dominguez-Escalante NCA Landscape Unit.

Research Theme	Frequency	Percentage
Communication	0	0.0
Government	0	0.0
Industry	3	7.7
Recreation	0	0.0
Rural Agriculture	8	20.5
Settlement	6	15.4
Transportation	7	17.9
Water Control and Distribution	1	2.6
Unknown/Other	14	35.9
TOTAL	**39**	**100.0**

Archaeological Units/Time Periods Represented

Where possible, sites within landscape units were broadly categorized into archaeological units based on diagnostic artifacts, architecture (such as wickiups) and, in the case of excavated sites, radiocarbon dates. Each of the six defined cultural affiliations are present in the DENCA landscape unit and include 155 unknown prehistoric sites (Figure 13), 1 Paleoindian site (Figure 14), 10 Archaic sites (Figure 15), 4 Formative sites (Figure 16), 23 Protohistoric sites (Figure 17), and 1 Historic Native American site (Figure 17). The frequencies of the cultural affiliations in the DENCA landscape unit are summarized in Figure 19 as a bar graph.

The cultural affiliations associated with the open artifact sites include 97 unknown prehistoric, 1 Paleoindian, 5 Archaic, 3 Formative, and 3 Protohistoric sites. The cultural affiliations associated with the 20 rock art sites include 12 unknown cultural affiliations, 5 Archaic, 1 Formative, 4 Protohistoric, and 1 Historic Native American site, with several sites associated with multiple cultural affiliations. The Dry Forks Petroglyph site and the Musser Petroglyph Site (also known as the Escalante Crossing Petroglyph site) are both considered to be associated with Ute occupation of western Colorado. The only other named site associated with a specific cultural affiliation is the Petroglyphs in Leonard's Basin, which is associated with the Formative and Archaic eras. Of the 32 sheltered artifacts sites, only one site is associated with a specific cultural affiliation. Site 5DT14 is associated with the Protohistoric era, whereas the remaining 31 sites have an unknown cultural affiliation. All 17 of the wickiup sites in the DENCA landscape unit are associated with Ute or Historic Ute occupation, and have been assigned to the Protohistoric era. Six of the seven open architectural sites have an unknown prehistoric cultural affiliation and the remaining site is associated with the Archaic era. The three sheltered architectural sites all have an unknown prehistoric cultural affiliation and include the Red's Rock Shelter (site 5ME15354). All 10 of the lithic procurement sites have an unknown prehistoric cultural affiliation. Site 5ME14257, a possible human burial, is believed to be associated with the Protohistoric Ute and includes a hearth feature. The historic Euroamerican sites, by definition, all fall within the historic occupation of the study area.

General Patterns of Site Distributions

Many of the prehistoric sites in the DENCA landscape unit cluster around the Gunnison River, which flows through the northeastern portion of the landscape unit. These sites lie at elevations lower than 6,000 ft. asl, and not surprisingly are located within 200 m of water sources. Additional sites are present along the western side of the landscape unit within the Uncompahgre Plateau. These sites are distributed along landforms such as Gunnison Gulch, Dry Mesa, Grade Gulch, and Open Draw and lie at higher elevations, with many sites located higher than 7,000 ft. asl. Similar to the prehistoric sites, the historic sites in the DENCA landscape unit cluster to the northeast, near the Gunnison River. Sites located further west on the Uncompahgre Plateau lie along intermittent water sources and generally consist of open camp sites and trash scatters.

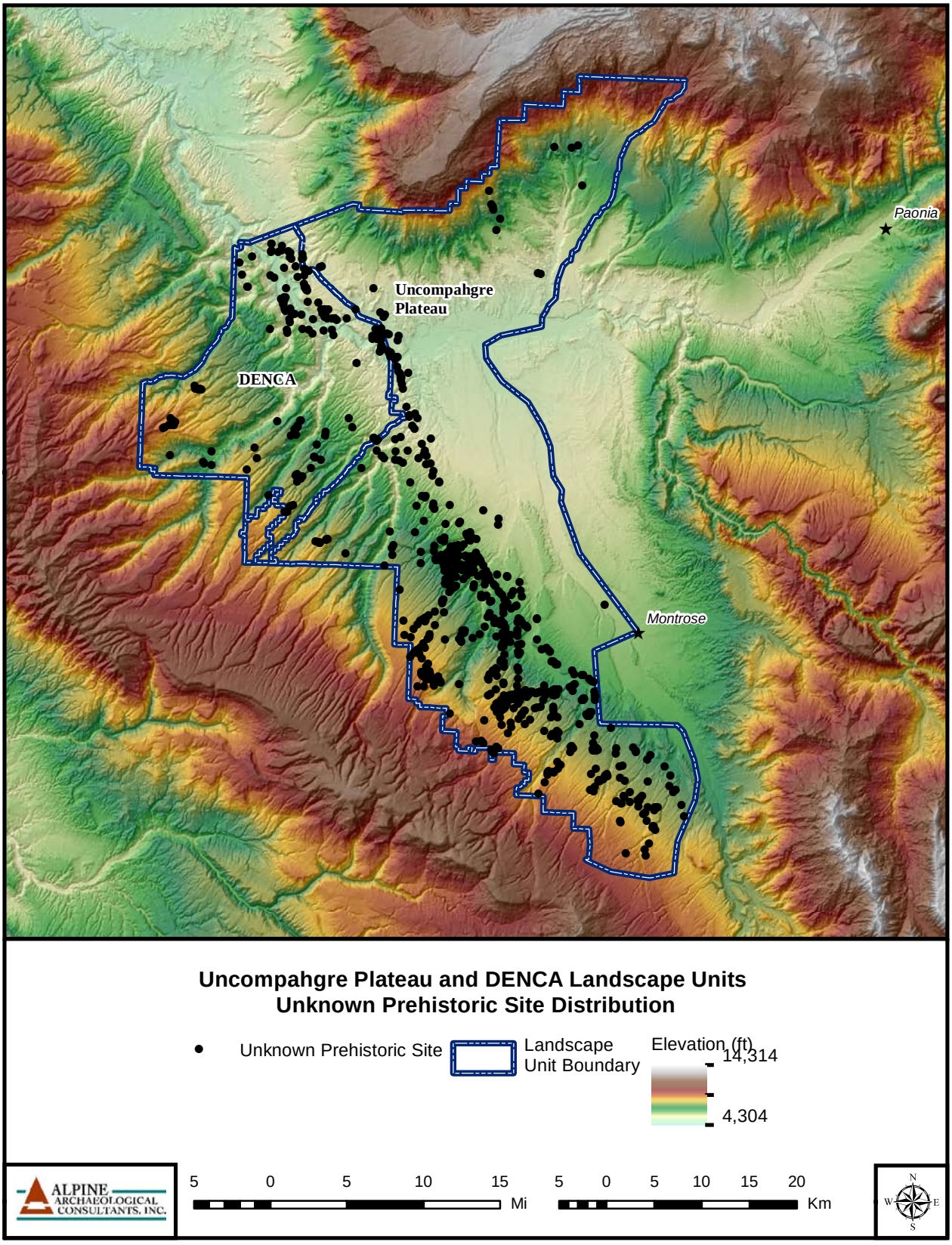


Figure 13. Distribution of prehistoric sites of unknown cultural affiliation within the DENCA and Uncompahgre Plateau LUs.

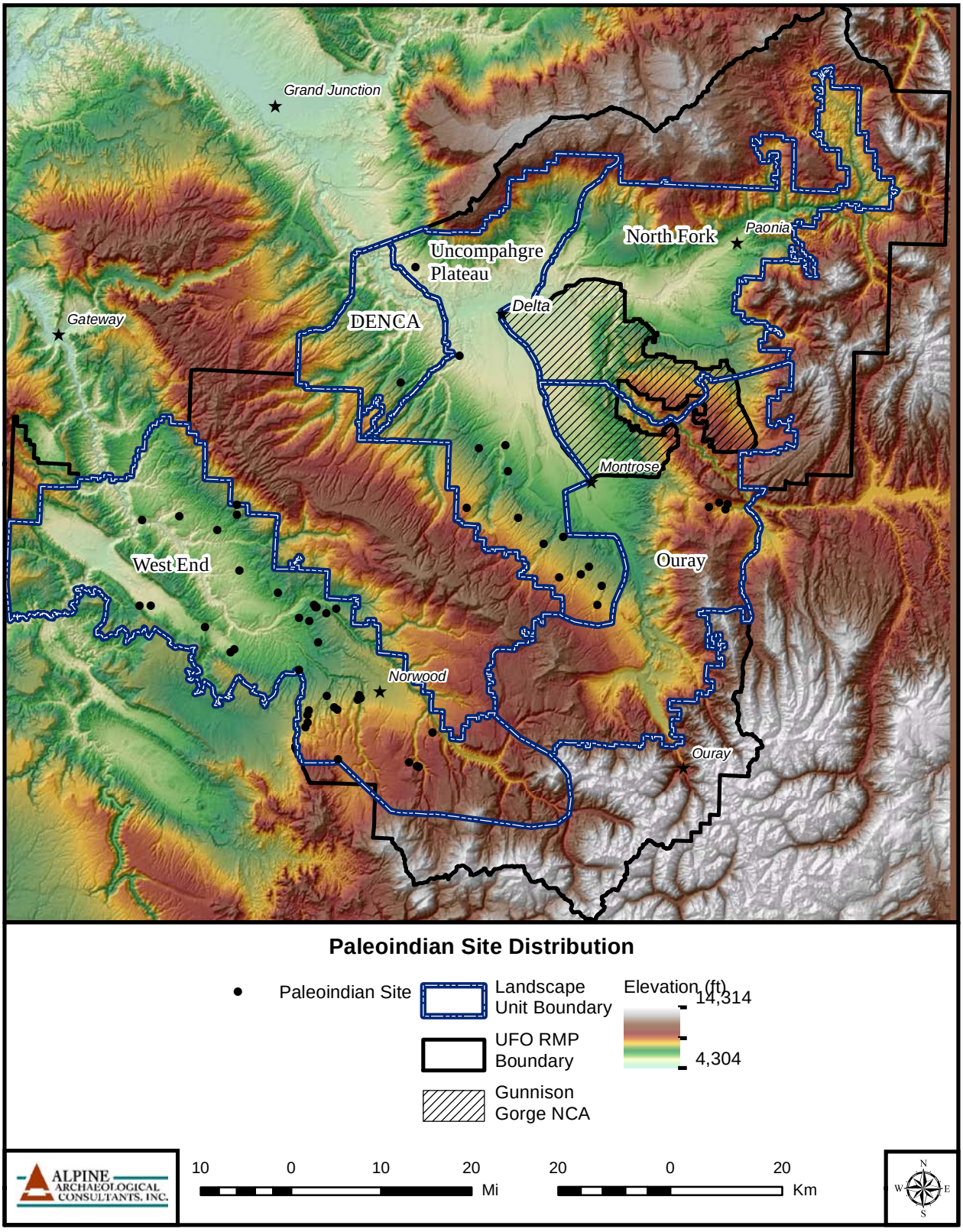


Figure 14. Distribution of all known Paleoindian sites within the Uncompahgre Field Office.

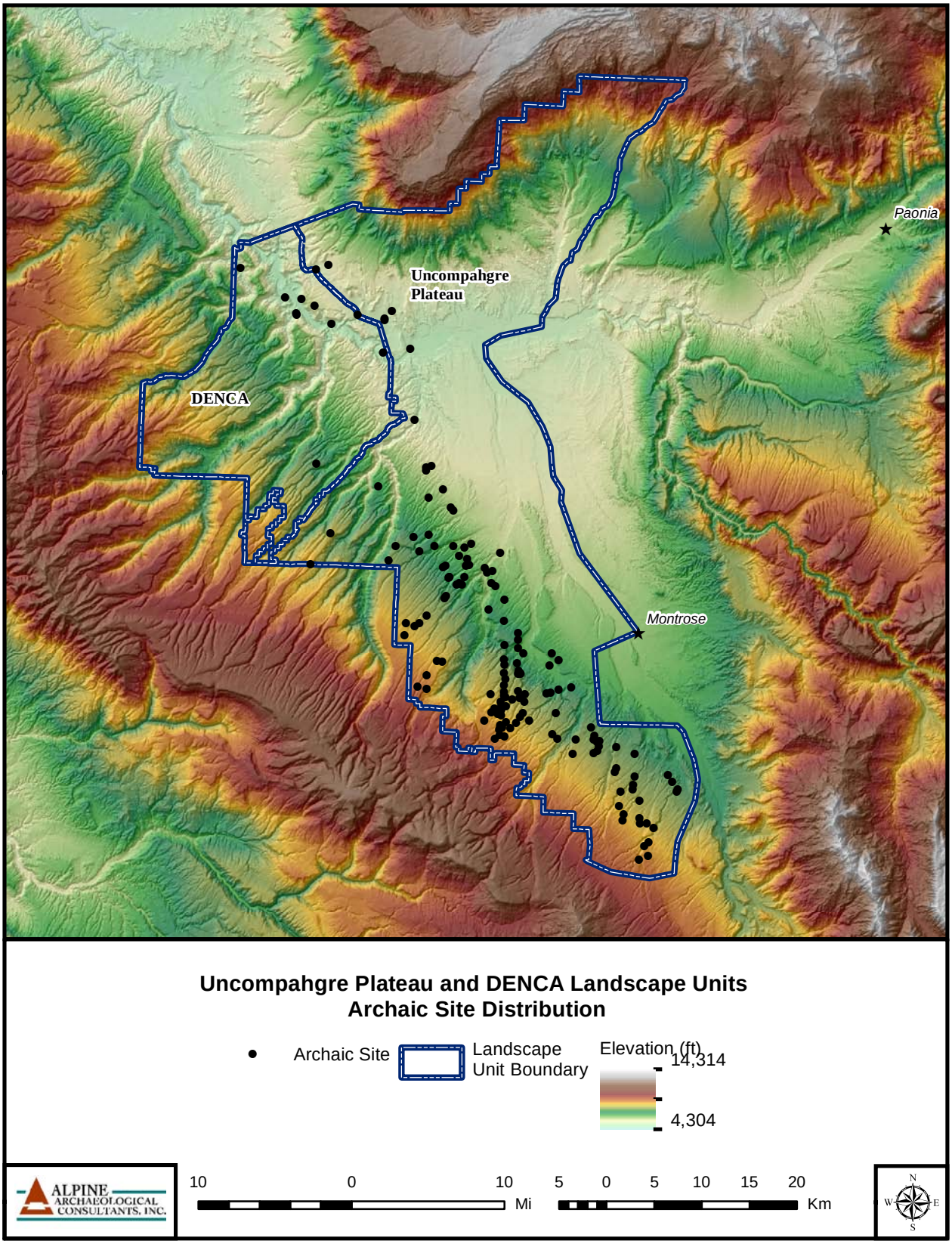


Figure 15. Distribution of known Archaic sites within the DENCA and Uncompahgre Plateau LUs.

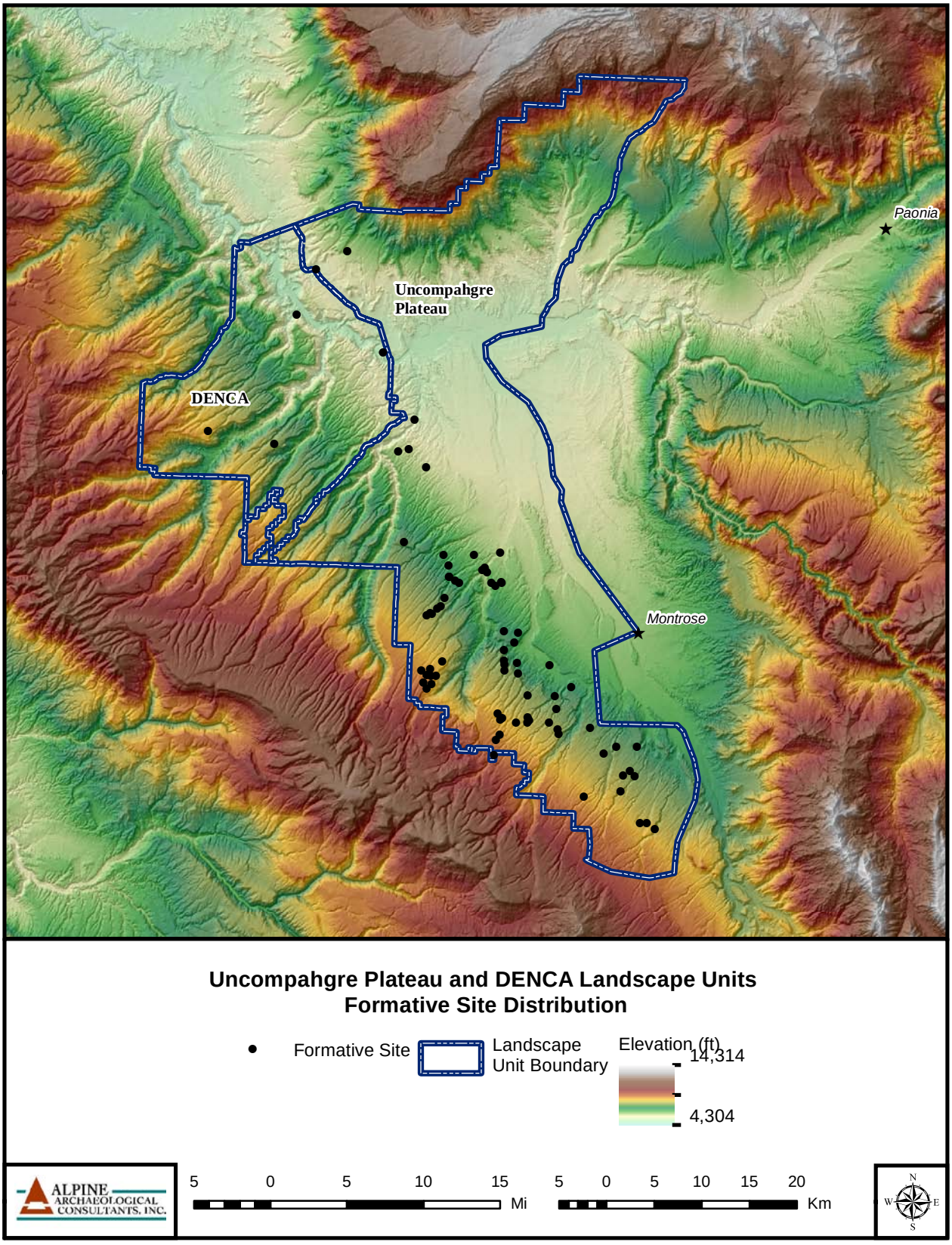


Figure 16. Distribution of known Formative sites within the DENCA and Uncompahgre Plateau LUs.

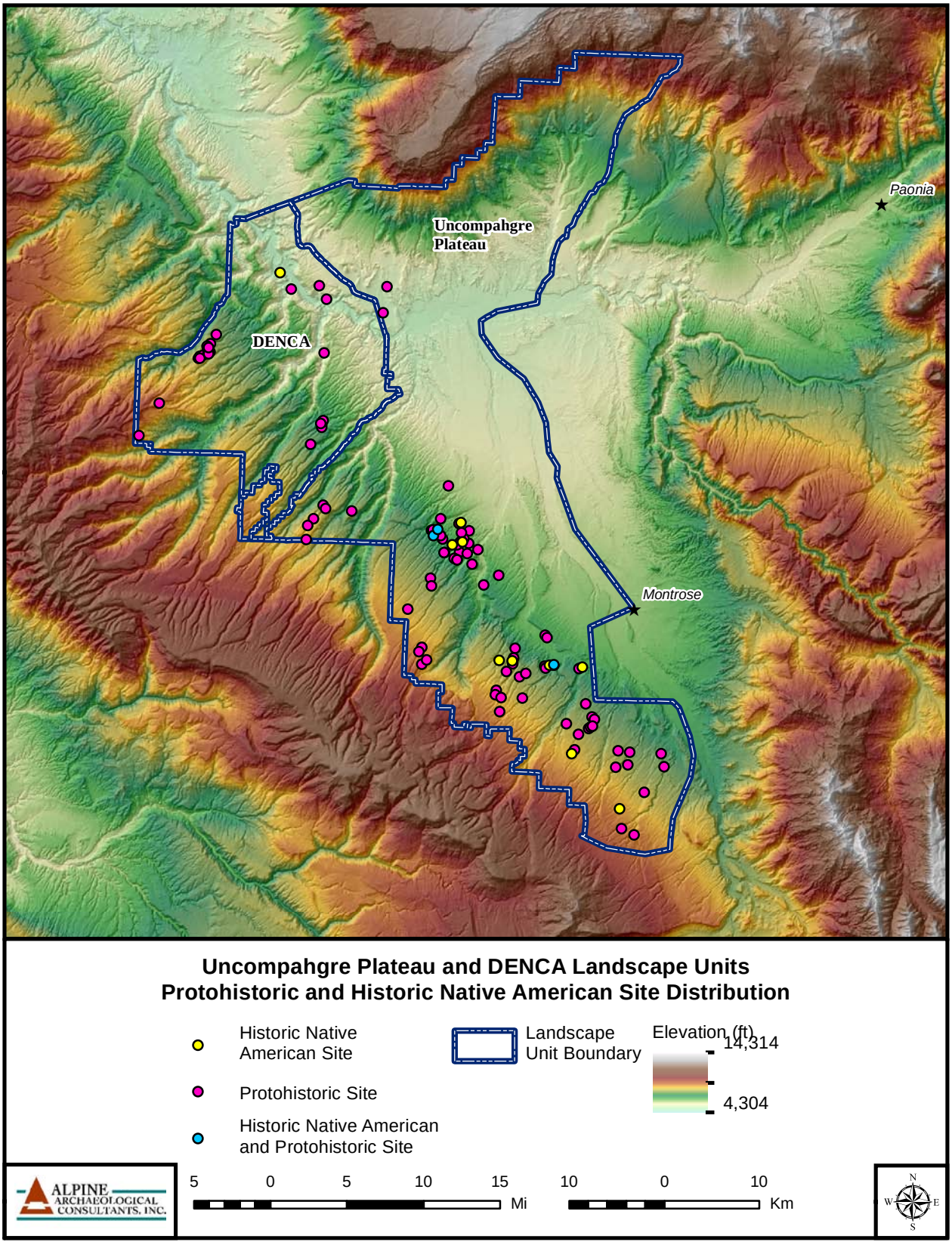


Figure 17. Distribution of known Protohistoric and Historic Native American sites within the DENCA and Uncompahgre Plateau LUs.

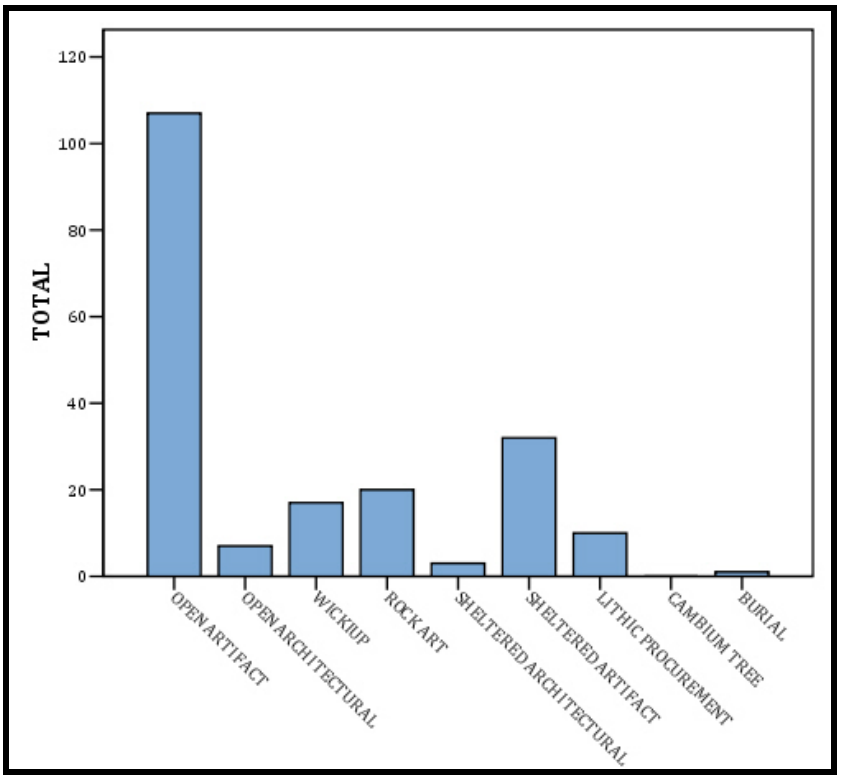


Figure 18. Distribution of prehistoric site types in the Dominguez-Escalante NCA landscape unit.

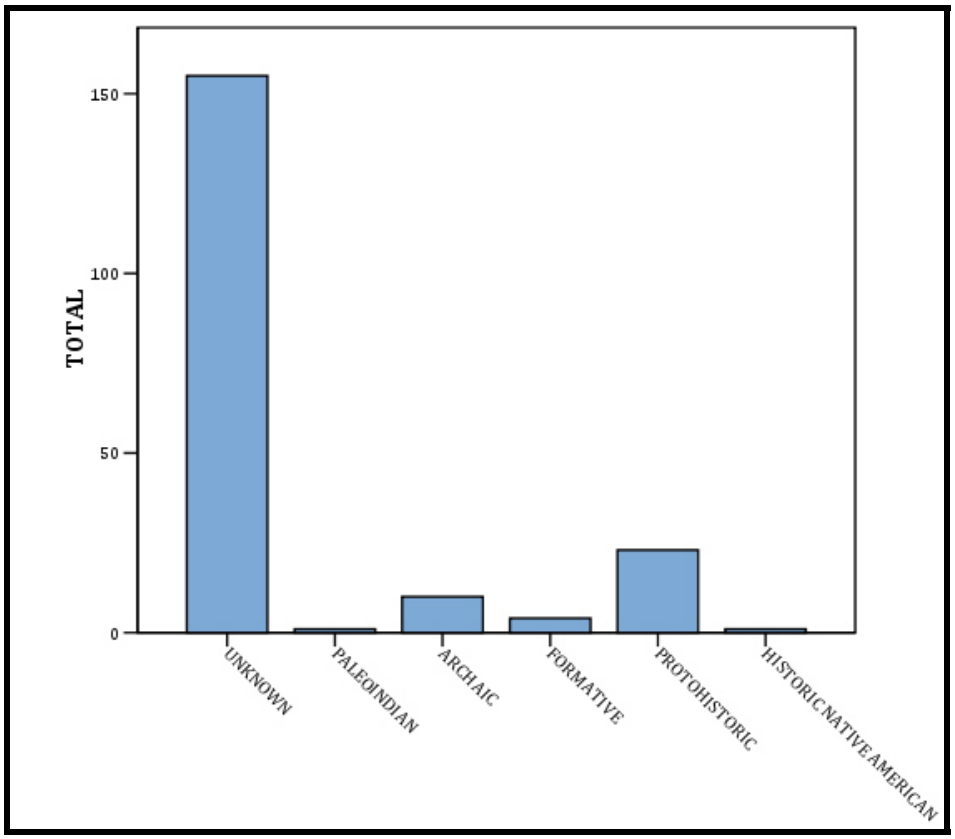


Figure 19. Distribution of cultural affiliation types in the Dominguez-Escalante NCA landscape unit.

North Fork Landscape Unit

Site Types and Frequencies

The North Fork landscape unit contains a total of 371 cultural resource sites. Of these resources, 51 are prehistoric sites, 188 are historic sites, 116 are prehistoric isolated finds or features, and 16 are historic isolated finds or features.

The distribution of prehistoric sites by type within the North Fork landscape unit is shown in Figure 11, Figure 20, and Figure 21. Prehistoric site types in the North Fork landscape unit are limited to open artifact sites, open architectural sites, and a rock art site, for a total of 51 prehistoric site types. The frequencies of site types found in the North Fork landscape unit are presented as a bar graph in Figure 27. The most prevalent prehistoric resource type within the North Fork landscape unit is the open artifact site, which accounts for 94.1 percent of the total sample with 48 sites present. The only other site types present in the North Fork landscape unit include two open architectural sites and one rock art site. Both open architectural sites are game blinds. The one rock art site, site 5GN2667, contains one rock art panel, but is not described as either a petroglyph or pictograph site.

The distribution of historic sites within the North Fork landscape unit is shown in Figure 22. The North Fork landscape unit contains 188 historic sites, representing six of the eight major research themes (Table 12). Absent from this unit are any recreation and communication themed sites. Transportation-related sites include 2 road segments, 5 bridges, 1 culvert, and 4 railroad-related sites, for a total of 12 sites. Fifteen of the sites are classified under the water control and distribution theme and include 13 canals and two dams.

Table 12. Historic Research Types in the North Fork Landscape Unit.

Research Theme	Frequency	Percentage
Communication	0	0.0
Government	1	< 1.0
Industry	19	10.1
Recreation	0	0.0
Rural Agriculture	49	26.0
Settlement	87	46.5
Transportation	12	6.3
Water Control and Distribution	15	8.0
Unknown/Other	5	2.6
TOTAL	**188**	**100.0**

Eighty-seven of the sites in the North Fork landscape unit are classified under the settlement theme. Most of these sites are associated with in-town settlement and include historic structures such as hotels, restaurants, cemeteries, schools, theaters, and commercial buildings. There are 49 rural agricultural-related sites in the North Fork landscape unit. Fifteen of the agricultural sites can be more specifically assigned to agricultural homesteading and another 13 sites are specific to ranching activities. The remaining 21 sites are affiliated with rural homesteading, but not specifically to farming or ranching purposes. Nineteen sites are classified under the industry theme. Seven of these sites are directly associated with coal mining operations and another seven to general mining activities. The remaining five industry-related sites include 2 dairy processing plants, 1 fish hatchery, 1 warehouse, and 1 power station. The only government-related site in the North Fork landscape unit consists of a survey marker from 1885. Finally, there are five sites, all consisting of open trash scatters, within the North Fork landscape unit that are not assigned to a specific theme because of the limited nature of the information available from the site recordings.

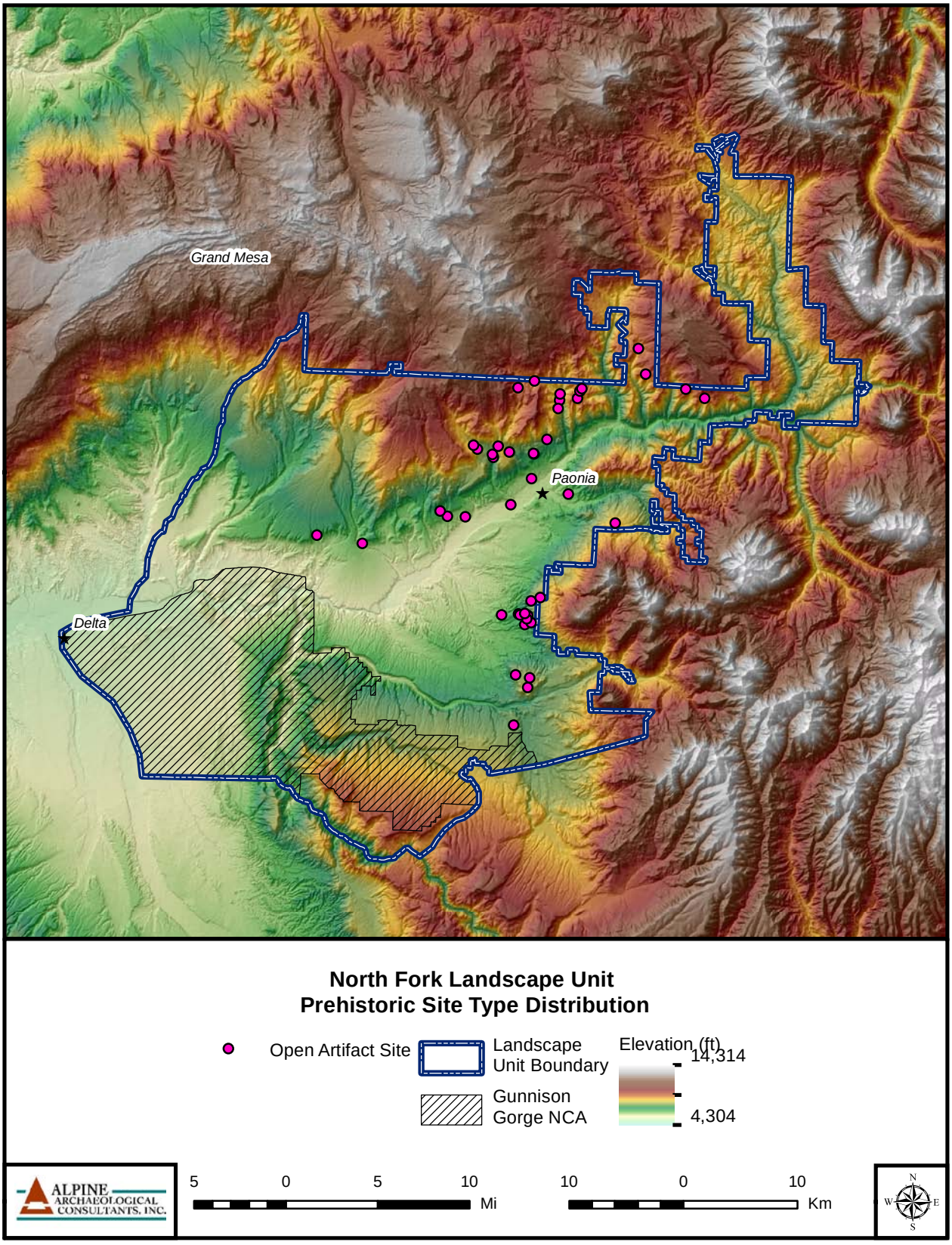


Figure 20. Distribution of open artifact, sheltered artifact, and lithic procurement sites in the North Fork LU.

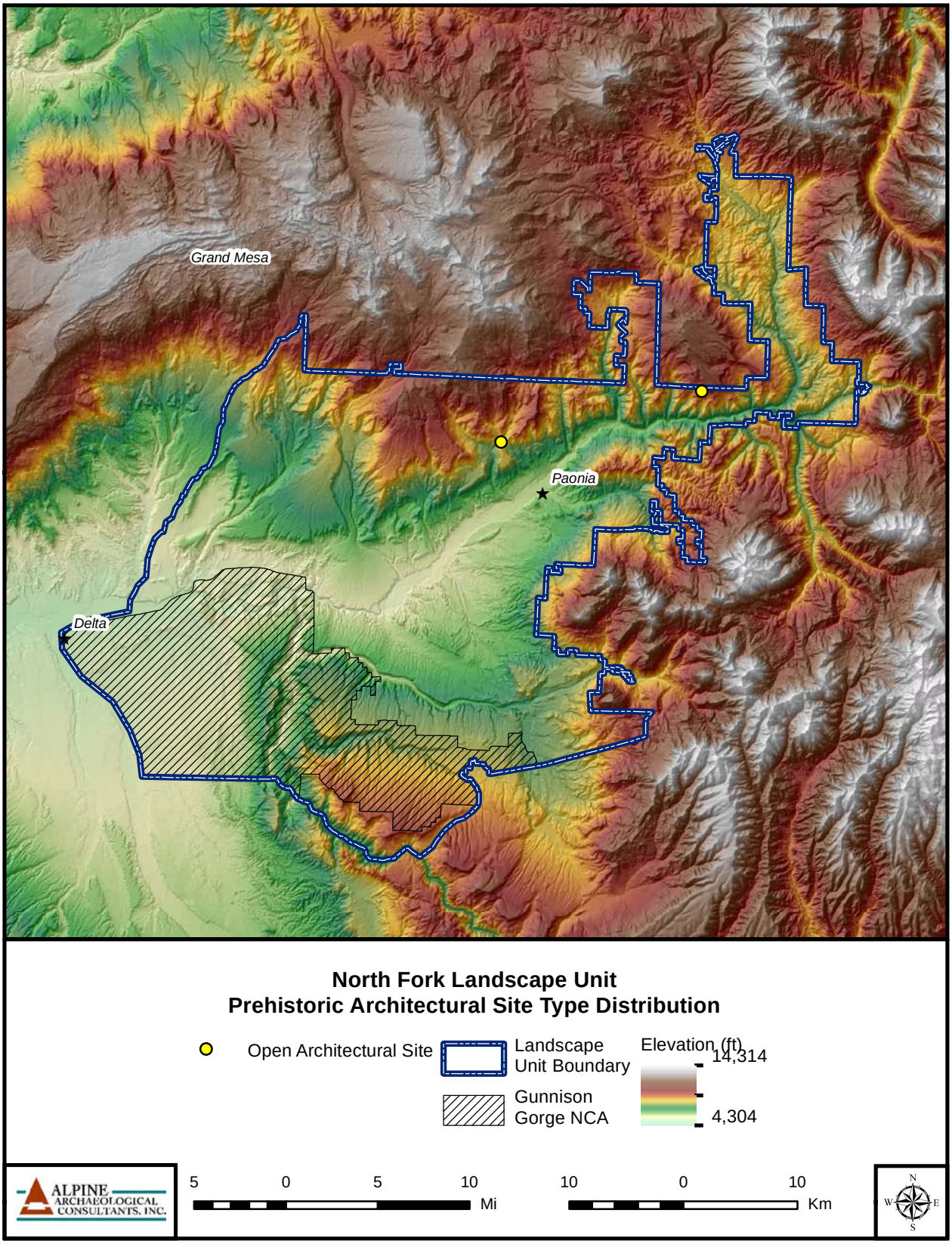


Figure 21. Distribution of open architectural, sheltered architectural, and wickiup sites in the North Fork LU.

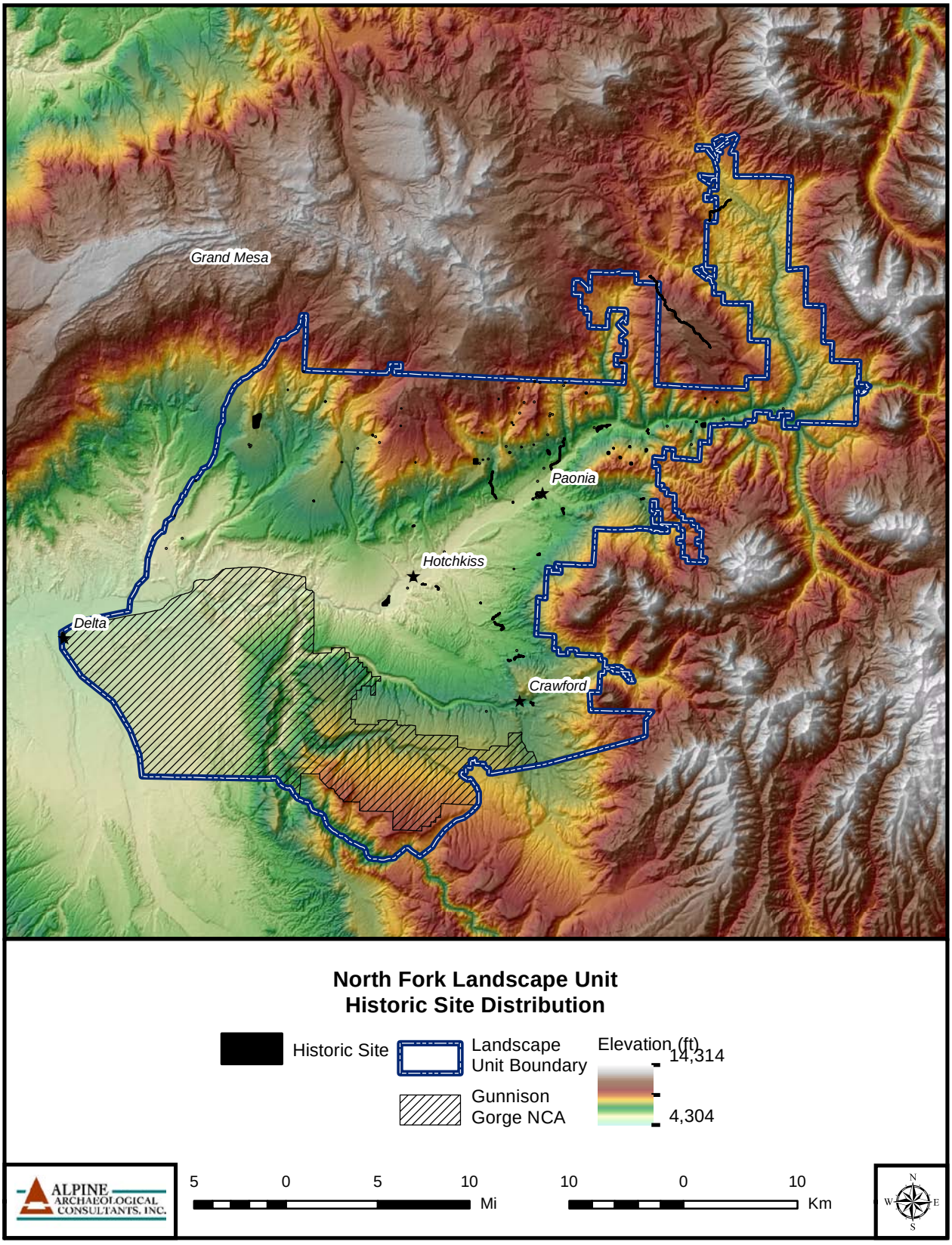


Figure 22. Distribution of historic sites in the North Fork LU.

Archaeological Units/Time Periods Represented

The cultural resource sites within the North Fork landscape unit represent four different prehistoric cultural affiliations and include 42 culturally unaffiliated components, 5 Archaic components, 2 Formative components, and 3 Protohistoric components. Figure 28 summarizes the frequency of cultural affiliations present in the North Fork landscape unit.

Of the 56 open artifact sites present in the North Fork landscape unit, there are 46 culturally unaffiliated components (Figure 23), 5 Archaic components (Figure 24), 2 Formative components (Figure 25), and 4 Protohistoric components (Figure 26). The remaining sites include one culturally unaffiliated rock art site and two culturally unaffiliated open architectural sites. The historic Euroamerican sites, by definition, all fall within the historic occupation of the study area.

General Patterns of Site Distributions

Most of the prehistoric sites in the North Fork landscape unit lie to the north of the North Fork River at an elevation range between 6,001 to 7,000 ft. asl. Primary vegetation types at the sites include pinyon-juniper and sagebrush communities, with the majority of the sites located within a one hour roundtrip walk to a permanent water source. Additional sites lie further to the south along Grand View Mesa and McDonald Mesa. The majority of the recorded historic sites in the North Fork landscape unit lie near established towns and cities, in addition to major waterways, such as the Gunnison River and North Fork River.

Ouray Landscape Unit

Site Types and Frequencies

A total of 793 cultural resource sites are identified within the Ouray landscape unit, including 283 prehistoric sites, 311 historic sites, 157 prehistoric isolated finds or features, and 42 historic isolated finds or features.

The distribution of prehistoric sites by site type in the Ouray landscape unit is shown in Figure 11, Figure 29, and Figure 30. The 284 prehistoric sites in the Ouray landscape unit represent six different prehistoric site types, which are presented in Figure 36. Absent from the Ouray landscape unit are wickiups, rock art sites, and sheltered architectural sites. The most dominant site type present is the open artifact site, which accounts for 259 (91.5 percent) of the site types in the Ouray landscape unit. Other site types present in significantly lower numbers include 8 open architectural sites, 4 sheltered artifact sites, 2 lithic procurement sites, 6 cambium trees, and 5 human burials. The eight open architectural sites consist of four stone circles or alignments and four lodges or homes. All five of the sites contain an artifact assemblage dominated by flaked stone debris and two of the sites contain thermal features and one contains a possible midden deposit. The four sheltered artifact sites all contain features and artifact assemblages dominated by flaked stone debris. The data available are limited for the two lithic procurement sites present in the Ouray landscape unit, with no information provided regarding the type of raw material procured at either site. The Ouray landscape unit has more human burials than any other landscape unit, with five sites present. None of the cambium tree sites in Ouray landscape unit have any artifacts associated with them or are associated with any other site type. The cultural affiliations associated with these site types present in the Ouray landscape unit are described in greater detail below.

The distribution of historic sites within the Ouray landscape unit is shown in Figure 31. The Ouray landscape unit contains 311 historic sites, representing all eight of the major research themes (Table 13). The Ouray landscape unit contains 116 settlement-related sites, most of which represent in-town historic structures, such as grocery stores, restaurants, saloons, and cemeteries. An additional 48 sites are assigned to the transportation theme and include 22 road segments, 12 railroad grades, 2 railroad depots, 6 bridges, 1 airstrip, 4 culverts, and 1 stage stop. Twenty-six sites are associated with water control and distribution and include 23 ditches or canals, 1 dam, and 1 water tank. In addition, the Gunnison Tunnel (site 5MN1837) passes through the Ouray landscape unit.

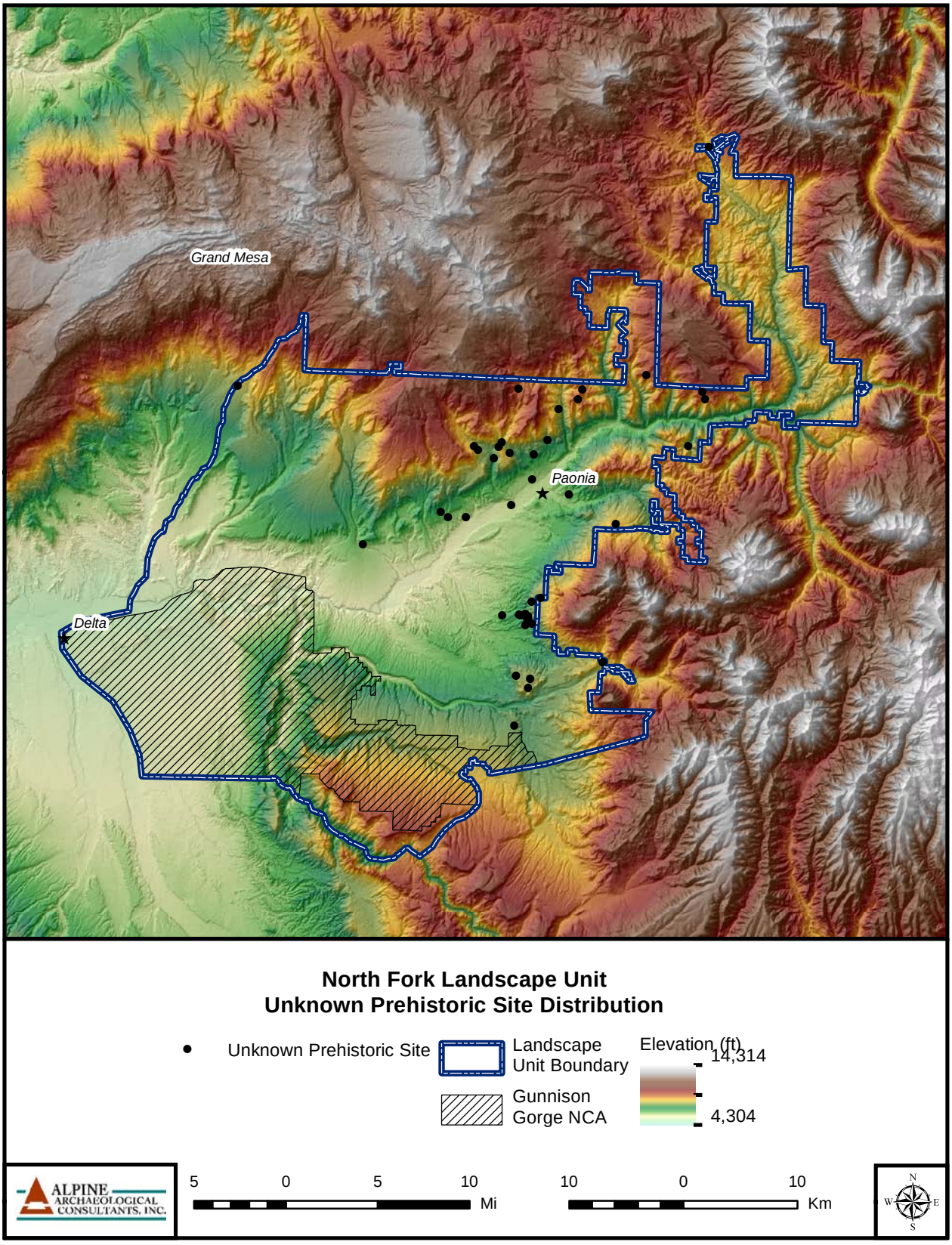


Figure 23. Distribution of prehistoric sites of unknown cultural affiliation within the North Fork LU.

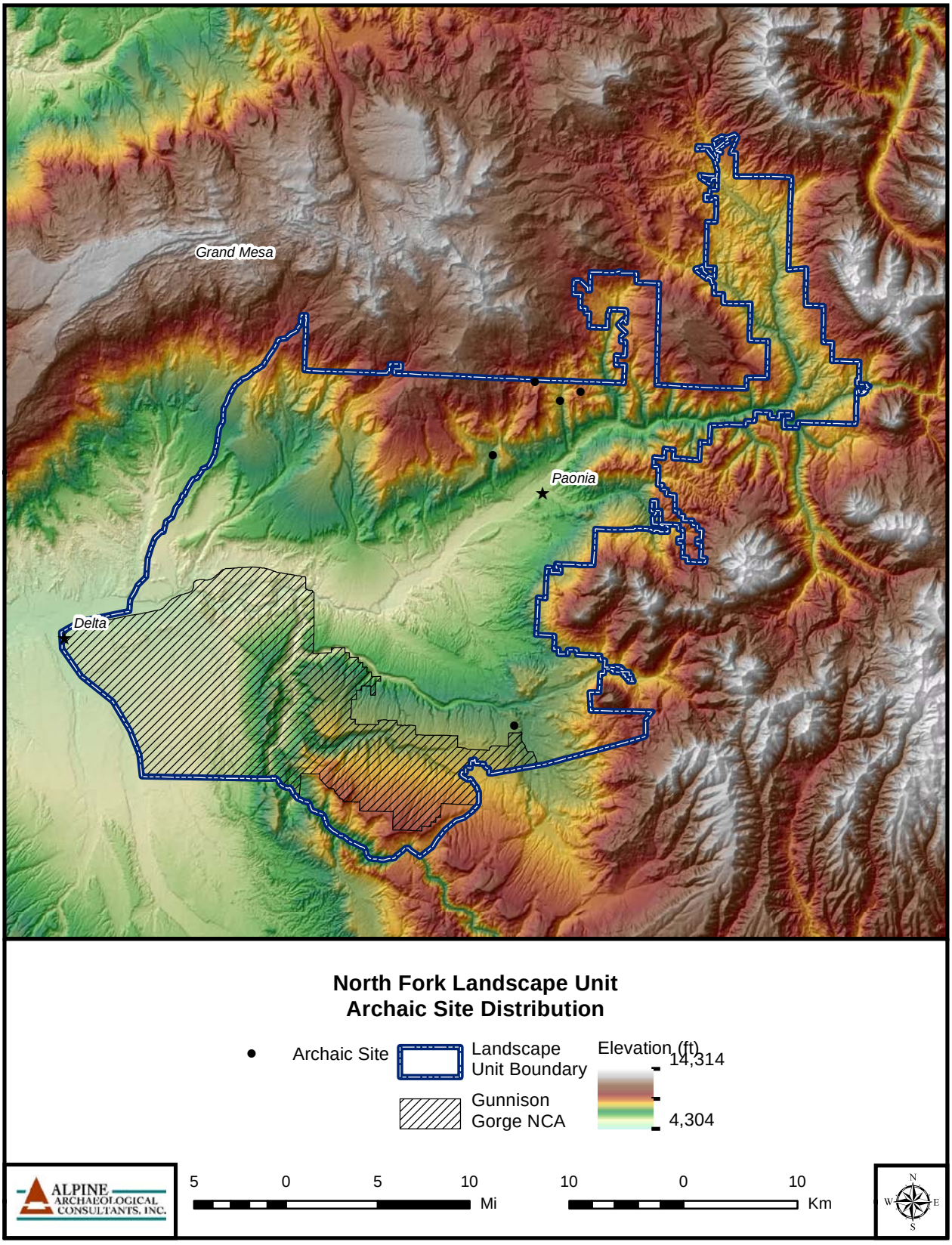


Figure 24. Distribution of known Archaic sites within the North Fork LU.

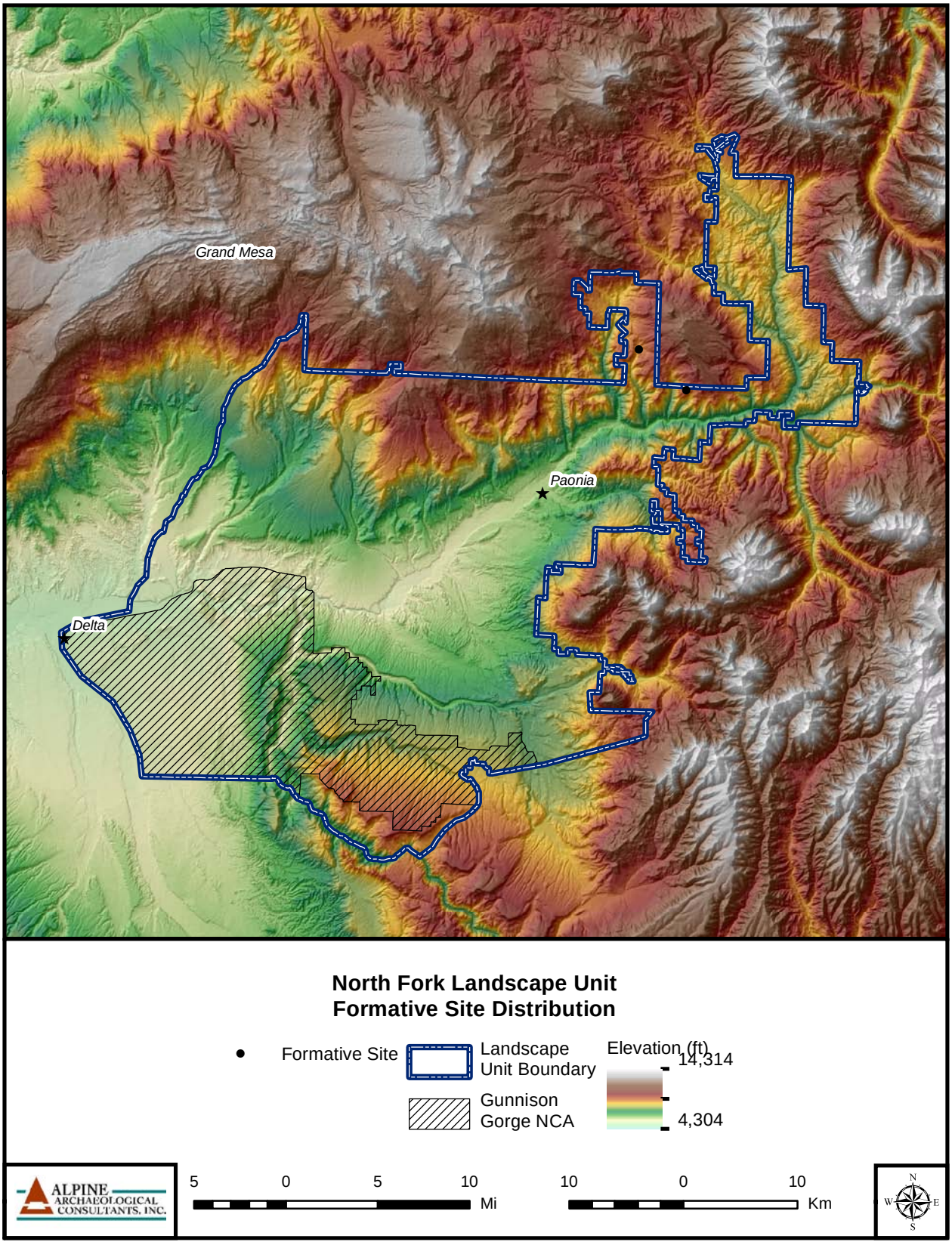


Figure 25. Distribution of known Formative sites within the North Fork LU.

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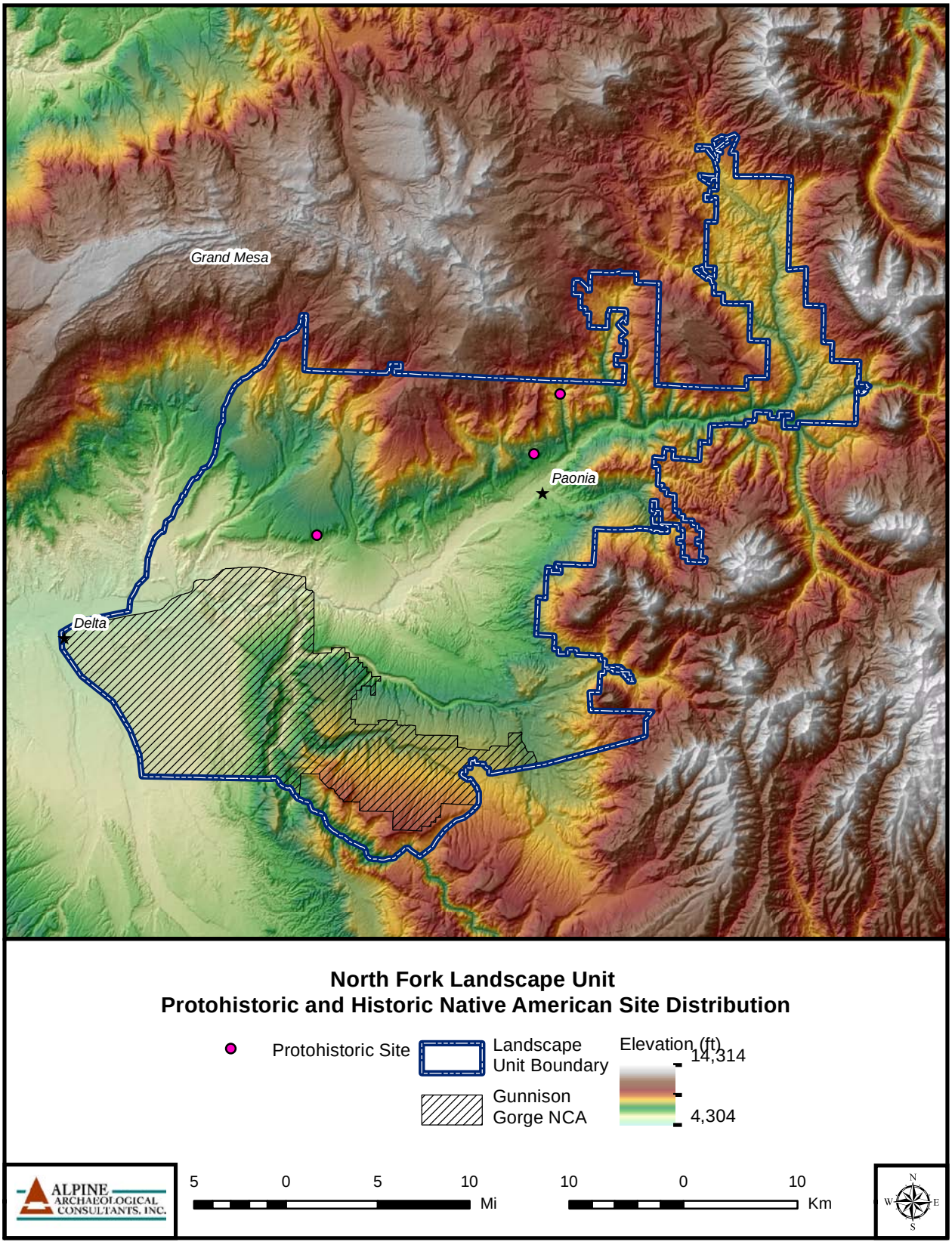


Figure 26. Distribution of known Protohistoric sites within the North Fork LU.

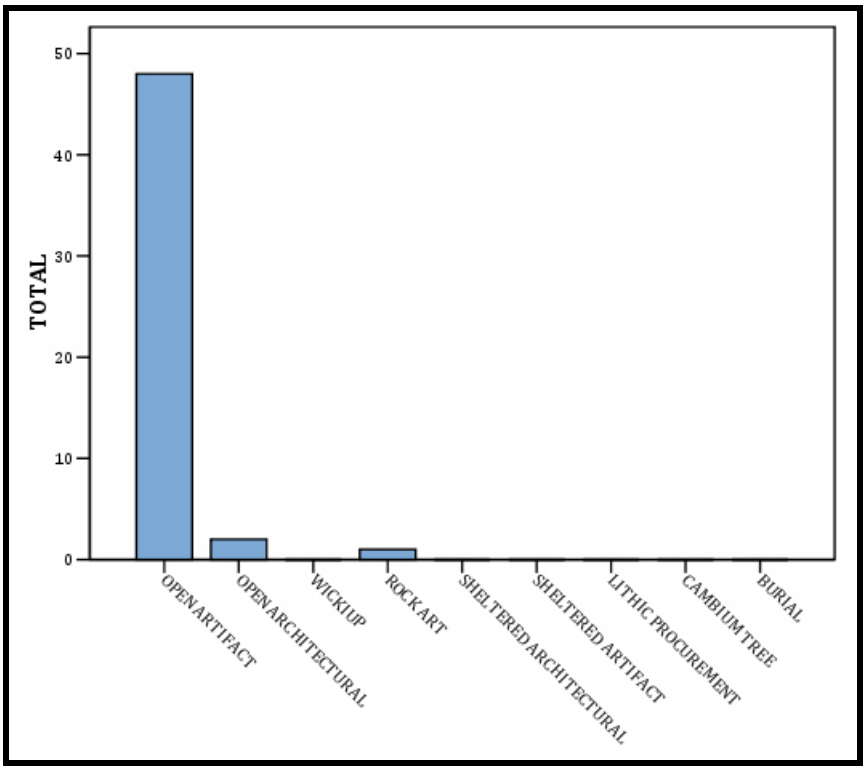


Figure 27. Bar graph representing prehistoric site types in the North Fork Landscape Unit.

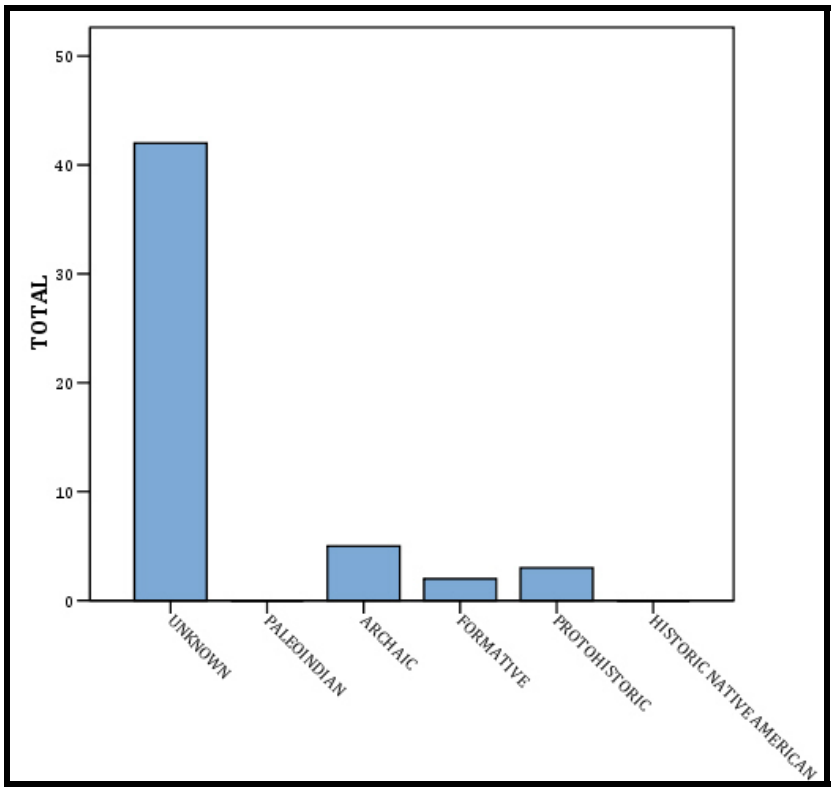


Figure 28. Distribution of prehistoric cultural affiliations in the North Fork landscape unit.

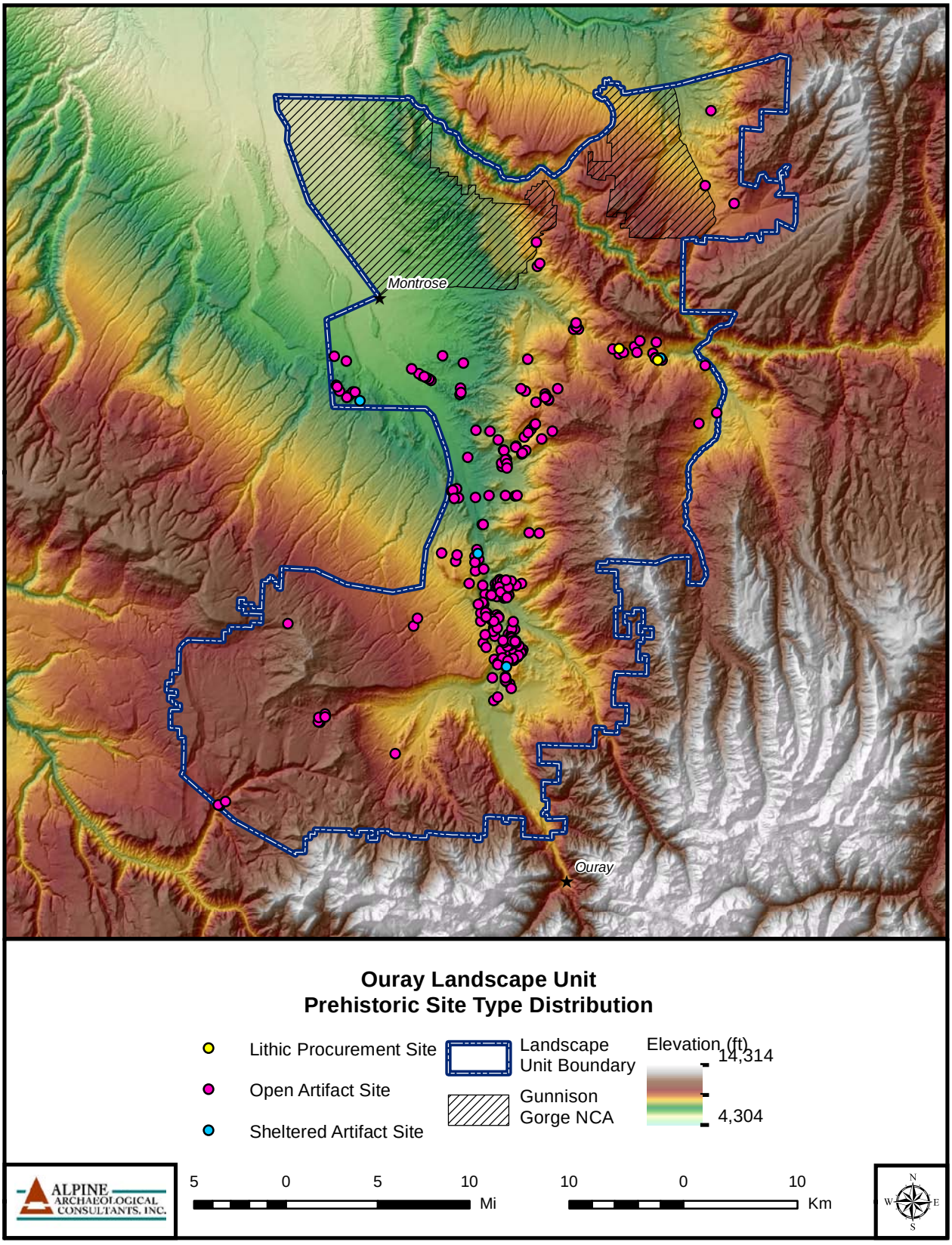


Figure 29. Distribution of open artifact, sheltered artifact, and lithic procurement sites in the Ouray Area LU.

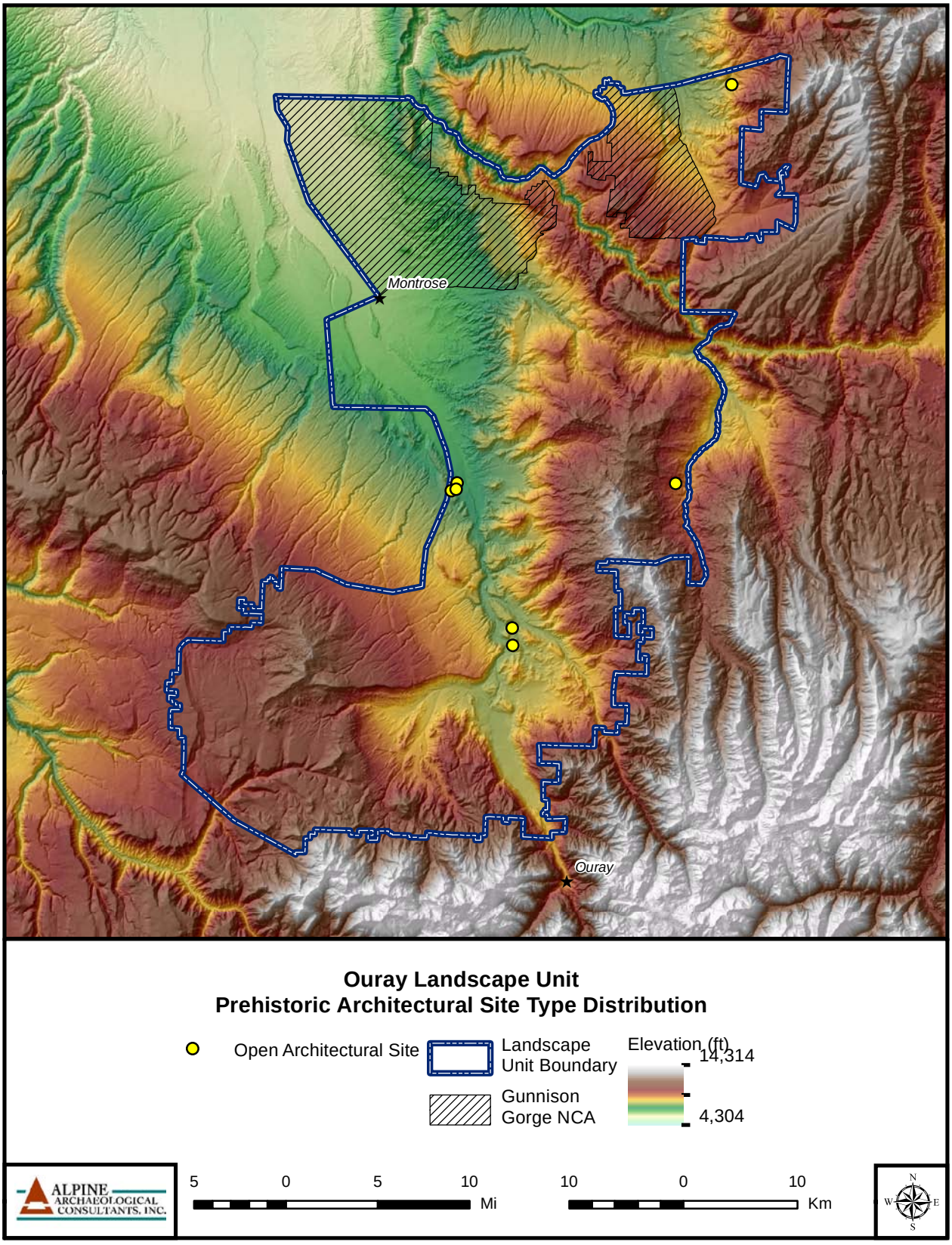


Figure 30. Distribution of open architectural, sheltered architectural, and wickiup sites in the Ouray Area LU.

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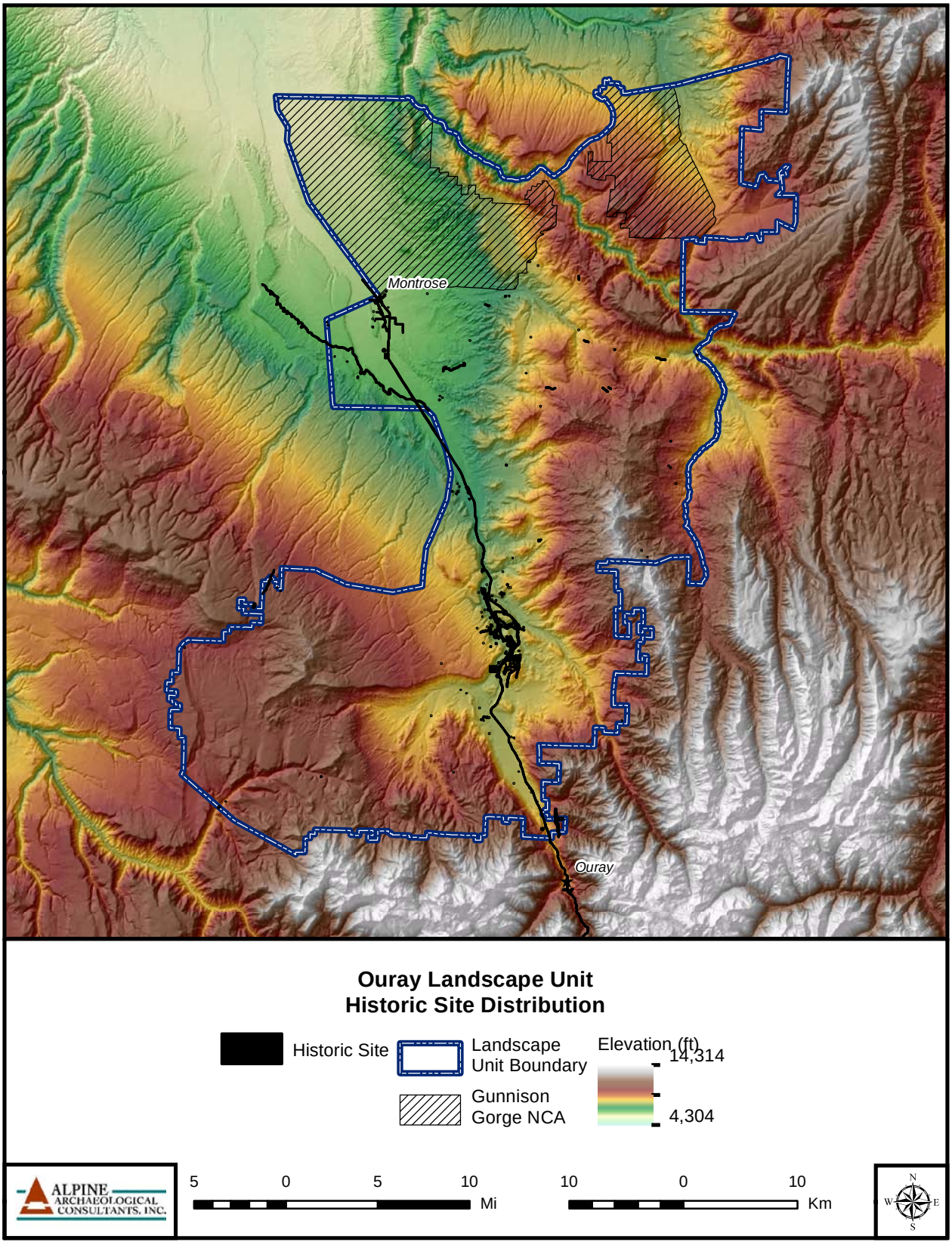


Figure 31. Distribution of historic sites in the Ouray Area LU.

Table 13. Historic Research Types in the Ouray Landscape Unit.

Research Theme	Frequency	Percent
Communication	1	0.3
Government	2	0.6
Industry	31	9.7
Recreation	1	0.3
Rural Agriculture	57	17.8
Settlement	116	36.1
Transportation	48	15.0
Water Control and Distribution	26	8.1
Unknown/Other	39	12.1
TOTAL Research Themes	**321†**	**100.0**

† Represents 311 historic sites.

Rural agricultural-related sites in this unit include 22 farming-related homesteads and 21 sites related to ranching activities. In addition, there are 14 rural agricultural sites not specific to either farming or ranching operations, for a total of 57 rural agricultural sites. Thirty-one sites are associated with industrial operations, 16 of which are directly related to mining activities, including seven placer mines. Other industrial-related sites include several mills and quarries.

The Ute Memorial site (site 5MN1841) represents the only recreation-themed site in the Ouray landscape unit and one telephone pole (site 5MN4807) comprises the only communication-related site. The two government-related sites in the Ouray landscape unit consist of Indian Agency buildings associated with the Los Pinos and Uncompahgre Ute tribes. The remaining 39 sites in the Ouray landscape unit are not assigned to a specific historic theme and include open trash scatters, stone alignments, log piles, and dugouts.

Archaeological Units/Time Periods Represented

The Ouray landscape unit contains 296 cultural components, including 222 culturally unaffiliated components (Figure 32), 4 Paleoindian components (Figure 14), 30 Archaic components (Figure 33), 10 Formative components (Figure 34), 20 Protohistoric components (Figure 35), and 9 Historic Native American components (Figure 35). Figure 37 summarizes the frequencies of cultural affiliations present in the Ouray landscape unit.

There are 213 open artifact scatters that have no specific cultural affiliation, 3 Paleoindian components, 29 Archaic components, 10 Formative components, 11 Protohistoric components, and 3 historic Native American components. The eight open architectural sites include three culturally unaffiliated sites and five sites assigned to a specific cultural affiliation, including one Protohistoric site and four historic Native Americans sites. The four historic Native American sites include Jutten Lodges (site 5OR1065), Many Bullet's Lodge (site 5OR1062), Chief Ouray's Home (site 5MN847), and Cleaver Lodge (site 5MN4773). The four sheltered artifact sites in the Ouray landscape unit include three culturally unaffiliated components, two Archaic components, and one Protohistoric component. The two lithic procurement sites in the Ouray landscape unit include one questionable Paleoindian affiliation and one culturally unaffiliated site. The six cambium tree sites are considered to be associated with Ute occupation of western Colorado, or more broadly, the Protohistoric era.

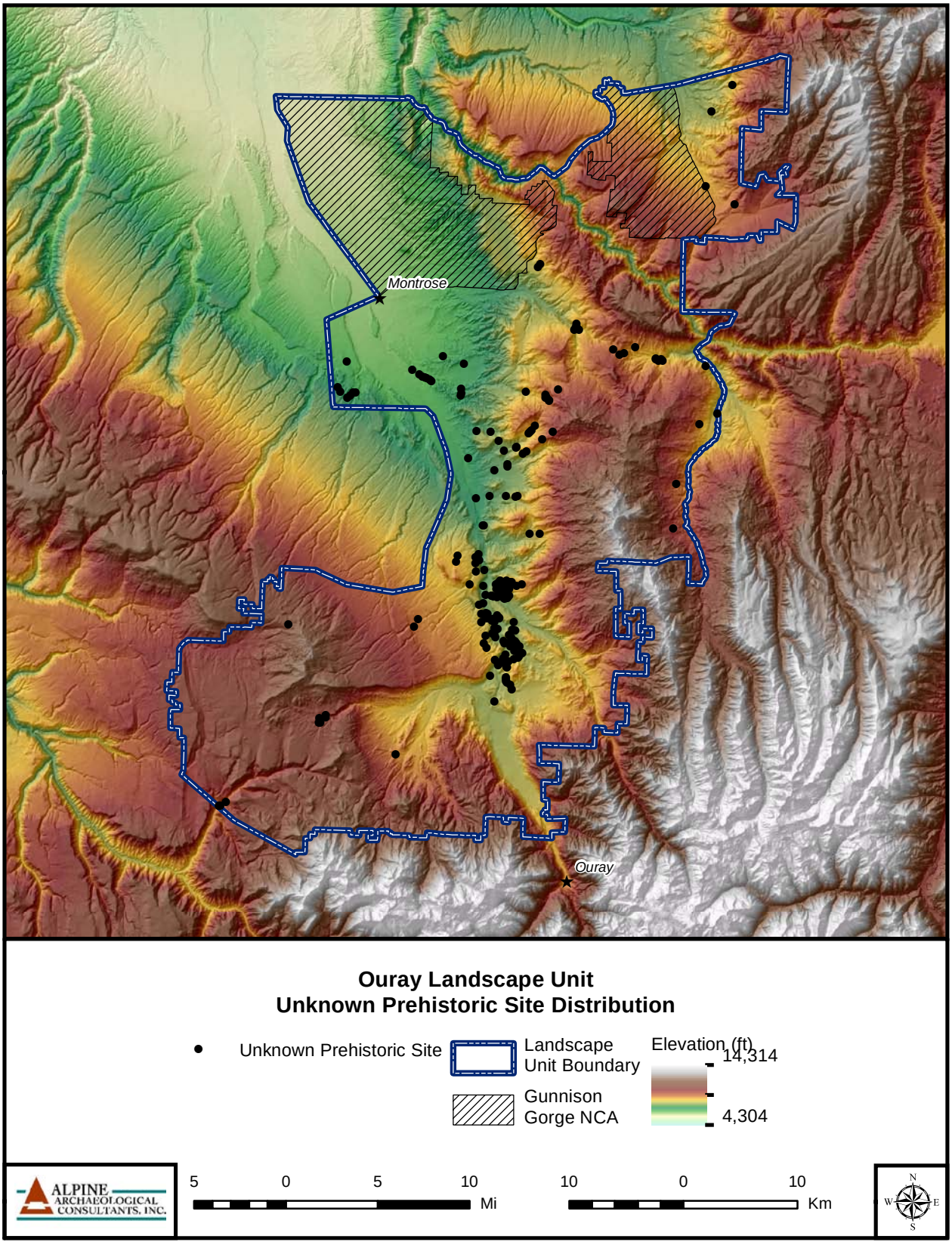


Figure 32. Distribution of prehistoric sites of unknown cultural affiliation within the Ouray Area LU.

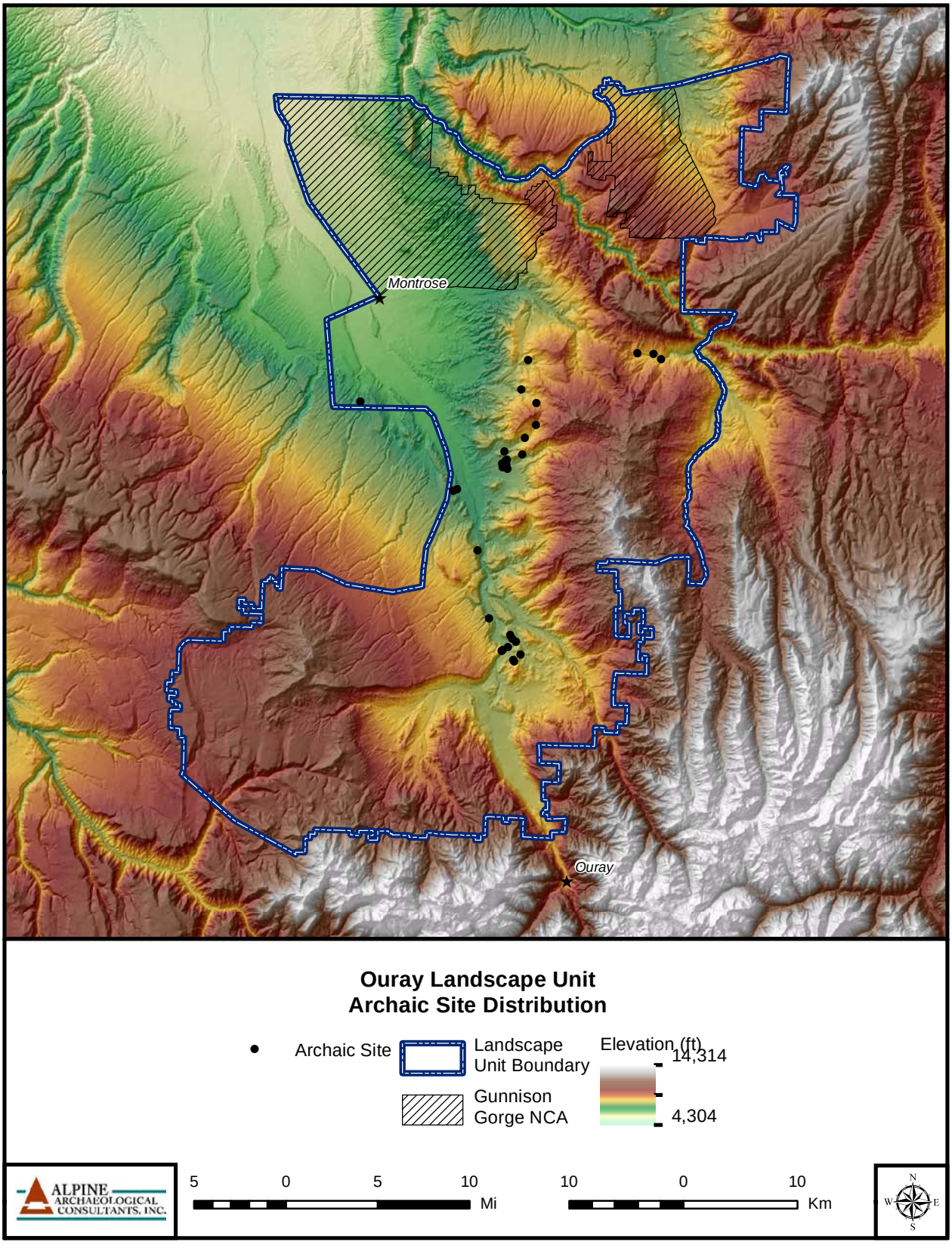


Figure 33. Distribution of known Archaic sites within the Ouray Area LU.

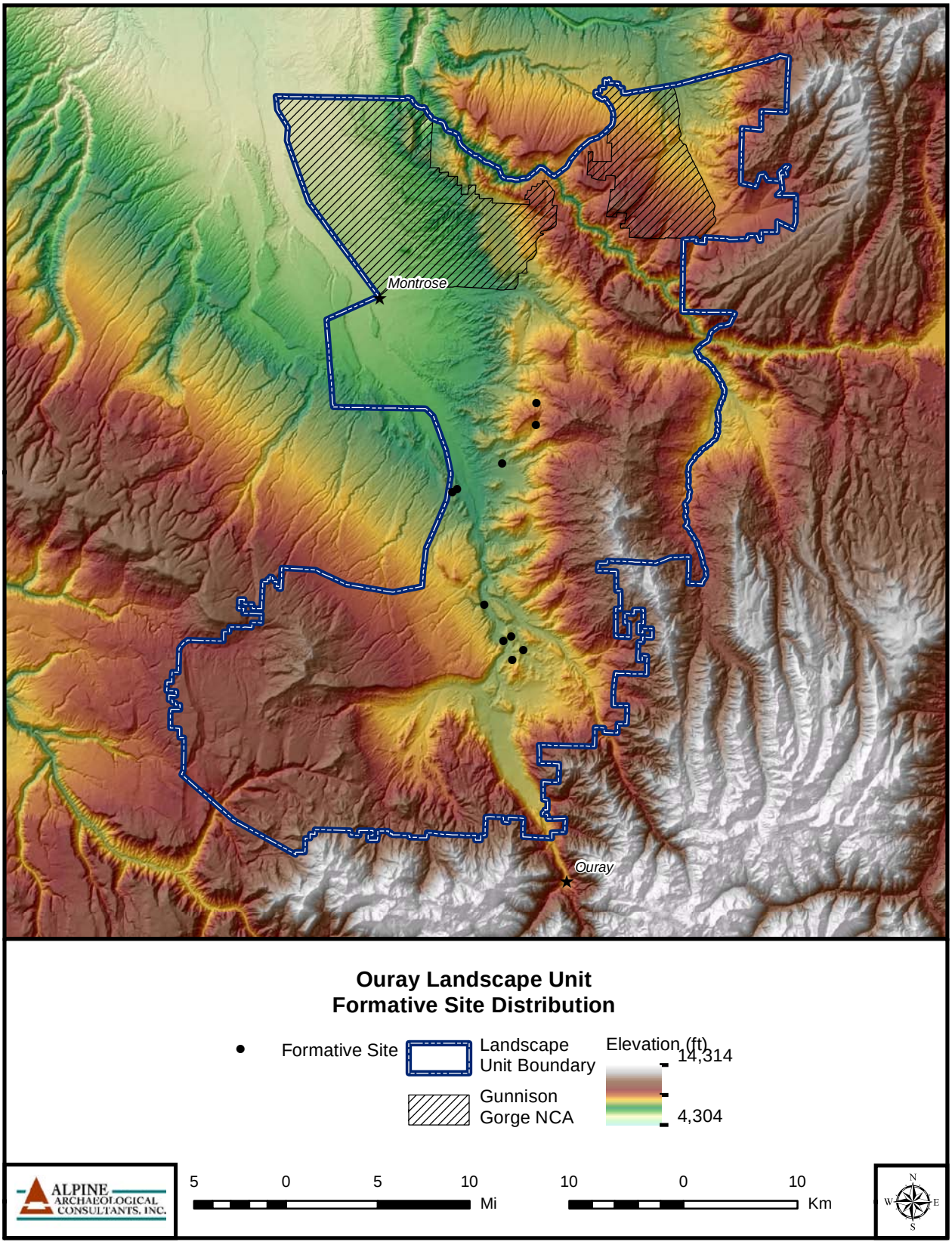


Figure 34. Distribution of known Formative sites within the Ouray Area LU.

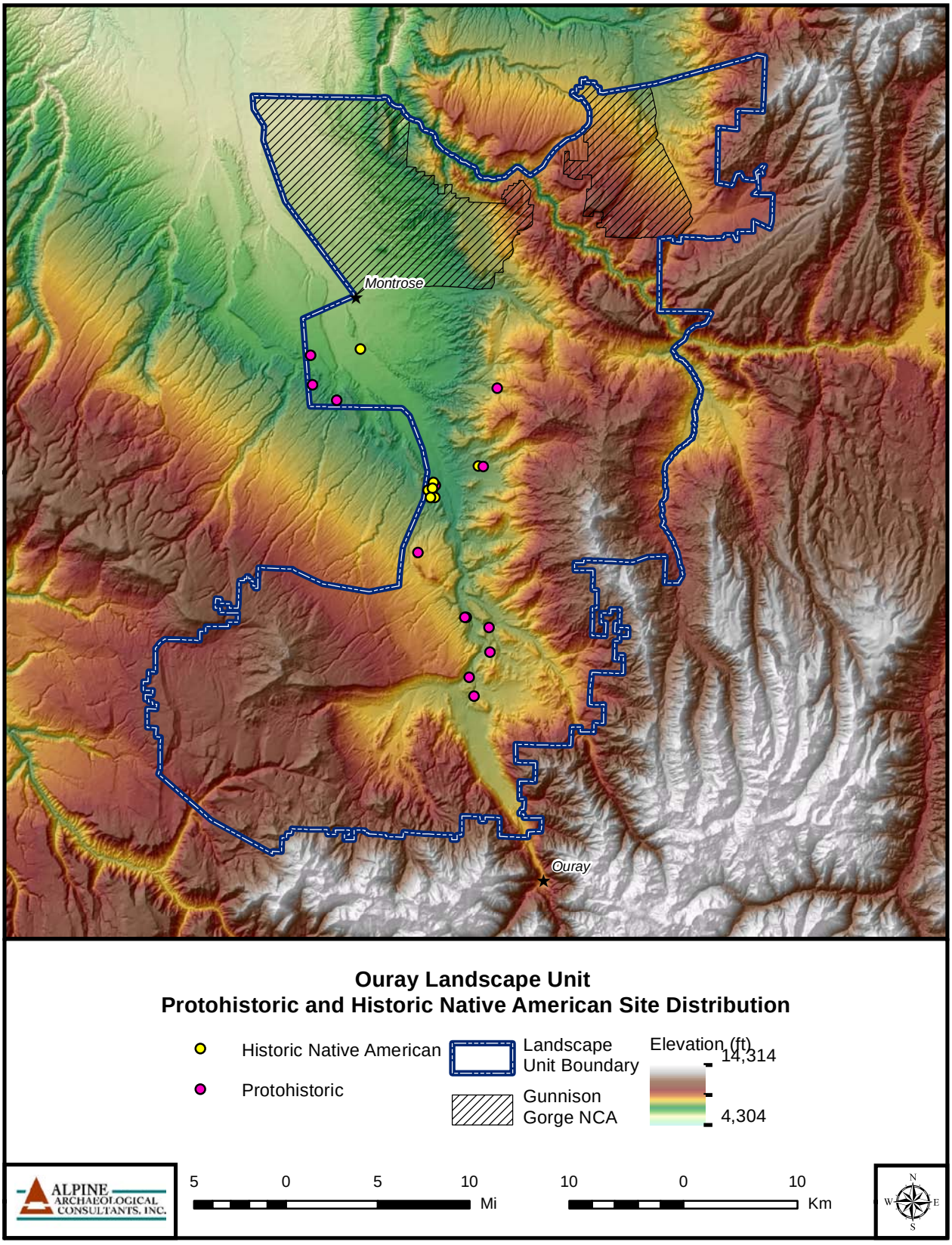


Figure 35. Distribution of known Protohistoric and Historic Native American sites within the Ouray Area LU.

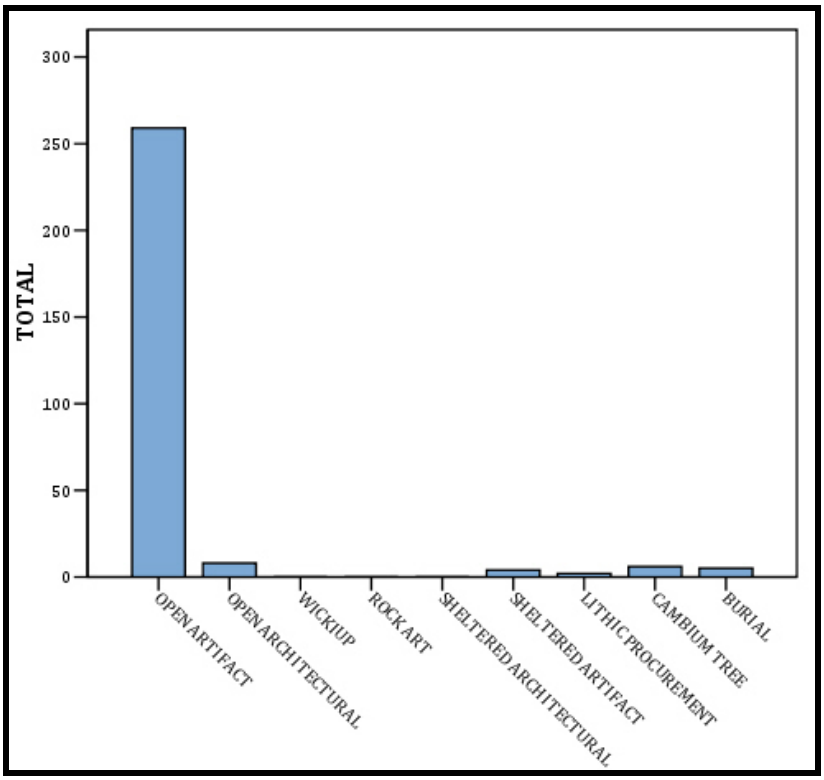


Figure 36. Distribution of prehistoric site types in the Ouray landscape unit.

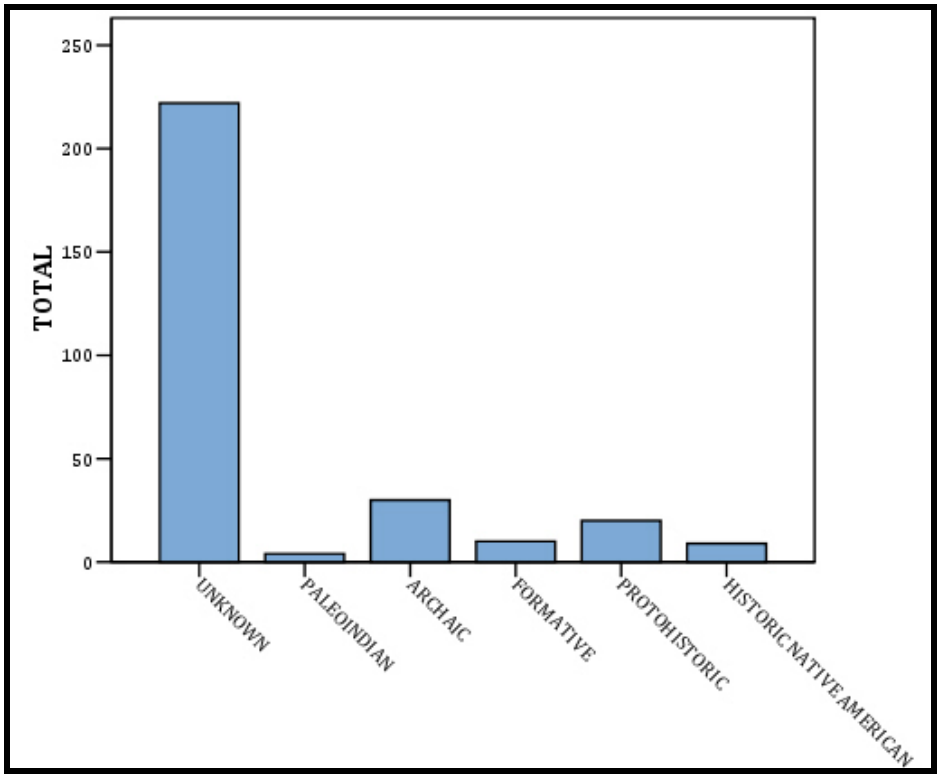


Figure 37. Distribution of prehistoric cultural affiliations in the Ouray landscape unit.

Two of the human burial sites have an unknown cultural affiliation, one is associated with the Protohistoric era, and two burials are associated with the historic Native American period. Of the two culturally unaffiliated burials, one represents the Log Hill Mesa Burial (5OR1006) and the other (site 5OR1006) has no additional information available. The single Protohistoric burial (site 5MN7719) possibly represents two individuals; however, no additional information is provided in the database. The two historic Native Americans burials (sites 5OR1429 and 5OR1430) present are described as being associated with the Ute occupation of the region. The historic Euroamerican sites, by definition, all fall within the historic occupation of the study area.

General Patterns of Site Distributions

Prehistoric sites lie in the south-central portion of the Ouray landscape unit, along the Uncompahgre River, which flows in a generally north south direction through the landscape unit. Very few sites are located in the southwestern corner of the landscape unit west of Log Hill Mesa and similarly, site density is low east of the Uncompahgre River in areas of high elevation. The predominant vegetation type at many of the sites is a pinyon-juniper vegetation community, with 266 of the 284 prehistoric sites in the Ouray landscape unit located at elevation ranges between 6,001 to 8,000 ft. asl. Historic sites in the Ouray landscape unit lie at lower elevations near the towns of Montrose and Ridgway, Colorado. Transportation corridors, developed for historic roads and railroads generally follow major waterways, such as the Uncompahgre River, with other historic site types dotted along these routes.

Uncompahgre Plateau Landscape Unit

Site Types and Frequencies

The Uncompahgre Plateau landscape unit contains a total of 2,473 cultural resource sites, including 880 prehistoric sites, 284 historic sites, 1,226 prehistoric isolated finds or features, and 83 historic isolated finds or features.

The distribution of prehistoric sites by site type within the Uncompahgre Plateau landscape unit is shown in Figure 9-Figure 11. The Uncompahgre Plateau landscape unit contains 880 prehistoric sites, the second most of any landscape unit, representing eight different prehistoric site types. Cambium trees are the only site type not represented in the Uncompahgre Plateau landscape unit. Figure 38 summarizes the frequencies of prehistoric site types in the Uncompahgre Plateau landscape unit, which includes 782 open artifact sites, 14 open architectural sites, 4 wickiup sites, 30 rock art sites, 1 sheltered architectural site, 57 sheltered artifact sites, 11 lithic procurement sites, and 2 human burials.

There are 782 sites representing the open artifact scatter, the most of any prehistoric site type in the Uncompahgre Plateau landscape unit. Other site types well represented in the Uncompahgre Plateau landscape unit include 57 sheltered artifact sites and 30 rock art sites. Twelve of the sheltered artifact sites also contain rock art, one has an open artifact component, and another contains a human burial. The Uncompahgre Plateau landscape unit has more rock art sites than any other landscape unit. Twenty-one of the rock art sites are specifically designated as petroglyph sites and the remaining nine are described simply as rock art panels. The more notable rock art sites within the Uncompahgre Plateau landscape unit are summarized in Table 14.

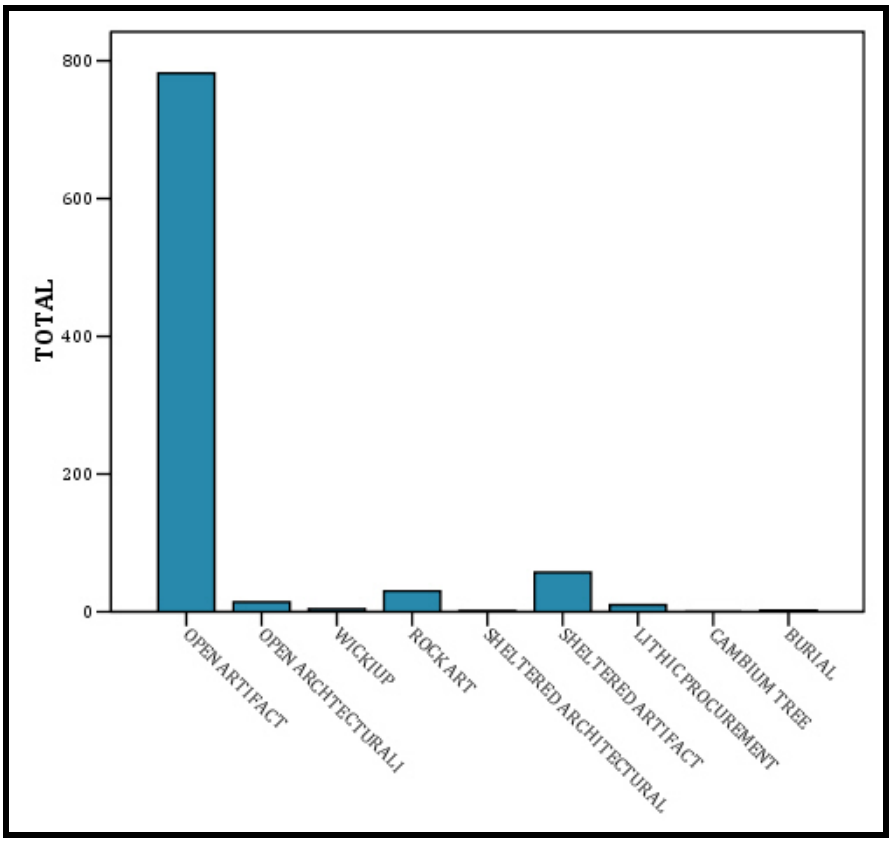


Figure 38. Distribution of prehistoric site types in the Uncompahgre Plateau landscape unit.

Table 14. Notable Rock Art Sites in the Uncompahgre Plateau landscape unit.

Site Number	Site Name	Cultural Affiliation
5MN2	Hauser Site	Formative
5MN5	Shavano Valley Rock Art Site	Protohistoric, Euroamerican
5MN6	Frank's Shelter	Unknown Prehistoric
5MN14	Carlyle Shelter	Formative, Protohistoric
5MN27	Shavano Picture Rock Site	Unknown Prehistoric
5MN30	Monte's Shelter	Protohistoric
5MN64	Cushman Creek Picture Rock Site	Protohistoric
5MN67	Shavano Falls Petroglyph Site	Unknown Prehistoric
5MN863	Moore Site	Archaic
5MN1215	John Davis Site	Unknown Prehistoric
5MN2341	Harris Site	Archaic
5MN2728	Picture Rock/Shavano Valley Petroglyph	Unknown Prehistoric
5MN2954	Windy Point Panel	Formative
5MN3450	Roatcap Gulch Panel	Archaic
5MN3451	Shrine Site	Unknown Prehistoric, Protohistoric
5MN3639	Dancing Man/Deer Panel	Unknown Prehistoric
5MN3640	Many Finger's Petroglyph	Unknown Prehistoric
5MN5110	Roubideau Canyon Rock Art Gallery	Unknown Prehistoric

Present in small numbers in the Uncompahgre Plateau landscape unit are 14 open architectural sites, 4 wickiups, 1 sheltered architectural site, 11 lithic procurements sites, and 2 human burials. Architectural elements present at the open architectural sites include 1 brush corral, 6 stone circles, 5 game blinds, 1 pit structure, 1 sweat lodge, and 1 teepee ring. There are four wickiup sites present in the Uncompahgre Plateau landscape unit, one of which (site 5MN4903) contains an assortment of flaked stone artifacts, and another (site 5MN7579) has flaked stone artifacts, Uncompahgre Brown Ware ceramics, and a sandstone metate. The other two wickiup sites (sites 5MN44 and 5MN65) are Monitor Mesa Wickiup sites that have no artifact information available. The one sheltered architectural site (5MN591) in the Uncompahgre Plateau landscape unit contains a dry laid stone wall and flaked stone artifacts. Of the 11 lithic procurement sites present in the Uncompahgre Plateau landscape unit, seven are described as having quartzite raw material, whereas the other four have no information available. The Spring Creek Burials (site 5MN23) and the Happy Canyon site (site 5MN6666) represent the only two burials present in the Uncompahgre Plateau landscape unit.

The distribution of historic sites in the Uncompahgre Plateau landscape unit is shown in Figure 12. The Uncompahgre Plateau landscape unit contains 284 historic sites, representing seven of the eight major research themes (Table 15). Included in this resources are 33 transportation-related sites, including 9 railroad sites, 5 trail segments, 2 bridges, 3 culverts, and 14 roads segments. All five of the trail segments are associated with the Old Spanish Trail—Salt Lake Wagon Road and the nine railroad sites consist of segments of the Denver and Rio Grande Railroad.

Table 15. Historic Research Types in the Uncompahgre Plateau landscape unit.

Research Theme	Frequency	Percent
Communication	1	0.4
Government	4	1.4
Industry	9	3.2
Recreation	0	0.0
Rural Agriculture	37	13.0
Settlement	81	28.5
Transportation	33	11.6
Water Control and Distribution	32	11.3
Unknown/Other	87	30.6
TOTAL	**284**	**100.0**

Thirty-two sites represent water control and distribution resources and include 20 ditches or canals, 1 dam, 1 reservoir, 8 aqueducts, 1 cistern, and 1 site containing water gauging equipment. Settlement-related sites include historic camps and in-town structures, such as hotels, restaurants, and habitation structures. There are 81 settlement sites within the Uncompahgre Plateau landscape unit. Thirty-seven sites in the Uncompahgre Plateau landscape unit are associated with rural agriculture, including 13 farm sites and 21 sites associated with ranching activities. The remaining three sites are considered to be associated with rural agricultural but are not specific to either farming or ranching operations. Industry-related sites in this unit include nine sites, all of which are directly associated with mining activities.

The one communication-related site in the Uncompahgre Plateau landscape unit is a communication station associated with the Co-op Telephone Line (site 5DT518). Four government-related sites are in the Uncompahgre Plateau landscape unit and are associated with Fort Crawford and Fort Uncompahgre. Finally, 87 sites are not assigned to a specific research theme and include open trash scatters, isolated burials, and rock art sites.

Archaeological Units/Time Periods Represented

The Uncompahgre Plateau landscape unit contains components from each of the major cultural affiliations defined, including 648 culturally unaffiliated components (Figure 13), 14 Paleoindian components (Figure 14), 151 Archaic components (Figure 15), 76 Formative components (Figure 16), 78 Protohistoric components (Figure 17), and 12 Historic Native American components (Figure 17) for a total of 901 cultural components at 880 sites, as summarized in Table 10. Figure 39 illustrates the frequencies of cultural affiliations in the Uncompahgre Plateau landscape unit.

Of the 782 open artifact sites present in the Uncompahgre Plateau landscape unit, 582 are culturally unaffiliated and the remaining sites include 12 Paleoindian components, 143 Archaic components, 66 Formative components, 65 Protohistoric components, and 9 historic Native American components. Forty-one of the sheltered artifact sites are culturally unaffiliated, whereas the remaining sites include 2 Paleoindian components, 7 Archaic components, 8 Formative components, and 3 Protohistoric components. The rock art sites include 18 culturally unaffiliated components, 4 Archaic components, 4 Formative components, 6 Protohistoric components, and 1 Historic Native American component.

There are 9 culturally unaffiliated open architectural sites, 1 Archaic component, 1 Formative component, 2 Protohistoric component, and 2 historic Native American components. One site also has a historic Euroamerican component present. All four of the wickiup sites in the Uncompahgre Plateau landscape unit are associated with the Ute occupation of western Colorado or, more broadly, the Protohistoric era. All of the lithic procurement sites are culturally unaffiliated; however, one site does have a historic Euroamerican component. Site 5MN591, which represents the only sheltered architectural site in the Uncompahgre Plateau landscape unit, has no cultural affiliation assigned. Finally, there are the two human burials within the Uncompahgre Plateau landscape unit. The Spring Creek Burials are culturally unaffiliated and the Happy Canyon site is associated with the Formative and Protohistoric eras. The historic Euroamerican sites, by definition, all fall within the historic occupation of the study area.

General Patterns of Site Distributions

The documented prehistoric sites in the Uncompahgre landscape unit are clearly affected by the distribution of cultural resource inventories that have occurred in the area. Large portions of the Uncompahgre landscape unit are covered in private lands, thus resulting in minimal inventory coverage in these areas. As a result, the majority of the documented prehistoric sites appear in the western half of the landscape unit within the Uncompahgre Plateau. Within this area, approximately 70 percent of the prehistoric sites are located in either sagebrush or pinyon-juniper vegetation communities at elevations between 6,001 to 8,000 ft. asl. Historic linear sites that cross the Uncompahgre landscape unit generally follow water drainages, such as the Gunnison River, Cushman Creek, and Dry Creek. These corridors are concentrated with various site types, such as open camp sites and historic trash scatters, in addition to historic settlements, including the cities of Delta and Montrose, Colorado.

West End Landscape Unit

Site Types and Frequencies

A total of 4,050 cultural resources are identified within the West End landscape unit, the most of any landscape unit in the project area. These cultural resources include 2,153 prehistoric sites, 457 historic sites, 1,359 prehistoric isolated finds or features, and 81 historic isolated finds or features.

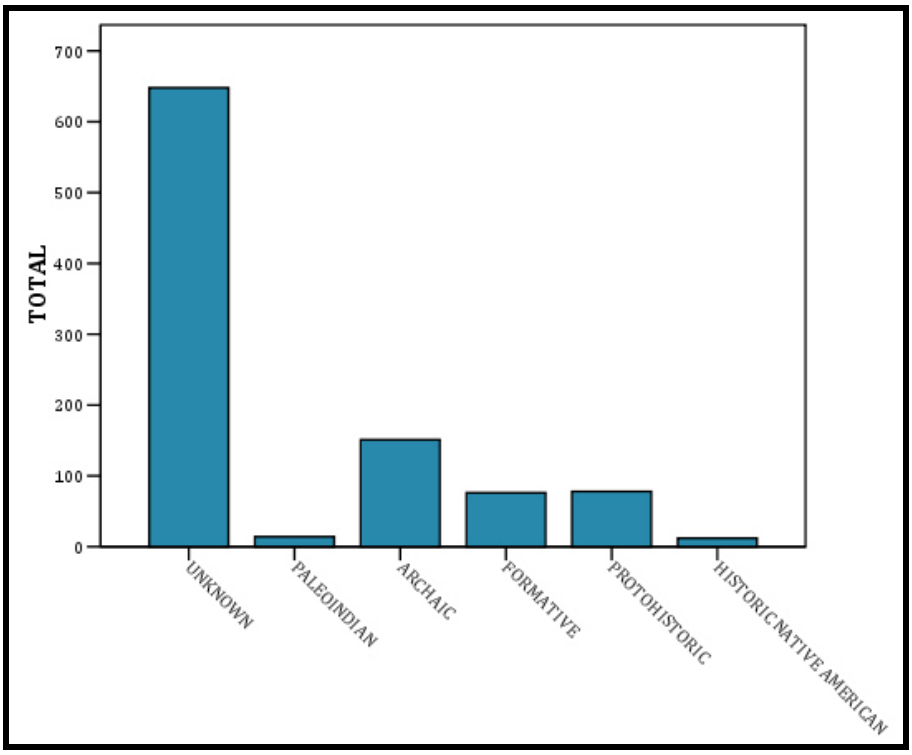


Figure 39. Distribution of prehistoric cultural affiliations in the Uncompahgre Plateau landscape unit.

The West End landscape unit contains more prehistoric sites than any other landscape unit, with 2,153 prehistoric sites representing each of the nine different prehistoric site types. The distribution of prehistoric sites by site type in the West End landscape unit is shown in Figure 11, Figure 40, and Figure 41. Figure 42 summarizes the frequencies of prehistoric site types in the West End landscape unit, which includes 1,968 open artifacts sites, 62 open architectural sites, 16 wickiup sites, 22 rock art sites, 9 sheltered architectural sites, 75 sheltered artifact sites, 19 lithic procurement sites, 3 cambium trees, and 3 human burials.

Following the trend present throughout the UFO project area, the most common site type in the West landscape unit is the open artifact site, which accounts for 1,968 of the sites (91.4 percent) recorded. Sheltered artifact and open architectural sites comprise the next more represented site types in the West End landscape unit. There are 75 sheltered artifacts sites present, eight of which also contain rock art elements. Architectural elements present at the 62 open architectural sites in the West End sites include 18 rock alignments, 4 granaries or storage cists, 17 masonry structures or room blocks, 16 circular stone structures or alignments, 5 game blinds, 3 sweat lodges, and 1 adobe ruin. Notable open architectural sites in the West End landscape unit include Cottonwood Pueblo (site 5MN654), Tabeguache Pueblo (site 5MN1609), the Rim Rock Ruin on Naturita Creek (site 5MN8049/5SM57), and the Wagon Bend site (site 5MN653). Another important open architectural site in the area is the Maze (5SM346), which is barely outside of the UFO boundary and, therefore, technically not part of the study area.

Twenty-two rock art sites, 19 lithic procurement sites, and 16 wickiup sites are present in the West End landscape unit, as are 9 sheltered architectural sites, 3 cambium trees, and 3 human burials. Eight of the rock art sites contain a sheltered artifact site component, three sites contain an open artifact component, and two sites have open architectural elements present. Of the 19 lithic procurement sites present in the West End landscape unit, 13 of the site descriptions do not specify the type of raw material procured, three sites had quartzite procured, and another three sites had chert procured. Fourteen of the 16 wickiup sites are officially eligible for inclusion on the NRHP.

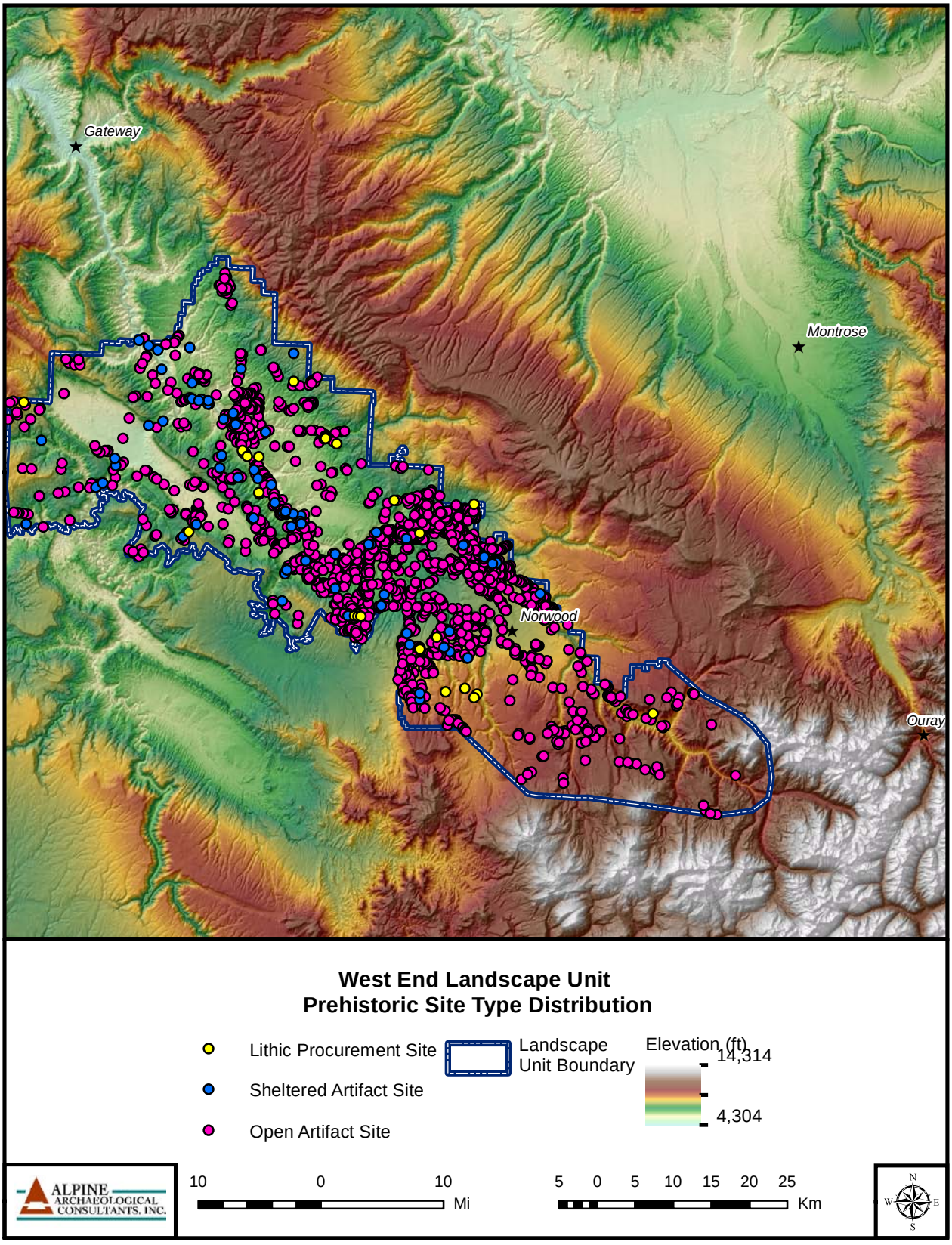


Figure 40. Distribution of open artifact, sheltered artifact, and lithic procurement sites in the West End LU.

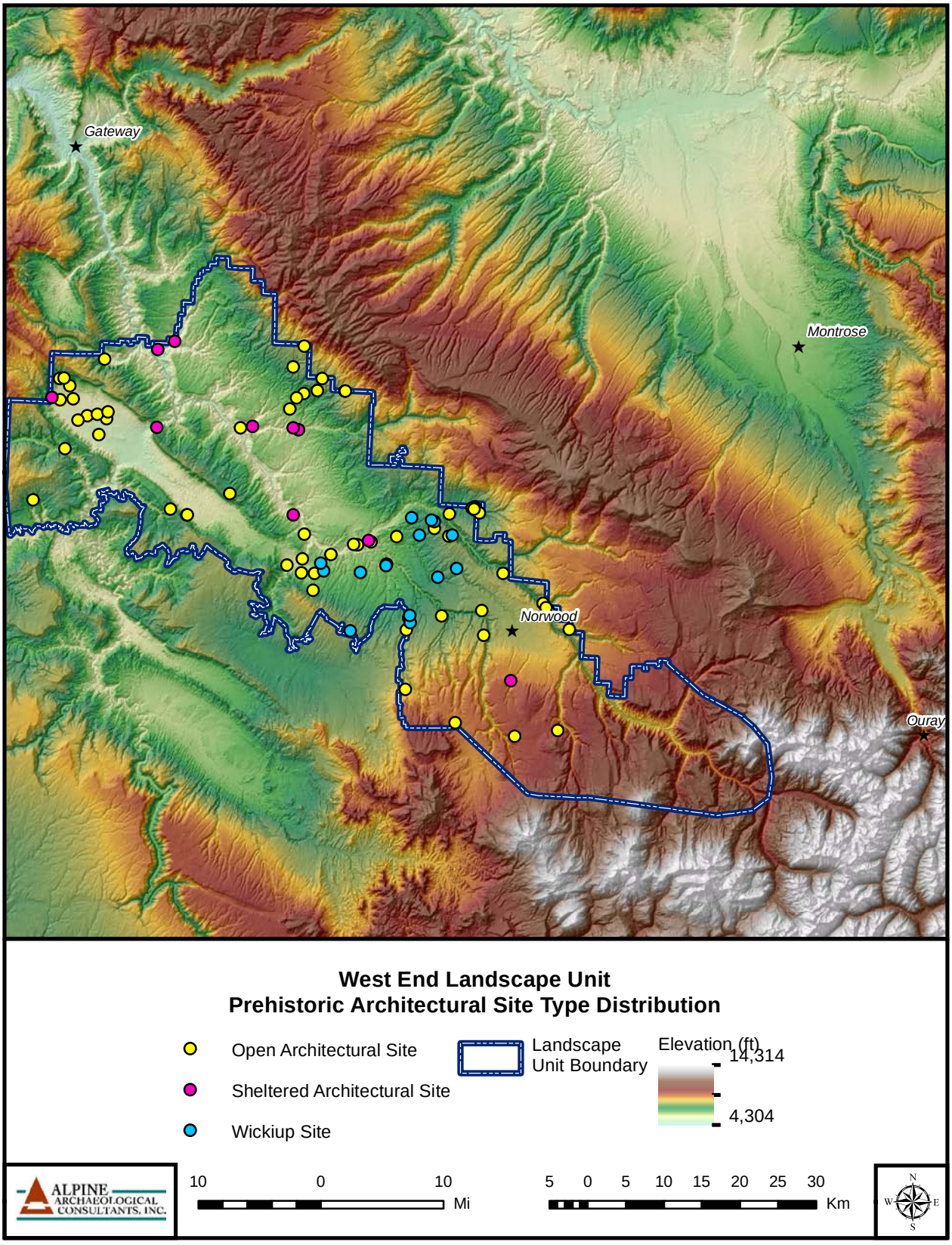


Figure 41. Distribution of open architectural, sheltered architectural, and wickiup sites in the West End LU.

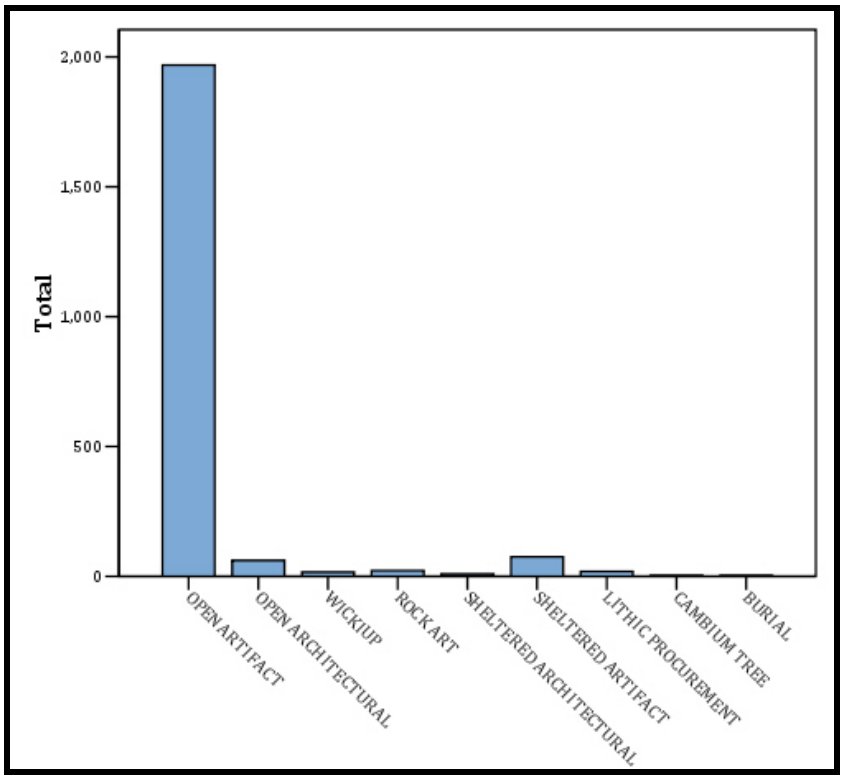


Figure 42. Distribution of prehistoric site types in the West End landscape unit.

Architectural elements present at the nine sheltered architectural sites include 7 masonry walls or stone alignments, 1 cist, and 1 slab alignment. Artifacts documented at these sites include flaked stone debris, projectile points, and ground stone artifacts. Only one sheltered architectural site contains a secondary site type, which is an open artifact scatter at site 5MN434. There are three sites documented as cambium or scarred trees in the West End landscape unit. Two of these sites have artifacts present, including flaked stone debris and projectile points.

There are three human burial sites documented in the West End landscape unit. Site 5MN1165 is considered a questionable burial site and is based on a mound that is speculated to contain human remains. Site 5MN3672 has a concentration of oxidized sandstone present, in addition to lithic artifacts and human bone. Finally, site 5MN368, the Weimer IV site, contains a masonry structure, lithic debris, ground stone artifacts, ceramics, beads, and corn, in addition to the human burial.

The distribution of historic sites in the West End landscape unit is shown in Figure 43. Similar to the prehistoric site count, the West End landscape unit contains more historic sites than any other landscape unit, with 457 sites present that represent six of the eight major research themes (Table 16). Twenty-six of these sites are classified under the transportation theme and include 10 road segments, 2 trail segments, 3 railroad segments, 4 bridges, 1 culvert, 3 airstrips, 2 tramways, and 1 tram tower.

The West End landscape unit contains 26 water control and distribution sites, including 23 canals, 1 dam, 1 reservoir, and 1 cistern. Settlement-related sites within the West End landscape unit total 54 sites and include 25 camps, 5 towns, 20 structures or habitations, 3 cemeteries, and 1 historic district. Of the 194 industry-related sites in the West End landscape unit, 182 are associated with mining operations. The mining sites include seven sites directly related to coal

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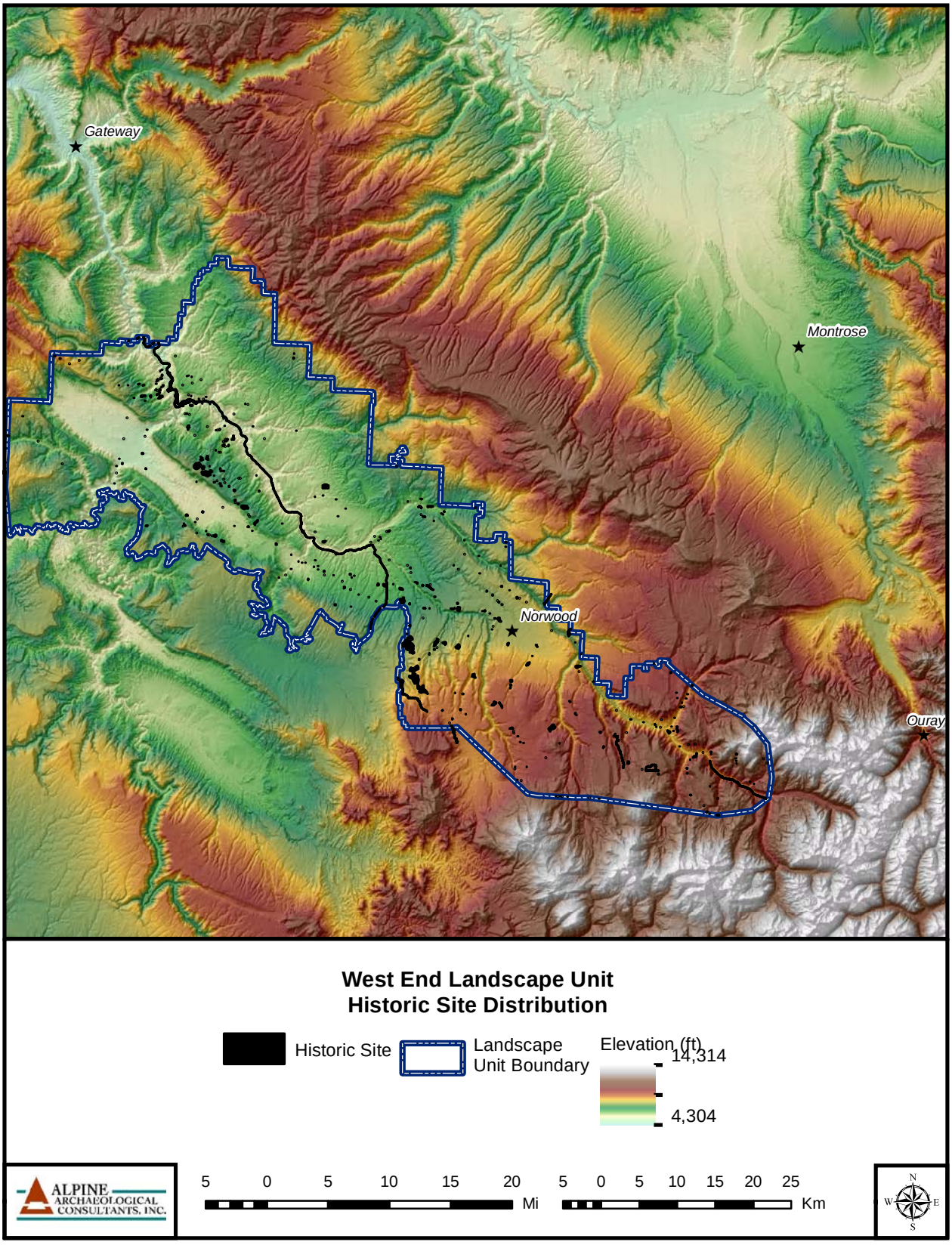


Figure 43. Distribution of historic sites in the West End LU.

mining and another 25 sites associated with uranium mining. Non-mining sites include 4 mills, 2 transmission lines, 1 coke oven, 1 quarry, 2 kilns, and 2 logging camps. Seventy-eight sites are classified under the rural agriculture theme and include 29 farming homesteads and 27 ranching-related sites. An additional 22 sites are considered related to rural agricultural activities but could not be specifically assigned to either farming or ranching operations due to the limited nature of the data available. The Norwood Ranger Station (5SM.2748) represents the only government-related site in the West End landscape unit. Finally, 82 sites within this unit were not assigned to a specific research theme due to limited nature of data available. These sites include open trash scatters, rock art, dugouts, and isolated burials.

Table 16. Historic Research Types in the West End Landscape Unit.

Research Theme	Frequency	Percent
Communication	0	0.0
Government	1	0.2
Industry	194	42.1
Recreation	0	0.0
Rural Agriculture	78	17.0
Settlement	54	11.7
Transportation	26	5.6
Water Control and Distribution	26	5.6
Unknown/Other	82	17.8
TOTAL Research Themes	**461†**	**100.0**

† Represents 457 historic sites

Archaeological Units/Time Periods Represented

The 2,153 prehistoric sites in the West End landscape unit contain 2,319 cultural components. Figure 48 summarizes the frequencies of the prehistoric cultural affiliations present in the West End landscape unit, which includes 1,666 unknown cultural affiliations (Figure 44), 36 Paleoindian components (Figure 14), 331 Archaic components (Figure 45), 189 Formative components (Figure 46), 91 Protohistoric components (Figure 47), and 6 Historic Native American components (Figure 47).

Of the 1,968 open artifact sites in the West End landscape unit, there are 1,559 culturally unknown components, 30 Paleoindian components, 303 Archaic components, 144 Formative components, 70 Protohistoric components, and 4 historic Native American components. Ninety-five of the open artifact sites also have a historic Euroamerican component. The 75 sheltered artifacts sites include 59 culturally unaffiliated sites, 2 Paleoindian components, 6 Archaic components, 7 Formative components, and 1 Protohistoric component. Thirteen of sheltered artifact sites also contain a Euroamerican component. The 62 open architectural sites include 21 culturally unaffiliated components, 4 Paleoindian components, 10 Archaic components, 29 Formative components, 3 Protohistoric components, and 3 historic Native American components. The 22 rock art sites include 13 culturally unaffiliated components, 2 Archaic components, 9 Formative components, and 1 Protohistoric component. Two of the rock art sites also contain a historic Euroamerican component. The 19 lithic procurements sites represent 14 culturally unaffiliated components, 4 Archaic components, and 1 Protohistoric component. The sixteen wickiup sites are all associated with the Ute occupation of Western Colorado or, more broadly, the Protohistoric era. The nine sheltered architectural sites include 6 culturally unaffiliated components, 3 Formative components, and 1 Protohistoric component. The three cambium trees in the West End landscape unit are all associated with Ute occupation of the region; however, one site (site 5SM1452) also contains Paleoindian, Archaic, and Euroamerican component. Finally, of the three human burials in the West End landscape unit, two are culturally unaffiliated and one is associated with the Formative era. The historic Euroamerican sites, by definition, all fall within the historic occupation of the study area.

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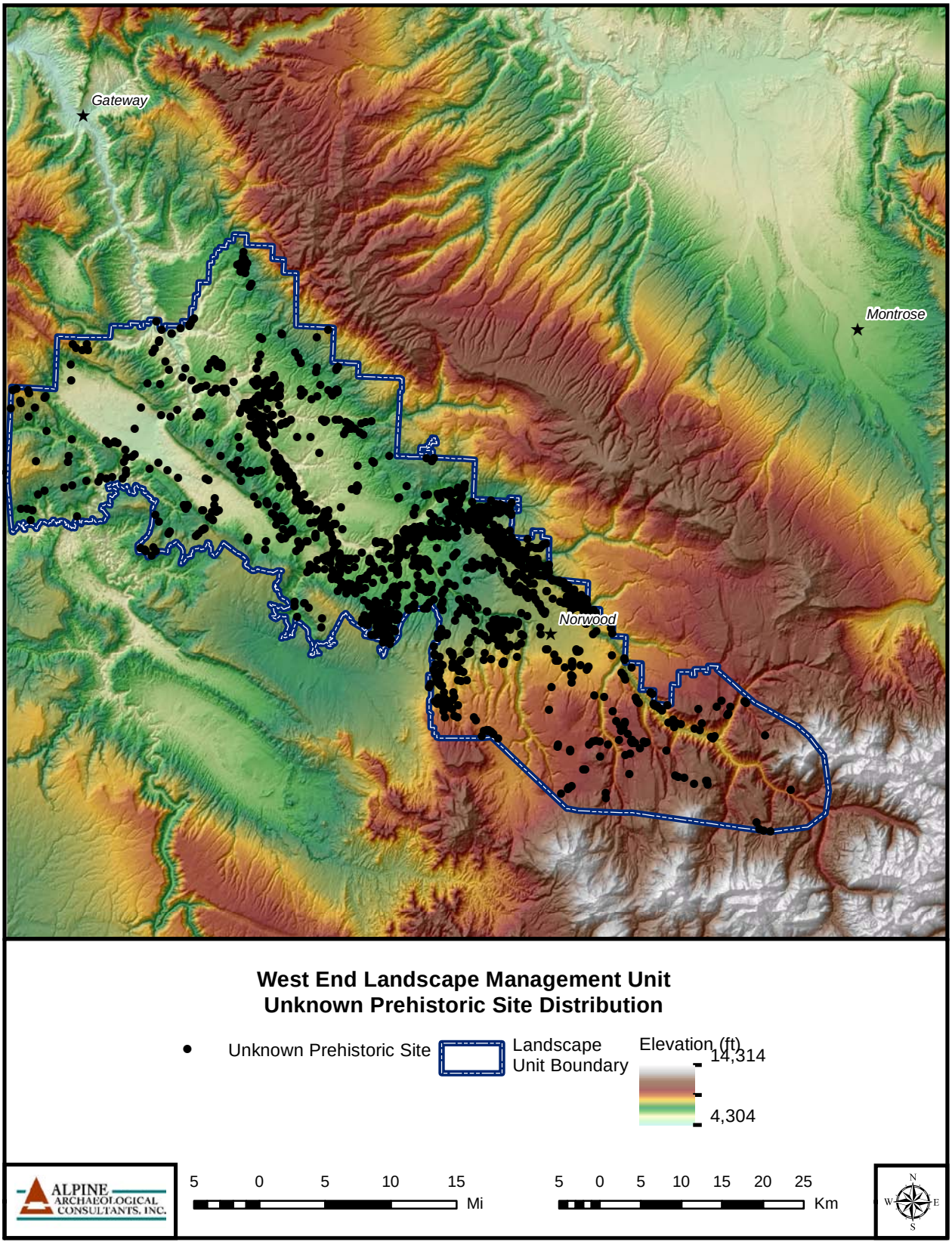


Figure 44. Distribution of prehistoric sites of unknown cultural affiliation in the West End LU.

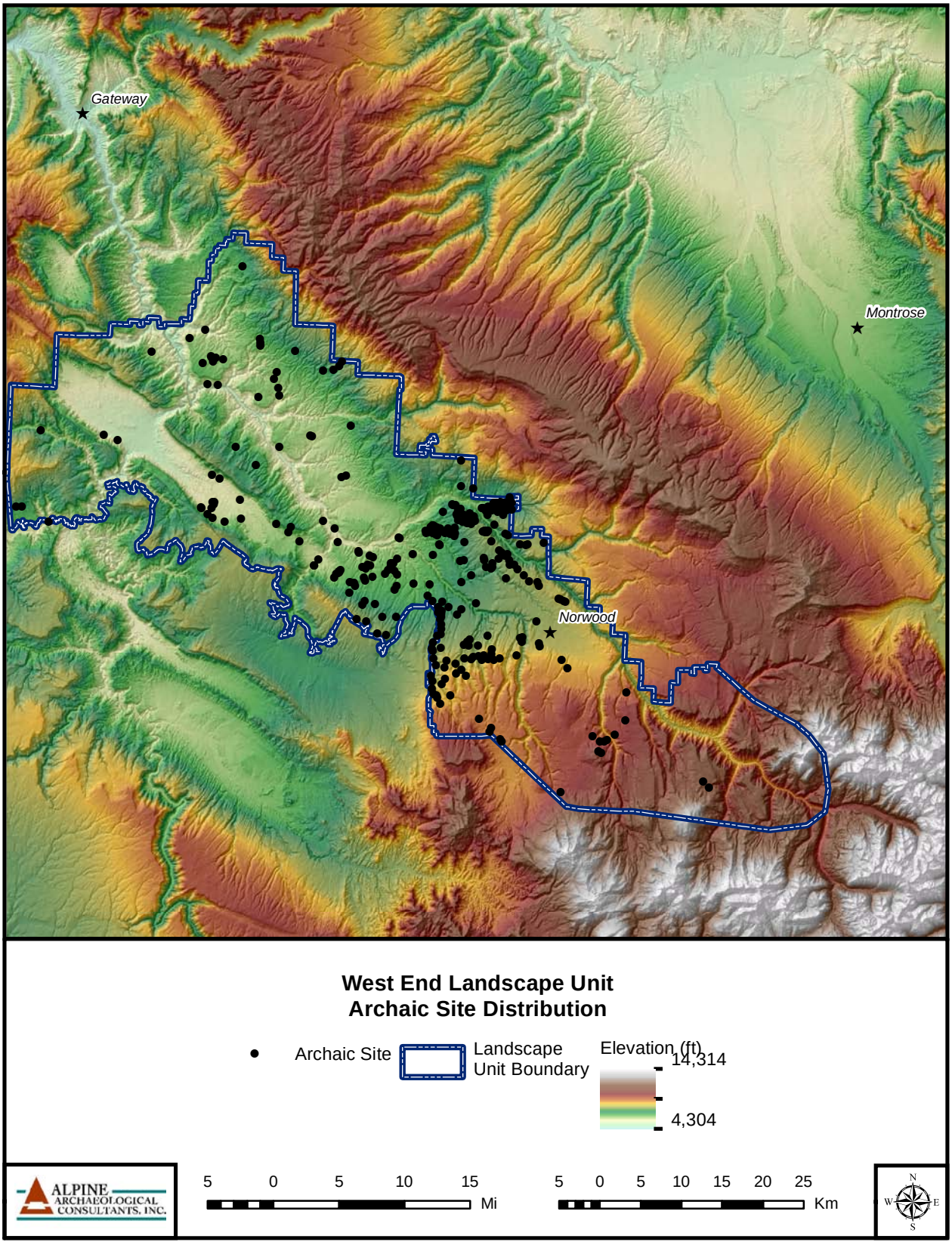


Figure 45. Distribution of known Archaic sites in the West End LU.

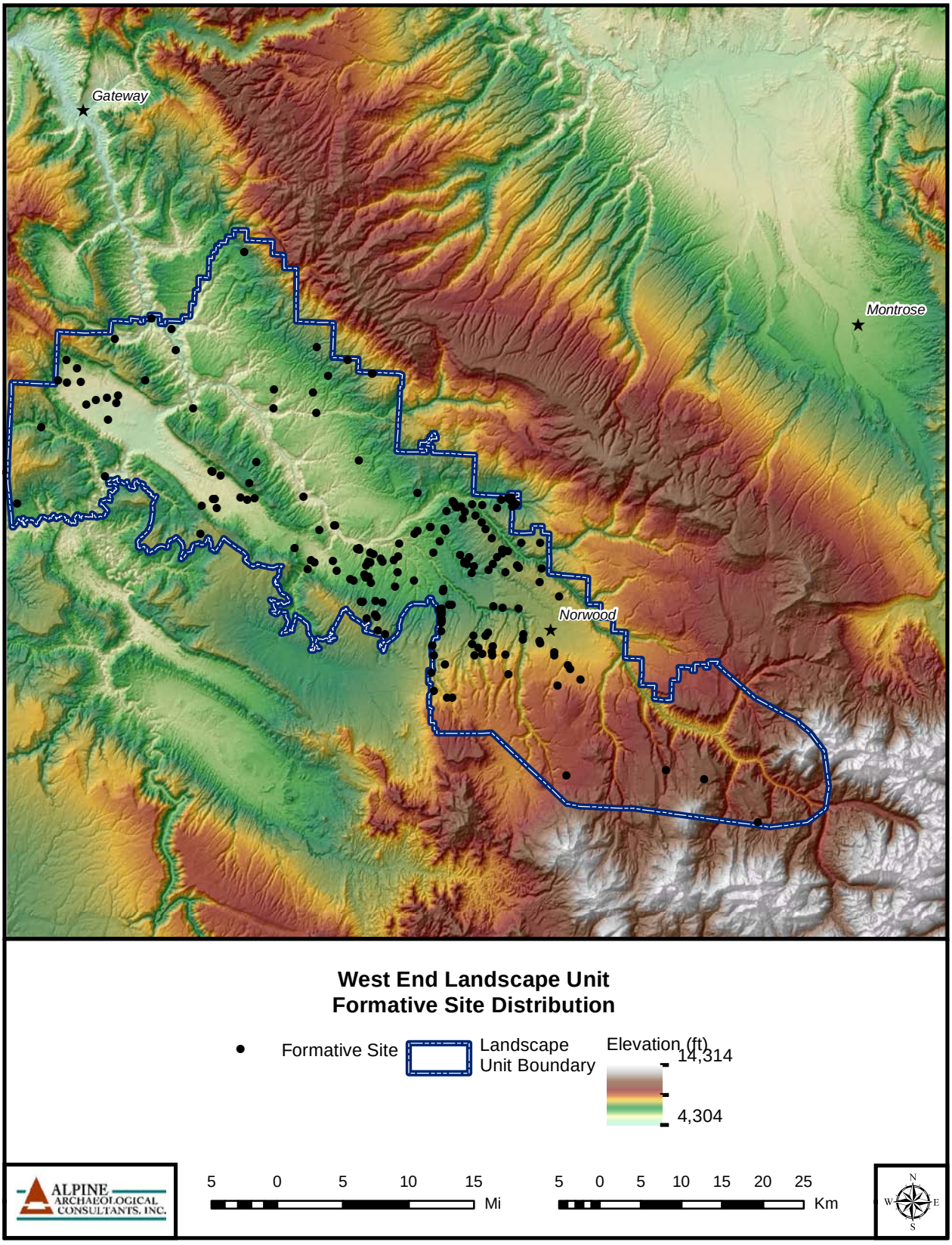


Figure 46. Distribution of known Formative sites in the West End LU.

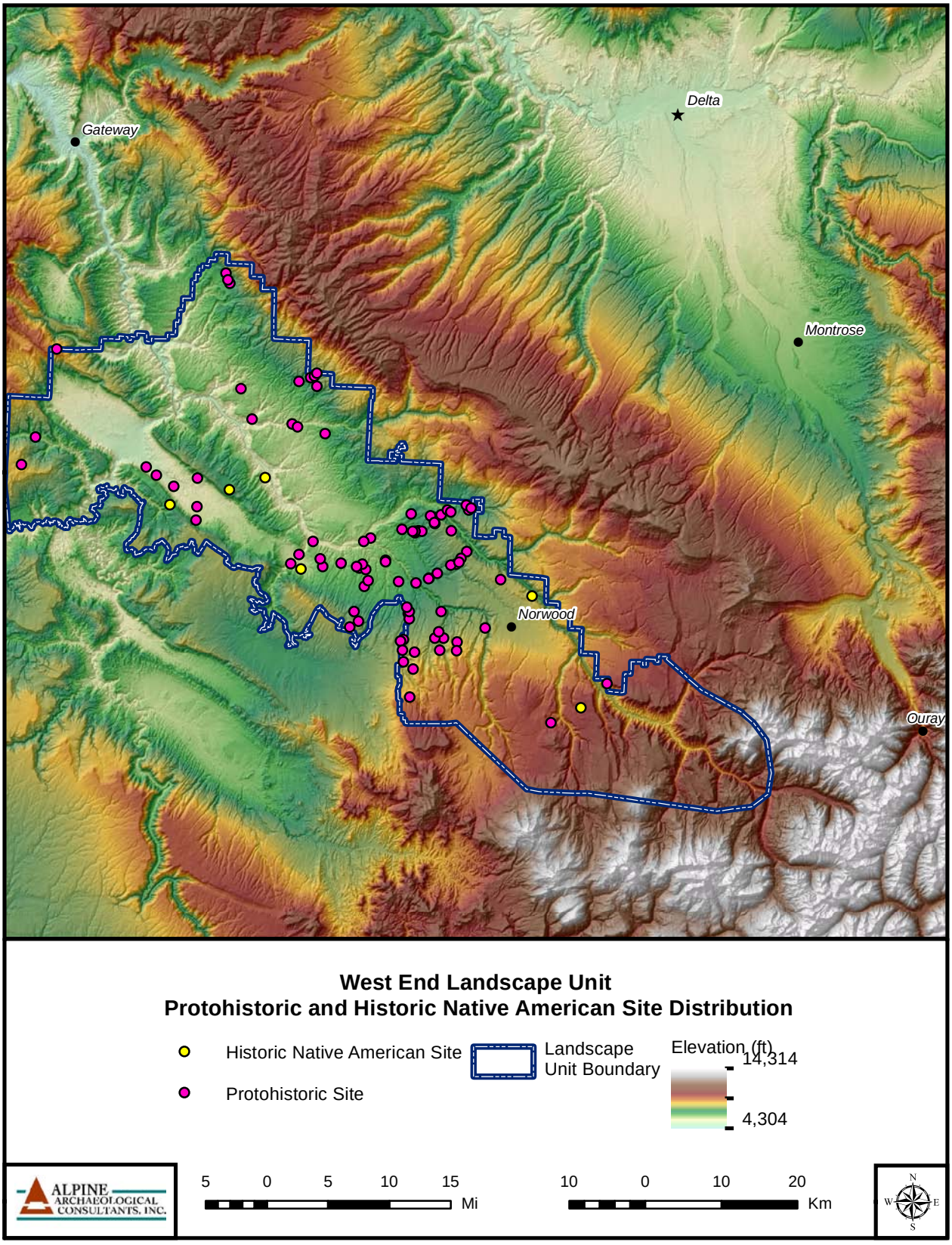


Figure 47. Distribution of known Protohistoric and Historic Native American sites in the West End LU.

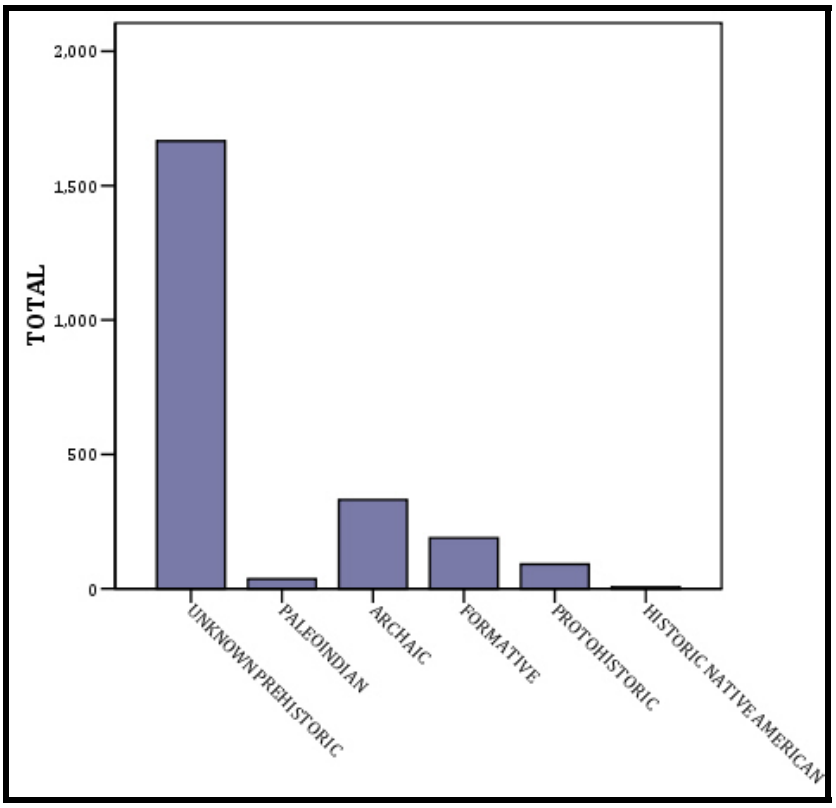


Figure 48. Distribution of cultural affiliations in the West End landscape unit.

General Patterns of Site Distributions

Prehistoric sites in the West End landscape unit are scattered throughout the study area; however, the greatest concentration of sites lie west of Norwood, Colorado and along the San Miguel River. Compared to other landscape units, sites in the West End lie further from permanent waters sources with the majority of the sites located greater than 200 m from a permanent source. Elevation ranges vary, but two-thirds of the sites lie between 6,001 to 8,000 ft. asl, with many sites located along small canyons and draws. Similar to the other landscape units, historic sites in the West End landscape unit lie along major drainages, most notably the San Miguel River. There is also a collection of historic sites within Paradox Valley and along Martin Mesa. Many of these sites consist of mining complexes and isolated mining features, such as adits.

Traditional Cultural Properties

Traditional cultural properties (TCPs) are places associated with cultural practices or beliefs of a living community that are rooted in the history (or prehistory) of those people and are important in maintaining the continuing cultural identify of the community; they are *properties of traditional religious and cultural importance.* Such places are defined by the following criteria: they are widely shared within the group, knowledge of them has been passed down through the generations, and they have served a recognizable role in maintaining the group's cultural identity for at least 50 years.

TCPs can include cultural resource (i.e., archaeological) sites that may or may not be eligible for inclusion on the NRHP, but can also include traditional cultural use areas such as landscapes or geographic locales that are not classifiable as archaeological sites. Examples of traditional cultural use areas might be a valley traditionally used for collecting berries or yampa roots, or a rock

formation or mountain considered sacred. TCP is a formal classification that requires researching and nominating a property. There have been no comprehensive efforts to identify TCPs within the UFO, and no TCPs officially designated as such were identified during this study. Several potential future TCPs, however, are known. For example, two Ute traditional use landscapes within the UFO are currently in the process of being nominated as TCPs (Glade Hadden, personal communication to Rand Greubel 2010). These areas include the entirety of Palmer Gulch in the Dominguez-Escalante LU, which contains rock art and wickiup sites, and a portion of the area between Nucla and Cahone that falls within the West End LU. Both of these traditional use landscapes were identified by Clifford Duncan, a Northern Ute elder.

Two cultural resource sites in the UFO have also been flagged as possible TCPs. One is site 5SM6682, a lithic scatter near Broad Canyon in the West End recorded in 2009. The site recorders (Mettler and Associates, Inc.) documented numerous flakes encircling a small dead juniper tree. They suggested that the site may be a TCP and recommended consultation with Native Americans but did not elaborate further. The other site is 5MN8774, a possible collapsed sweat lodge that may have been constructed and used by Navajo miners working at the nearby Last Chance uranium mine. The site was recorded by Metcalf Archaeological Consultants, Inc. in 2008.

Fritz (2006) reviewed the ethnographic literature and other sources for an area encompassing multiple uranium lease tracts in western Montrose County, including some that are within the UFO study area. The goal of Fritz' analysis was to identify possible TCPs, or the potential for TCPs, associated with traditional cultural use areas or sacred sites of the Navajo, Hopi, and Ute tribes. He concluded that there is only low to medium potential for Navajo or Hopi TCPs in this area, but high potential for Ute TCPs (Fritz 2006). He does not seem to take into account the possibility of TCPs associated with historic Navajo uranium miners, however.

Other prehistoric and historic Native American site types in the UFO that are considered properties of traditional religious and cultural importance include vision quest sites, shrines, rock art sites, sweat lodges, wickiups, tree platforms, burials, and cambium-stripped pine trees. These site types are included in the cultural resource use category "traditional use," discussed in Chapter 6 of this overview document, and all known sites of these types in the UFO are listed in Appendix B, Table 3. In particular, rock art sites that can be associated with a particular group, as well as wickiups and teepee sites, must be treated and managed as TCPs. Historic Euroamerican sites associated with traditional cultural use or important in the history or memory of a particular group might include cemeteries, homesteads, early townsites, old churches, and the like. While it is debatable whether such sites should be considered TCPs in the same sense as a Native American sacred site, they would seem to meet the criteria for a traditional cultural property (King 2008).

In addition to TCPs or properties of traditional religious and cultural importance, Indian Sacred Sites may be present on the UFO. Such sites are defined in Executive Order 13007 as "any specific, discrete, narrowly delineated location on Federal land that is identified by an Indian tribe, or Indian individual determined to be an appropriately authoritative representative of an Indian religion, as sacred by virtue of its established religious significance to, or ceremonial use by, an Indian religion; provided that the tribe or appropriately authoritative representative of an Indian religion has informed the agency of the existence of such a site." All Indian Sacred Sites 50 years old or older are probably TCPs, but sacred sites younger than 50 years cannot be considered "properties of traditional religious and cultural importance" (i.e., TCPs) under Section 106. Similarly, not all TCPs are necessarily Indian Sacred Sites. Examples of Indian Sacred Sites on the UFO might include rock art sites, teepee remains, wickiup villages, burials, special viewscapes, sacred trees, cambium-stripped trees, water sources, and particular rivers, trails, and mountains (Betsy Chapoose, personal communication to Carol Patterson).

CHAPTER 4. PREHISTORIC OCCUPATION OF THE PROJECT AREA

Introduction

The purpose of this chapter is to present a synthetic overview of the prehistoric occupation of the study area, to identify data gaps for future research, and to formulate research questions relevant to these data gaps and to the archaeological record as it is currently understood. Archaeological research in the area encompassed by the UFO or within the immediate surrounding region has demonstrated human occupation for at least the past 10,500 years. Figure 49 illustrates the distribution of radiocarbon determinations from cultural contexts within or close to the study area, omitting those rejected by their analysts. The histogram in Figure 49 depicts the midpoints of two-sigma calibrated calendrical ranges as generated by the Calib Rev 5.0.2 program. When Figure 49 is compared to a similar histogram in the prehistoric context for the Northern Colorado River Basin (Reed and Metcalf 1999:75), though they were constructed using somewhat different methods, the similarities are apparent. This is not surprising, since the two study areas share many of the same sites and radiocarbon dates. Both graphs extend to nearly 8500 B.C. and both show a dramatic increase in dates around 2,400 to 2,500 years ago. Table 17 lists the radiocarbon dates used in Figure 49. The table includes all dates known to have come from sites within the UFO study area and also a few regional dates from outside the five landscape units.

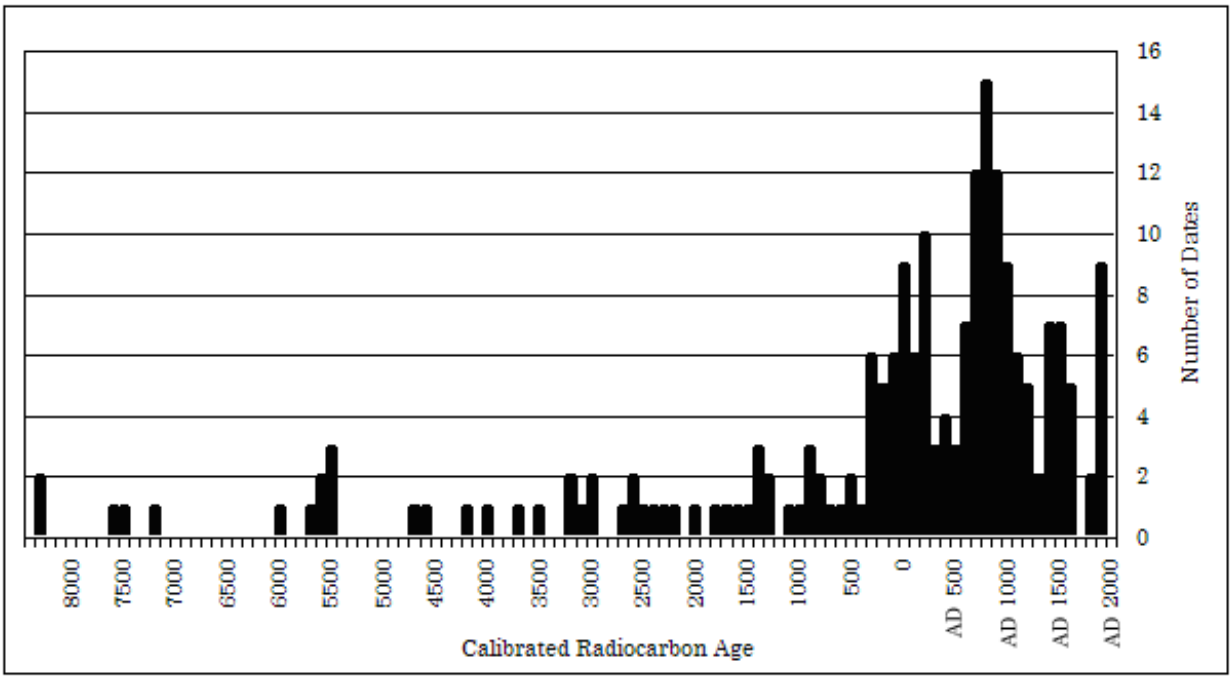


Figure 49. Distribution of radiocarbon determinations in the Uncompahgre RMP area. The data, derived from Claudia Berry's Colorado Radiocarbon Database, represent the midpoints of two-sigma calibrated calendrical ranges as generated by the Calib Rev 5.0.2 program.

Table 17. Radiocarbon Determinations from Sites in the Uncompahgre RMP Area (after Berry 2009).

Smithsonian Site Number	Site Name	Location	Lab Number	Sampled Material	Conventional Date	13C/12 C Ratio	Calibrated Dates (2 sigma)	Report Reference
5DT192		DENCA	Beta-55978	Wood	1180±50	-25	AD 690 to AD 980	Buckles 1971
5DT2	Christmas Rockshelter	Uncompahgre LU	Beta-13995	Wood	1300±70	-25	AD 620 to AD 890	Buckles 1971
			Beta-13888	Wood	7140±110	-25	6230 BC to 5780 BC	Buckles 1971)
			Beta-183532	Maize	100.5±0.5	-8.5	1700 BC to 1920 BC	Reed and Smith Gebauer 2004
			Beta-183533	Charcoal	4100±40	-23	2870 BC to 2500 BC	Reed and Smith Gebauer 2004
			Beta-13056	Other	6650±200	-25	5980 BC to 5220 BC	Buckles 1971
			Beta-12980	Wood	1280±70	-25	AD 670 to AD 970	Buckles 1971
			Beta-13055	Other	6660±100	-25	5740 BC to 5380 BC	Buckles 1971
			Beta-14424	Wood	6600±110	-25	5720 BC to 5350 BC	Buckles 1971
5DT271	Roatcap Game Trail Site	North Fork LU	Beta-18089	Wood	1190±60	-25	AD 690 to AD 970	Baker 1991a
			Beta-18840	Charcoal	1940±410	-25	900 BC to AD 940	Baker 1991a
			Beta-20209	Wood	70±60	-25	AD 1680 to AD 1960	Baker 1991a
			Beta-35123	Wood	180±40	-25	AD 1650 to AD 1960	Baker 1991a
			Beta-18088	Wood	140±50	-25	AD 1670 to AD 1950	Baker 1991a
5DT853	Fools Hill Site	Uncompahgre LU	Beta-164656	Other	6840±40	-25	5810 BC to 5640 BC	Slessman et al. 2002
			Beta-161043	Other	1330±40	-25	AD 650 to AD 770	Slessman et al. 2002
			Beta-161044	Other	2580±110	-25	920 BC to 400 BC	Slessman et al. 2002
			Beta-164655	Other	3160±40	-25	1520 BC to 1320 BC	Slessman et al. 2002
5MN1068	Zephyr Site	Ouray LU	WSU-2476	Other	8580±130	-25	8180 BC to 7330 BC	Indeck and Kihm 1982
			UGA-3727B	Other	8470±115	-25	7740 BC to 7190 BC	Indeck and Kihm 1982
			RL-1481	Other	8250±240	-25	7790 BC to 6590 BC	Gooding 1979
			UGA-3727A	Charcoal	3965±110	-25	2870 BC to 2150 BC	Gooding 1979
5MN1224	Binder Site	West End LU	UCIAMS-43143	Charcoal	1070±20	-25	AD 900 to AD 1020	Reed and Emslie 2008
5MN1365		Uncompahgre LU	UGA-3317	Charcoal	1515±85	-25	AD 350 to AD 670	Horvath 1980
5MN15	Juanita's Shelter	Uncompahgre LU	Beta-183534	Charcoal	1800±60	-25	AD 80 to AD 380	Reed and Smith Gebauer 2004

Table 17. Radiocarbon Determinations from Sites in the Uncompahgre RMP Area (after Berry 2009).

Smithsonian Site Number	Site Name	Location	Lab Number	Sampled Material	Conventional Date	13C/12 C Ratio	Calibrated Dates (2 sigma)	Report Reference
5MN1609	Tabeguache Pueblo	West End LU	UCIAMS-43148	Charcoal	1165±20	-25	AD 780 to AD 950	Reed and Emslie 2008
			UCIAMS-43147	Charcoal	1180±20	-25	AD 780 to AD 930	Reed and Emslie 2008
			UCIAMS-43146	Charcoal	1310±20	-25	AD 660 to AD 770	Reed and Emslie 2008
5MN17	Initial Site	Uncompahgre LU	Beta-183535	Charcoal	2600±50	-25	890 BC to 540 BC	Conner and Davenport 1995
5MN2341	Harris Site	Uncompahgre LU	Beta-26648	Wood	3460±100	-25	2030 BC to 1530 BC	Tucker and Society 1989
			Beta-25625	Wood	2730±200	-25	1390 BC to 410 BC	Tucker and Society 1989
			Beta-25624	Wood	3510±270	-25	2620 BC to 1130 BC	Tucker and Society 1989
5MN2628	Oak Hill	Uncompahgre National Forest, Private	Beta-117371	Charcoal	1450±60	-25	AD 440 to AD 670	Cater 2001
5MN2629		Uncompahgre National Forest	Beta-36043	Wood	810±90	-25	AD 1030 to AD 1380	Greubel 1989
5MN273		West End LU	Beta-130974	Charcoal	1490±70	-25	AD 430 to AD 660	Eckman et al. 2001
			Beta-130975	Charcoal	3630±80	-25	2200 BC to 1760 BC	Eckman et al. 2001
5MN2922		Uncompahgre LU	Beta-19355	Wood	880±50	-25	AD 1030 to AD 1250	McDonald and Horn 1987
5MN3462	Jeff Lick Circles	Uncompahgre National Forest	UCIAMS-43144	Charcoal	1465±20	-25	AD 560 to AD 640	Reed and Emslie 2008
5MN367	Roc Creek	West End LU	UGA-926	Charcoal	1045±60	-25	AD 880 to AD 1160	Brandau and Noakes 1978; McMahon 2000
5MN368	Battleship (Weimer Ranch)	West End LU	UGA-1274	Charcoal	870±70	-25	AD 1030 to AD 1270	Crane 1977, 1978; Greubel et al. 2009; McMahon 2000
5MN3760		West End LU	Beta-49464	Wood	2670±70	-25	1010 BC to 600 BC	Conner and Hutchins 1992
			Beta-45803	Wood	2300±80	-25	750 BC to 170 BC	Conner and Hutchins 1992
5MN3859	Coalbank Canyon	Uncompahgre LU	Beta-131495	Charcoal	4530±60	-25	3490 BC to 3030 BC	Kalasz et al. 2001b
			Beta-131497	Other	2060±60	-25	350 BC to AD 70	Kalasz et al. 2001b

Table 17. Radiocarbon Determinations from Sites in the Uncompahgre RMP Area (after Berry 2009).

Smithsonian Site Number	Site Name	Location	Lab Number	Sampled Material	Conventional Date	13C/12 C Ratio	Calibrated Dates (2 sigma)	Report Reference
			Beta-131498	Other	2410±70	-25	760 BC to 390 BC	Kalasz et al. 2001b
			Beta-131499	Charcoal	4010±80	-25	2870 BC to 2290 BC	Kalasz et al. 2001b
			Beta-131500	Other	4770±60	-25	3650 BC to 3380 BC	Kalasz et al. 2001b
			Beta-131501	Charcoal	3290±60	-25	1730 BC to 1480 BC	Kalasz et al. 2001b
			Beta-131502	Charcoal	4060±60	-25	2870 BC to 2470 BC	Kalasz et al. 2001b
			Beta-131503	Charcoal	3860±70	-25	2560 BC to 2070 BC	Kalasz et al. 2001b
			Beta-131504	Other	2450±60	-25	760 BC to 410 BC	Kalasz et al. 2001b
			Beta-131505	Charcoal	4410±70	-25	3340 BC to 2900 BC	Kalasz et al. 2001b
			Beta-131506	Charcoal	5240±80	-25	4320 BC to 3810 BC	Kalasz et al. 2001b
			Beta-131507	Charcoal	4540±70	-25	3510 BC to 3020 BC	Kalasz et al. 2001b
			Beta-131509	Charcoal	3070±70	-25	1490 BC to 1130 BC	Kalasz et al. 2001b
			Beta-131496	Other	1970±70	-25	160 BC to AD 210	Kalasz et al. 2001b
			Beta-131508	Charcoal	4400±70	-25	3340 BC to 2900 BC	Kalasz et al. 2001b
5MN3876	Transfer Road Hamlet	Uncompahgre LU	Beta-131521	Charcoal	1590±60	-25	AD 340 to AD 600	Kalasz et al. 2001a
			Beta-131519	Charcoal	1900±50	-25	AD 1 to AD 240	Kalasz et al. 2001a
			Beta-131510	Charcoal	1880±70	-25	40 BC to AD 320	Kalasz et al. 2001a
			Beta-131512	Charcoal	1930±70	-25	90 BC to AD 240	Kalasz et al. 2001a
			Beta-131513	Charcoal	1900±50	-25	AD 1 to AD 240	Kalasz et al. 2001a
			Beta-131514	Charcoal	1490±70	-25	AD 430 to AD 660	Kalasz et al. 2001a
			Beta-131515	Charcoal	960±60	-25	AD 990 to AD 1210	Kalasz et al. 2001a
			Beta-131516	Charcoal	1840±60	-25	AD 30 to AD 340	Kalasz et al. 2001a
			Beta-131517	Charcoal	1840±80	-25	AD 1 to AD 380	Kalasz et al. 2001a
			Beta-131520	Charcoal	1420±70	-25	AD 440 to AD 770	Kalasz et al. 2001a
			Beta-131518	Charcoal	2040±70	-25	350 BC to AD 120	Kalasz et al. 2001a
5MN3880		Uncompahgre LU	Beta-130979	Charcoal	1050±80	-25	AD 780 to AD 1160	Eckman et al. 2001
			Beta-130978	Charcoal	1880±40	-25	AD 30 to AD 240	Eckman et al. 2001

Table 17. Radiocarbon Determinations from Sites in the Uncompahgre RMP Area (after Berry 2009).

Smithsonian Site Number	Site Name	Location	Lab Number	Sampled Material	Conventional Date	13C/12 C Ratio	Calibrated Dates (2 sigma)	Report Reference
5MN3881		Uncompahgre LU	Beta-130981	Charcoal	1410±70	-25	AD 440 to AD 770	Eckman et al. 2001
			Beta-130980	Charcoal	1230±70	-25	AD 660 to AD 970	Eckman et al. 2001
5MN3883		Uncompahgre LU	Beta-130983	Charcoal	1140±60	-25	AD 720 to AD 1020	Eckman et al. 2001
			Beta-130982	Charcoal	1370±60	-25	AD 560 to AD 780	Eckman et al. 2001
5MN3887		Uncompahgre LU	Beta-130984	Charcoal	2130±60	-25	364 BC to 3 BC	Eckman et al. 2001
			Beta-115884	Charcoal	1650±50	-25	AD 260 to AD 540	Eckman et al. 2001
5MN3888		Uncompahgre LU	Beta-130987	Charcoal	1630±60	-25	AD 260 to AD 560	Eckman et al. 2001
			Beta-130985	Charcoal	1440±60	-25	AD 440 to AD 680	Eckman et al. 2001
5MN40	Shavano Springs	Uncompahgre LU	I-821	Charcoal	2695±180	-25	1310 BC to 400 BC	Buckles 1971
			I-820	Charcoal	2100±200	-25	750 BC to AD 340	Buckles 1971
5MN4081		West End LU	Beta-130988	Charcoal	1490±60	-25	AD 430 to AD 650	Eckman et al. 2001
5MN4082		West End LU	Beta-131522	Charcoal	1270±60	-25	AD 660 to AD 890	Slessman et al. 2001
5MN4253	Schmidt Site	West End LU	Beta-117121	Charcoal	330±50	-25	AD 1450 to AD 1650	Greubel and Cater 2001
			Beta-127856	Bone-Animal	300±70	-25	AD 1440 to AD 1950	Greubel and Cater 2001
			Beta-117125	Charcoal	2300±40	-25	410 BC to 210 BC	Greubel and Cater 2001
			Beta-139119	Maize	2010±40	-11.2	150 BC to AD 70	Greubel and Cater 2001
			Beta-139120	Maize	2110±40	-9.4	350 BC to AD 1	Greubel and Cater 2001
			Beta-117469	Charcoal	590±50	-25	AD 1290 to AD 1420	Greubel and Cater 2001
			Beta-117470	Charcoal	740±60	-25	AD 1170 to AD 1390	Greubel and Cater 2001
			Beta-117471	Charcoal	650±50	-25	AD 1280 to AD 1400	Greubel and Cater 2001
			Beta-117122	Charcoal	2150±60	-25	370 BC to 50 BC	Greubel and Cater 2001
			Beta-117123	Charcoal	2300±60	-25	540 BC to 200 BC	Greubel and Cater 2001
			Beta-130994	Charcoal	1460±70	-25	AD 430 to AD 670	Greubel and Cater 2001
			Beta-117468	Charcoal	890±110	-25	AD 900 to AD 1290	Greubel and Cater 2001
			Beta-130992	Charcoal	120±50	-25	AD 1670 to AD 1950	Greubel and Cater 2001
			Beta-117462	Charcoal	2240±70	-25	410 BC to 100 BC	Greubel and Cater 2001

Table 17. Radiocarbon Determinations from Sites in the Uncompahgre RMP Area (after Berry 2009).

Smithsonian Site Number	Site Name	Location	Lab Number	Sampled Material	Conventional Date	13C/12 C Ratio	Calibrated Dates (2 sigma)	Report Reference
			Beta-130990	Charcoal	1450±60	-25	AD 440 to AD 670	Greubel and Cater 2001
			Beta-130989	Charcoal	2870±70	-25	1265 BC to 850 BC	Greubel and Cater 2001
			Beta-117124	Charcoal	450±50	-25	AD 1330 to AD 1630	Greubel and Cater 2001
			Beta-127858	Charcoal	1740±60	-25	AD 130 to AD 420	Greubel and Cater 2001
			Beta-130993	Charcoal	1370±60	-25	AD 560 to AD 780	Greubel and Cater 2001
			Beta-117459	Charcoal	650±60	-25	AD 1270 to AD 1410	Greubel and Cater 2001
			Beta-117118	Charcoal	990±50	-25	AD 900 to AD 1170	Greubel and Cater 2001
			Beta-117119	Charcoal	360±50	-25	AD 1450 to AD 1640	Greubel and Cater 2001
			Beta-117126	Charcoal	1010±50	-25	AD 900 to AD 1160	Greubel and Cater 2001
			Beta-117127	Charcoal	650±50	-25	AD 1280 to AD 1400	Greubel and Cater 2001
			Beta-117464	Charcoal	1900±70	-25	50 BC to AD 320	Greubel and Cater 2001
			Beta-117128	Charcoal	1150±50	-25	AD 720 to AD 1000	Greubel and Cater 2001
			Beta-117467	Charcoal	2110±90	-25	380 BC to AD 50	Greubel and Cater 2001
			Beta-117460	Charcoal	300±60	-25	AD 1450 to AD 1950	Greubel and Cater 2001
			Beta-117461	Charcoal	400±50	-25	AD 1430 to AD 1630	Greubel and Cater 2001
			Beta-117463	Charcoal	2210±80	-25	400 BC to 50 BC	Greubel and Cater 2001
			Beta-127857	Charcoal	1960±70	-25	160 BC to AD 220	Greubel and Cater 2001
			Beta-117465	Charcoal	2120±90	-25	380 BC to 50 BC	Greubel and Cater 2001
			Beta-117466	Charcoal	2060±70	-25	350 BC to AD 80	Greubel and Cater 2001
			Beta-117120	Charcoal	560±50	-25	AD 1300 to AD 1440	Greubel and Cater 2001
5MN4255		West End LU	Beta-130995	Charcoal	2320±60	-25	730 BC to 200 BC	Eckman et al. 2001
5MN4270	Aldasoro Site	West End LU	Beta-117117	Charcoal	560±40	-25	AD 1300 to AD 1430	Greubel and Reed 2001
5MN43	Sanburg Site	Uncompahgre LU	Beta-13054	Wood	2280±80	-25	730 BC to 110 BC	Buckles 1971
			Beta-183536	Charcoal	910±60	-25	AD 1020 to AD 1250	Reed and Smith Gebauer 2004
5MN4350	Bundle Rockshelter	Uncompahgre LU	Beta-70671	Juniper Bark	1600±60	-25	AD 260 to AD 600	Reed and Fike 1995

Table 17. Radiocarbon Determinations from Sites in the Uncompahgre RMP Area (after Berry 2009).

Smithsonian Site Number	Site Name	Location	Lab Number	Sampled Material	Conventional Date	13C/12 C Ratio	Calibrated Dates (2 sigma)	Report Reference
5MN517	Hill I (Weimer Ranch)	West End LU	Beta-205836	Maize	1140±40	-11.3	AD 780 to AD 990	Greubel et al. 2006; Greubel et al. 2009
			UGA-1132	Charcoal	1190±355	-25	AD 90 to AD 1430	Crane 1977, 1978; Greubel et al. 2006; Greubel et al. 2009; McMahon 2000
5MN519	Cottonwood Cave	Uncompahgre National Forest	Beta-36438	Maize	2220±80	-25	400 BC to 50 BC	Stiger and Larson 1992
5MN5827		Outside West End LU on BLM Land	Beta-173752	Charcoal	2240±60	-25	400 BC to 170 BC	Honeycutt and Fetterman 2001
			Beta-MN5827	Charcoal	4480±70	-25	3360 BC to 2930 BC	Honeycutt and Fetterman 2001
5MN5970		West End LU	Beta-197390	Charcoal	2810±60	-21.4	1130 BC to 820 BC	Martin and Conner 2004
5MN653	Wagon Bend (Weimer Ranch)	West End LU	UGA-1275	Charcoal	1370±60	-25	AD 560 to AD 780	Crane 1977, 1978; Greubel et al. 2009; McMahon 2000
			Beta-205834	Maize	1120±40	-11.6	AD 810 to AD 1010	Greubel et al. 2006; Greubel et al. 2009
5MN654	Cottonwood Pueblo (Weimer Ranch)	West End LU	UGA-1379	Charcoal	905±65	-25	AD 1020 to AD 1250	Crane 1977, 1978; Greubel et al. 2009; McMahon 2000
			Beta-205227	Charcoal	850±50	-21.2	AD 1040 to AD 1270	Greubel et al. 2006; Greubel et al. 2009
			Beta-205835	Maize	1050±40	-9.9	AD 900 to AD 1030	Greubel et al. 2006; Greubel et al. 2009
			Beta-205224	Charcoal	1320±90	-22.2	AD 570 to AD 900	Greubel et al. 2006; Greubel et al. 2009
5MN7720	Weimer IV (Weimer Ranch)	West End LU	Beta-205225	Charcoal	1980±60	-23.5	110 BC to AD 130	Greubel et al. 2006; Greubel et al. 2009
			Beta-205226	Charcoal	1290±80	-21.5	AD 620 to AD 900	Greubel et al. 2006; Greubel et al. 2009
			Beta-205833	Maize	1060±40	-11.6	AD 900 to AD 1030	Greubel et al. 2006; Greubel et al. 2009
5MN652	Middle Hill (Weimer Ranch)	West End LU	Beta-205837	Maize	1050±40	-10.5	AD 900 to AD 1030	Greubel et al. 2006; Greubel et al. 2009
5MN7721	Creek Knoll (Weimer Ranch)	West End LU	Beta-205229	Charcoal	1260±40	-20.9	AD 670 to AD 880	Greubel et al. 2006; Greubel et al. 2009
5MN8429	Garvey Site #1	Uncompahgre National	UCIAMS-43151	Charcoal	1205±25	-25	AD 720 to AD 890	Reed and Emslie 2008

Table 17. Radiocarbon Determinations from Sites in the Uncompahgre RMP Area (after Berry 2009).

Smithsonian Site Number	Site Name	Location	Lab Number	Sampled Material	Conventional Date	13C/12 C Ratio	Calibrated Dates (2 sigma)	Report Reference
		Forest	UCAIMS-43150	Charcoal	1240±20	-25	AD 690 to AD 870	Reed and Emslie 2008
			UCIAMS-43149	Charcoal	1120±25	-25	AD 880 to AD 990	Reed and Emslie 2008
5MN8430	Garvey Site #2	Uncompahgre National Forest	UCIAMS-43152	Charcoal	1190±20	-25	AD 780 to AD 890	Reed and Emslie 2008
			UCIAMS-43153	Charcoal	1220±20	-25	AD 710 to AD 880	Reed and Emslie 2008
5MN8431	Joe #4	Uncompahgre National Forest	UCIAMS-43156	Charcoal	1165±20	-25	AD 780 to AD 950	Reed and Emslie 2008
			UCIAMS-43155	Charcoal	1305±20	-25	AD 660 to AD 770	Reed and Emslie 2008
5MN868	Tabeguache Cave	Uncompahgre National Forest	Beta-76546	Maize	2060±60	-25	350 BC to AD 70	Stiger 1994
5MN890	Tabeguache Cave II	West End LU	Beta-76547	Charcoal	1430±60	-25	AD 440 to AD 760	Stiger 1994
5OR167		Ouray LU	Beta-2000	Wood	3095±130	-25	1660 BC to 1000 BC	Muceus and Lawrence 1986
			Beta-2001	Wood	4920±270	-25	4320 BC to 3020 BC	Muceus and Lawrence 1986
			Beta-2002	Wood	6710±270	-25	6200 BC to 5053 BC	Muceus and Lawrence 1986
			Beta-2454	Wood	2320±90	-25	760 BC to 180 BC	Muceus and Lawrence 1986
			Beta-1998	Wood	3215±110	-25	1750 BC to 1200 BC	Muceus and Lawrence 1986
			Beta-1999	Wood	3180±100	-25	1730 BC to 1130 BC	Muceus and Lawrence 1986
5OR179		Ouray LU	Beta-1968	Wood	2010±100	-25	350 BC to AD 230	Muceus and Lawrence 1986
			Beta-2635	Wood	2300±100	-25	760 BC to 110 BC	Muceus and Lawrence 1986
			Beta-2636	Charcoal	1800±80	-25	AD 60 to AD 410	Muceus and Lawrence 1986
			Beta-2637	Wood	1840±50	-25	AD 60 to AD 320	Muceus and Lawrence 1986
5OR182		Ouray LU	Beta-2638	Wood	2030±80	-25	350 BC to AD 130	Muceus and Lawrence 1986
			Beta-1971	Wood	510±60	-25	AD 1300 to AD 1490	Muceus and Lawrence 1986
			Beta-2151	Wood	1860±90	-25	40 BC to AD 380	Muceus and Lawrence 1986
			Beta-2640	Wood	1910±90	-25	160 BC to AD 330	Muceus and Lawrence 1986

Table 17. Radiocarbon Determinations from Sites in the Uncompahgre RMP Area (after Berry 2009).

Smithsonian Site Number	Site Name	Location	Lab Number	Sampled Material	Conventional Date	13C/12 C Ratio	Calibrated Dates (2 sigma)	Report Reference
			Beta-2639	Wood	1870±70	-25	40 BC to AD 330	Muceus and Lawrence 1986
5OR198		Ouray LU	Beta-2641	Wood	1730±50	-25	AD 140 to AD 420	Muceus and Lawrence 1986
			Beta-2455	Wood	1250±70	-25	AD 650 to AD 950	Muceus and Lawrence 1986
			Beta-1969	Wood	980±60	-25	AD 900 to AD 1210	Muceus and Lawrence 1986
5OR243		Ouray LU	Beta-2456	Wood	1680±60	-25	AD 240 to AD 530	Muceus and Lawrence 1986
			Beta-1970	Wood	2060±60	-25	350 BC to AD 70	Muceus and Lawrence 1986
			Beta-2642	Wood	2830±60	-25	1190 BC to 840 BC	Muceus and Lawrence 1986
			Beta-2643	Other	2000±50	-25	160 BC to AD 120	Muceus and Lawrence 1986
			Beta-2644	Wood	2220±80	-25	400 BC to 50 BC	Muceus and Lawrence 1986
5OR317		Ouray LU	Beta-2152	Wood	4145±90	-25	2900 BC to 2490 BC	Muceus and Lawrence 1986
5SM232		West End LU	Beta-182115	Charcoal	6780±80	-25	5840 BC to 5550 BC	Conner et al. 2003
			Beta-182114	Charcoal	3350±60	-25	1870 BC to 1500 BC	Conner et al. 2003
5SM2423	The Broken Leg Site	San Juan National Forest	Beta-115885	Charcoal	9140±70	-25	8550 BC to 8250 BC	Firor 2001
			Beta-115886	Charcoal	1670±70	-25	AD 220 to AD 550	Firor 2001
			Beta-115887	Charcoal	9170±60	-25	8550 BC to 8280 BC	Firor 2001
5SM2425	Simpson Wickiup Site	West End LU	Beta-127188	Charcoal	520±50	-25	AD 1300 to AD 1450	Greubel 2001a
			Beta-127194	Other	102±7	-25	AD 1700 to AD 1920	Greubel 2001a
			Beta-127193	Charcoal	530±60	-25	AD 1300 to AD 1450	Greubel 2001a
			Beta-127185	Charcoal	140±70	-25	AD 1660 to AD 1950	Greubel 2001a
			Beta-127184	Charcoal	80±50	-25	AD 1680 to AD 1960	Greubel 2001a
			Beta-127183	Charcoal	1070±50	-25	AD 780 to AD 1120	Greubel 2001a
			Beta-127182	Charcoal	460±60	-25	AD 1320 to AD 1630	Greubel 2001a
			Beta-127192	Charcoal	1350±60	-25	AD 570 to AD 810	Greubel 2001a
			Beta-127191	Charcoal	190±60	-25	AD 1530 to AD 1950	Greubel 2001a
			Beta-127189	Charcoal	450±50	-25	AD 1330 to AD 1630	Greubel 2001a
			Beta-127187	Charcoal	80±60	-25	AD 1680 to AD 1960	Greubel 2001a

Table 17. Radiocarbon Determinations from Sites in the Uncompahgre RMP Area (after Berry 2009).

Smithsonian Site Number	Site Name	Location	Lab Number	Sampled Material	Conventional Date	13C/12 C Ratio	Calibrated Dates (2 sigma)	Report Reference
			Beta-127186	Charcoal	490±60	-25	AD 1300 to AD 1620	Greubel 2001a
			Beta-127195	Charcoal	5440±100	-25	4460 BC to 4000 BC	Greubel 2001a
			Beta-127196	Charcoal	440±70	-25	AD 1330 to AD 1640	Greubel 2001a
			Beta-127197	Charcoal	1240±50	-25	AD 670 to AD 890	Greubel 2001a
			Beta-131103	Charcoal	3800±70	-25	2460 BC to 2040 BC	Greubel 2001a
			Beta-131104	Charcoal	5760±60	-25	4760 BC to 4460 BC	Greubel 2001a
			Beta-127190	Charcoal	1230±70	-25	AD 660 to AD 920	Greubel 2001a
5SM2426		West End LU	Beta-131025	Charcoal	1210±40	-25	AD 690 to AD 940	Eckman et al. 2001
			Beta-131026	Charcoal	1280±40	-25	AD 660 to AD 860	Eckman et al. 2001
5SM2427	NA	West End LU	Beta-131028	Charcoal	5910±90	-25	5000 BC to 4550 BC	Eckman et al. 2001
			Beta-131027	Charcoal	60±60	-25	AD 1680 to AD 1960	Eckman et al. 2001

Taxonomic Issues

For heuristic and descriptive purposes, archaeologists divide the span of human occupation into units, on the basis of time or cultural content. The archaeological units defined by Reed and Metcalf (1999) for the Northern Colorado River Basin prehistoric context are used in this document; they are presented in Table 18. The Archaic-era dates in Table 18 differ from those presented in Reed and Metcalf (1999:6), however, as those in the context were based on uncalibrated radiocarbon determinations, whereas the dates for the other archaeological units were based on calibrated determinations. The dates in Table 18 are consistently based on calibrated radiocarbon determinations.

Table 18. Archaeological Units and Dates[1].

Era	Tradition or Period	Date Range
Paleoindian Era		**11,500 – 6400 B.C.**
	Clovis tradition	11,500 – 10,500 B.C.
	Goshen tradition	11,500 – 10,700 B.C.
	Folsom tradition	10,800 – 9500 B.C.
	Foothill-Mountain tradition	9500 – 7400 B.C.
Archaic Era		**7400 – 200 B.C.**
	Pioneer period	7400 – 5400 B.C.
	Settled period	5400 – 3100 B.C.
	Transitional period	3100 – 1200 B.C.
	Terminal period	1200 – 200 B.C.
Formative Era		**200 B.C. – A.D. 1300**
	Gateway tradition	A.D. 900 – 1100[2]
	Aspen tradition	200 B.C. – A.D. 1300
Protohistoric Era		**A.D. 1300 – 1881**
	Canalla phase	A.D. 1300 – 1650
	Antero phase	A.D. 1650 – 1881

1 From Reed and Smith Gebauer (2004), as revised from Reed and Metcalf (1999).
2 Dates for the Gateway tradition presented here are based on Reed (2005), revised from Reed (1997) and Reed and Metcalf (1999),

It should be noted that the term *Protohistoric* as used by Reed and Metcalf (1999) and Reed and Smith Gebauer (2004) to apply to the nearly 600-year period following the Formative era has recently been vigorously criticized by some historical archaeologists working in Colorado (Baker et al. 2007). Baker et al. (2007) point out that the term as commonly used by most American archaeologists refers to a period of time between the acquisition of "European-derived goods" and actual contact with Europeans or Euroamericans as indicated by written records or other evidence, a period of time that may have ranged from a few years to a century or more. That is, protohistory is the period of time between late prehistory and history. As contentious as this issue seems within certain circles, it must be said that many prehistorians seem to shrug it off, understanding that Reed and Metcalf unambiguously intended the term *Protohistoric era* to simply refer to a span of time that was not otherwise consistently named in the regional literature, and which was not intended to imply information about cultural content (Reed and Metcalf 1999:5, 146). This is not to say that the objections raised by Baker and his colleagues are not valid; Reed and Metcalf's use of the term is problematic for researchers who specialize in pre- and post-contact Native American archaeology. Nevertheless, for a variety of reasons (e.g., convenience, entrenchment in the literature, etc.) many archaeologists in the region continue to use the term as Reed and Metcalf intended, as a label for the period of time following the end of the settled farming lifeway as represented by Fremont, Ancestral Puebloan, and Gateway peoples until the forced removal of the Ute to reservations in 1881 (Reed and Metcalf 1999:146). It should also be pointed out that there is precedent for such a definition: Kidder

(1927), Wilcox and Masse (1981), and Adams and Duff (2004) have all used the term to refer to the Pueblo IV period (ca A.D. 1300-1600) in the Southwest, a period corresponding to the first half of Reed and Metcalf's synthetic unit. For the reasons noted above, the term Protohistoric era is used in this document as defined in Reed and Metcalf (Reed and Metcalf 1999).

The archaeological units presented in Table 18 are discussed below in the context of the UFO study area. Some portions are reproduced or otherwise summarized from the UPAP research design and context recently prepared by Alpine (Reed and Smith Gebauer 2004). The UPAP research design presents detailed discussions of the archaeological data for each era and time period defined for the Uncompahgre Plateau and surrounding region and can be used in tandem with this overview document.

Paleoindian Era

Introduction

Human occupation of the UFO study area probably commenced with the Paleoindian era. No evidence of a Pre-Clovis occupation has been found in western Colorado. The Paleoindian era subsumes what Wiley and Phillips (1958) have defined as the Lithic or Paleoindian stage, an adaptation by the early immigrants to the New World to terminal Pleistocene environments. The Lithic stage is purported to represent a big-game hunting adaptation, though gathering may have been an important subsistence activity in some areas.

Following Reed and Metcalf (Reed and Metcalf 1999), the Paleoindian era is defined for the period between approximately cal 11,450 and 6450 B.C. These dates are older than what appears in much of the region's archaeological literature because they have been calibrated and reflect adjustments proposed by Fiedel (1999). Fiedel (1999:99) has shown that several periods occurred during the late Pleistocene and early Holocene when "abnormally large ratios of ^{14}C effectively counterbalanced the radioactive decay rate, such that radiocarbon ages appear to remain constant over centuries of elapsed calendrical time."

The Paleoindian era is divided into early and late periods to account for obvious changes in projectile point types and, to a lesser extent, changes in settlement and subsistence practices. The early period of the Paleoindian era extends between approximately cal 11,450 and 9550 B.C. It includes the Clovis, Goshen, and Folsom traditions. Now extinct fauna were intensively exploited during the early period, especially during the Clovis tradition. The Clovis and Folsom traditions are characterized by large, finely crafted fluted projectile points. The late period of the Paleoindian period is herein dated between cal 9550 and 6450 B.C. A wider variety of lanceolate projectile points were manufactured during the late Paleoindian period, but none were fluted. As will be discussed below, the late Paleoindian period appears to represent increased variability, possibly because of the adoption of subsistence practices more intensively focused on localized resources.

The Database

Fifty-five Paleoindian sites and 12 Paleoindian isolated finds have been identified in the UFO study area (Figure 14); 43 of the sites are on BLM-managed lands. Thirty-six of the sites (65.5 percent) are on the West End LU. Only 1.4 percent of the sites recorded in the UFO study area have yielded Paleoindian artifacts. Considering that the Paleoindian era endured for approximately five millennia—roughly 38 percent of the period of human occupation of the region—the dearth of Paleoindian materials is striking. Although erosion and other site preservation factors have probably destroyed or reduced the visibility of the region's oldest sites, it also seems likely that, compared to later periods, human populations were very low on the Colorado Plateau during the Paleoindian era.

The quality of the Paleoindian database is small and relatively unreliable. Most of the sites herein attributed to the Paleoindian era are either unexcavated or include a small quantity of Paleoindian artifacts in apparent association with artifacts attributed to later eras. The Christmas Rockshelter is an example of the latter case, where a Midland projectile point was found in a level that was chronometrically coeval with an overlying Archaic level yielding Archaic artifacts (Buckles 1985). In the case of the Initial site (5MN17) and Shirley's Shelter (5MN28), the Paleoindian artifacts were found in the general vicinities of the cited excavated sites, rather than within excavated sediments, so could be regarded as isolated finds, completely unrelated to the excavated components (see Buckles 1971). That diagnostic Paleoindian artifacts occur in deposits that are attributed to later archaeological units on the basis of a preponderance of evidence suggests collection and reuse of the materials by later peoples and, in some cases, mixing of archaeological sediments. Regardless of contextual problems, most researchers focusing on the region's Paleoindian era agree that sufficient quantities of Paleoindian artifacts are present to demonstrate their occupation of the region, rather than collection and curation of such artifacts by later peoples (e.g., Pitblado 2003).

The quality of the Paleoindian database—and the resulting interpretations—will improve with the inclusion of additional discrete Paleoindian components. These may include both chronometrically dated components yielding diagnostic Paleoindian artifacts and unexcavated components with multiple diagnostic Paleoindian artifacts that are horizontally segregated from later diagnostic artifacts.

Space/Time Systematics

Archaeological units are constantly in need of reevaluation as the archaeological database grows. The "Paleoindian era" unit is the most encompassing unit herein considered, and has been divided into "early Paleoindian" and "late Paleoindian" units, following Reed and Metcalf (1999), to reflect important differences in lifeways and technology. The early Paleoindian units may be further divided into conventional units, such as the Clovis, Goshen, and Folsom traditions. So few excavation data are available for these units in the region that further subdivision is untenable; additionally, regional data are insufficient to address the utility of the conventional early Paleoindian traditions.

The late Paleoindian period is composed of some relatively specific archaeological units, such as the Cody complex, but such complexes are not routinely applied to western Colorado Paleoindian components. Instead, the Foothill-Mountain tradition has been used, which is seen as a generalized adaptation to mountainous regions (e.g., Reed and Metcalf 1999). Frison (1992) contrasts the Foothill-Mountain lifeway with the Plains-adapted lifeway, the latter of which is based on specialized bison procurement. Because the Colorado Plateau and the rugged portions of the Southern Rocky Mountains outside of mountain parks were characterized by relatively small, dispersed herds of bison and by species such as deer and elk that tend to be dispersed across the landscape, it is very likely that late Paleoindian adaptations were different than that of the Plains, where large bison herds were available. Direct evidence of Foothill-Mountain tradition subsistence practices in western Colorado is lacking, however. The Foothill-Mountain tradition remains a useful concept in west-central Colorado, if only to differentiate the more generalized subsistence system from that of the Plains.

In her most recent work, Pitblado (2003) scarcely makes use of the Foothill-Mountain tradition concept, perhaps recognizing the dearth of supporting subsistence data from the region. She does, however, make an argument for discrete human groups in the region during the late Paleoindian period. Based on an extensive analysis of a sample of late Paleoindian projectile points from the Intermountain West, Pitblado (2003) argues that the Southern Rocky Mountains was occupied year-round by Paleoindians. Distinct populations, with different projectile point types and technology, also used or occupied the Southern Rocky Mountains; some were primarily centered on

the Plains, and others were primarily centered in the Great Basin or the Colorado Plateau. Pitblado (2003) even argues that these groups had different mobility strategies, with the Great Basin and Colorado Plateau groups engaged in a more "forager" lifeway than the inhabitants of the Southern Rocky Mountains and the Plains, who were more at the "collector" end of the mobility continuum (see Binford 1980).

Pitblado (2003) does not ascribe the various late Paleoindian groups to specific archaeological units, conventional or otherwise. These unnamed groups, however, are recognized through their use of conventional late Paleoindian projectile point types. Pitblado's purported year-round residents of the Southern Rocky Mountains, for example, are believed to have manufactured Angostura points. Angostura points are more common in the Southern Rocky Mountains than any other physiographic province, though they occur in all regions in her study area (Pitblado 2003). Plains-centered groups that are thought to have seasonally exploited the mountains included the makers of Jimmy Allen/Frederick, Hell Gap, Goshen/Plainview, and Eden/Firstview projectile points. Late Paleoindian groups primarily centered in the Great Basin are recognized by Great Basin Stemmed projectile points. Other projectile point types evidence less association with particular geographic areas. Scottsbluff and Concave Base Stemmed points occur in more comparable relative frequencies in all areas. Pitblado (2003) has observed that the relative frequencies of point types vary by region, as do other point variables, including raw material preferences, degree of patterning in flaking, frequency of stem grinding, frequency of broken points, and frequency of reworking of broken points into smaller projectile points or into other tool classes (Pitblado 2003). The implication is that different groups of people made different projectile point styles. This is supported by excavation data from the Plains (e.g., Frison and Todd 1987), wherein discrete components tend to yield a limited range of projectile point types.

The Colorado Plateau late Paleoindian projectile points tend to share technological attributes with Great Basin points, in terms of size, raw material selection, and degree of craftsmanship, and other variables (Pitblado 2003). Both provinces are characterized by high relative frequencies of Great Basin Stemmed projectile points. Great Basin Stemmed points constitute 80 percent of Pitblado's sample from the Great Basin, 54 percent of the points from Great Basin Mountains, and 50 percent of the points from the Colorado Plateau. The projectile point types studied by Pitblado from the region, however, do not indicate sole association with Great Basin groups. Twenty-five percent of the late Paleoindian points from the Colorado Plateau are classified as Angostura points, compared to 41 percent of the points from the Southern Rocky Mountains, 8 percent of the points from the Great Basin Mountains, and less than 5 percent from the Great Basin and Plains. This suggests that the Angostura-producing mountain dwellers also utilized the Colorado Plateau during some periods or during some portions of their annual rounds. The Colorado Plateau point sample also contains specimens classified as Scottsbluff (8 percent), Eden/Firstview (4 percent), Concave Base Stemmed (8 percent), and Jimmy Allen/Frederick (4 percent). In Pitblado's model, these points suggest occupation of the Colorado Plateau by other groups, some of which were primarily inhabitants of the Plains. Limited temporal evidence suggests rough contemporaneity among point types (Pitblado 2003).

In the UPAP study area, it was found that the relative frequencies of projectile point types were a poor match with those derived by Pitblado (2003) from her study (Reed and Smith Gebauer 2004). The UPAP sample (n=22) included far more Plainview/Goshen/Meserve, Hell Gap, Scottsbluff/Cody complex, and Frederick/Jimmy Allen points than Pitblado's sample for the Colorado Plateau, but fewer Angostura points (Reed and Smith Gebauer 2004:40). The percentages of point types from the UPAP study area—which, of course, largely overlaps the UFO study area—also did not compare favorably to any other physiographic province. The discrepancies may be due to a number of factors, including small sample sizes and interanalyst variation in point classifications. The discrepancies point out the need for additional data and for reexamination of Pitblado's conclusions concerning the frequencies of common point types on the Colorado Plateau.

Pitblado's model can be further tested when sample sizes of Paleoindian projectile points increase. Excavation data, however, will be most valuable. Research should focus on determining whether sets of sites yielding a particular type of late Paleoindian projectile point type evince less within-group variability than extra-group variability in regards to technology, settlement and subsistence, and chronology. Although a site on the Colorado Plateau with Eden points would be expected to have important differences from an Eden/Firstview site on the Plains, there should be similarities that show a common technology or lifeway that can distinguish it from a site with Great Basin Stemmed points.

The implications of Pitblado's (2003) argument for year-round occupants of the Southern Rocky Mountains also merit study. As shown above, this unit is characterized by Angostura projectile points; they are predominantly found in the Rockies, but are also relatively common on the Colorado Plateau. This implies that the Colorado Plateau was commonly part of the homeland or use area for these peoples. Whether the Colorado Plateau was commonly integrated into annual rounds, perhaps constituting winter habitation areas, or constituted more sporadic use of the area is of research interest. Mapping of the distribution of Angostura points on the Colorado Plateau might also be insightful. If the Colorado Plateau was integrated into the annual rounds of a predominantly mountain-based group, the points might be expected to be more commonly distributed along the eastern perimeter of the Colorado Plateau.

The utility of our archaeological units for describing the transition from the Paleoindian to the Archaic era is also worthy of study. Whereas traditional models purported a rather major change in lifeways from the Paleoindian stage to the Archaic stage, which involved a change from a big-game hunting focus to a generalized hunting and gathering lifeway based on both plant and animal exploitation, recent interpretations downplay the differences. Simms (2008; 1988), for example, suggests that the Paleoindian and Archaic lifeways were relatively similar in the Great Basin. The Foothill-Mountain tradition concept, which has been applied to west-central Colorado (e.g., Pitblado 1993; Reed and Metcalf 1999), also implies general similarities between the late Paleoindian and early Archaic lifeways, by asserting that the late Paleoindian subsistence practices were more generalized than the Paleoindian bison-hunting groups of the Plains and the high mountain parks. Schroedl (1991) even suggests that Archaic lifeways and technology developed in the lower elevations, at times when the late Paleoindian groups had followed megafauna into higher elevation refugia in the face of a warming environment. Addressing the nature of the transition will require well-dated components from the period in question with both artifacts and ecofacts indicative of subsistence practices.

In summary, investigation of Paleoindian archaeological units is desirable and will be possible as additional Paleoindian components are investigated. The Foothill-Mountain tradition is especially worthy of examination, because it is a relatively new unit whose validity, ultimately, will depend of excavated subsistence and technological data. The unnamed units that Pitblado (2003) applies to sites yielding late Paleoindian projectile points also merits theoretical and empirical examination. To imply that widely distributed sites with common projectile point types represent some degree of cultural linkage is often risky (Emberling 1997).

Chronology

The chronology of Paleoindian occupation of western Colorado is a major topic of research. Relatively few Paleoindian components have been chronometrically dated in the region, and the small database hampers interpretations. Radiocarbon dating is further complicated by Fiedel's (1999) observation that periods within the late Pleistocene and early Holocene were characterized by abnormally large ratios of ^{14}C, resulting in an underestimation of elapsed calendrical time.

One Paleoindian component very near the UFO study area has been chronometrically dated. The Broken Leg site (5SM2423), a large multicomponent site southwest of Norwood, Colorado, was subjected to extensive archaeological excavations during the TransColorado pipeline project (Firor 2001). Excavations at the site yielded four late Paleoindian projectile points, similar to Frederick/James Allen points, a type attributed by Pitblado (2003) to the period between cal 8720 and 4910 B.C. A spurred scraper and a small sample of other lithic artifacts were also attributed to the site's Paleoindian component. Two hearths were subjected to radiocarbon dating; these indicated site occupation sometime between cal 8540 and 8240 B.C. (Firor 2001).

Excavated sites provide superior insight into chronology. Such sites often yield chronometric dates; furthermore, the effects of mixing of artifacts from multiple components can be better assessed. Because so few excavation data pertaining to Paleoindian occupations are present in or near the study area, however, survey data are necessary to fill in the gaps. The recent UPAP study evaluated the evidence for continuity of Paleoindian occupation in the region and, based on the distributions of Paleoindian projectile point styles, concluded that continuous occupation of the study area occurred until approximately cal 7000 B.C. (Reed and Smith Gebauer 2004).

There are many research questions pertaining to Paleoindian chronology that might be formulated, most of which are due to the small size of the chronometric database. Apparent mixing of Paleoindian and later artifacts also confounds interpretations. Other basic chronological research questions that should be applied to Paleoindian components include the following:

- Determination of when the Paleoindian occupation of western Colorado commenced.
- Determinations of whether the components represented by the various and roughly contemporaneous late Paleoindian projectile point types are actually coeval, or are chronologically sequential.
- Identification of the time of transition from Paleoindian to Archaic lifeways, and whether the transition was sequential or temporally overlapping.

Settlement Patterns

To understand Paleoindian settlement patterns, it is necessary to consider the region's paleoenvironmental context. Climatic conditions were substantially different than today's during the late Pleistocene and early Holocene, so a site now in one vegetation zone may have actually been within a vegetation zone currently characterizing a higher elevation setting. During the Pleistocene's last full glacial advance between cal 19,500 and 17,200 B.C., the climate was much cooler than today's, and there was less annual temperature variation. The cooler temperatures may have depressed vegetation zones up to 500 m in mountain settings (Madsen and Currey 1979). Evidence from the Unaweep Canyon area on the Uncompahgre Plateau suggests that glaciers occurred atop the plateau, possibly at this time (see Cole and Young 1983). Following approximately cal 13,400 B.C., annual temperature variation increased and temperatures increased. Vegetation ecotones probably receded in terms of elevation. A minor glacial resurgence, referred to elsewhere as the Younger Dryas, may have been manifest between cal 11,300 and 10,000 B.C. (Madsen 2000). By approximately cal 8800 B.C., the Rocky Mountains had essentially deglaciated (Andrews et al. 1975). Conditions were generally cool until approximately cal 7600 B.C., however. The period following cal 7600 B.C. was substantially warmer and dryer, a trend that continued throughout the rest of the early Holocene (Andrews et al. 1975). The distribution of modern vegetation zones was probably established after cal 7600 B.C., though Benedict (1985) suggests a date of cal 8800 B.C. for this event. Fluctuations since have been of a comparatively minor scale.

The distribution of vegetation zones is probably closely related to the distribution of Paleoindian sites. Citing the work of Kelly (1983), Pitblado (2003) has calculated indices that reflect the amount of plant and animal food available in various major vegetation zones. It is likely that the vegetation zones with the greatest densities of potential foods would have been the most intensively occupied or exploited by prehistoric peoples, as encounter rates with desirable resources would have been highest. The primary product/primary biomass index shown on Table 19 reflects the available energy from new plant tissue, so is a measure of the quantity of potential plant foods. The index is superior to a simple measure of plant biomass per unit of area, because some vegetation zones, such as evergreen forests, have very high biomass that is "locked-up" as wood, which is inedible to most species. The secondary biomass/primary biomass index reflects the general availability of animals within a zone. As shown in Table 19, the swamp/marsh zone is clearly has the most available flora and fauna, followed by the temperate grassland. Woodland/scrublands, tundra, and desert/ semidesert zones are less productive, and the temperate evergreen forest has the least available food.

Table 19. Edible Biomass Ranking of Regional Vegetation Zones (from Pitblado 2003:47).

Vegetation Zone	Primary Product/ Primary Biomass Index	Ranking For Plant Food Potential	Secondary Biomass/ Primary Biomass Index	Ranking For Animal Food Potential
Temperate Grassland	0.38	2	4.3	2
Woodland/Scrubland	0.12	4	0.8	3
Temperate Evergreen Forest	0.04	6	0.2	6
Tundra	0.23	3	0.7	4
Desert/Semidesert	0.13	5	0.7	4
Swamp/Marsh	1.33	1	6.6	1

Currently, the UFO study area is dominated by just four of the major vegetation zones (Soil Conservation Service 1972). The lowest portions of the Uncompahgre Plateau's eastern flank are within the desert/semidesert zone, an area dominated by greasewood and saltbush. Just upslope and encircling the Uncompahgre Plateau is the woodland/scrubland zone, locally dominated by pinyon and juniper. Higher still, the temperate evergreen forest is found, dominated by ponderosa pine, Gambel oak, Douglas fir, blue spruce, stands of aspen, and fescue grassland parks. The tundra and temperate grassland zones do not occur within the study area, though they may have in the past. The swamp/marsh zone is uncommon and is limited to small areas around springs and ponds.

Distribution maps of vegetation zones during the late Pleistocene and early Holocene do not presently exist. At some point, the top of the Uncompahgre Plateau and adjoining areas of comparable elevation may have been glaciated, which would have rendered much or all of the highest elevations inaccessible to humans. Tundra may have surrounded the glaciers, and much of the lower portions of the plateau may have been forested by evergreens. As more modern climatic regimes evolved after approximately cal 8100 B.C., vegetation zone boundaries shifted upslope, eventually displacing tundra and resulting in modern distributions. Because the distribution of modern vegetation zones probably poorly reflects the distribution of vegetation zones during the Paleoindian era, it is untenable to examine Paleoindian site and isolated find distributions in terms of modern vegetation zones. Site elevation is probably related to terminal Pleistocene and early Holocene vegetation zones, and will be examined below.

Paleoenvironmental models suggest that early and late Paleoindian site distributions may be different because of environmental changes. By approximately 11,000 B.C, the time that humans probably first entered the area, vegetation zones had already begun receding upslope. Glaciers were probably gone and the highest reaches of the Uncompahgre Plateau were probably either covered by tundra or by evergreen forests. The entire plateau, as well as high elevation areas of adjacent mountains, was probably available for human use. If tundra prevailed, then the higher elevations

may have been moderately attractive for human use, as moderate quantities of potentially edible plants and animals were available. If tundra was extensive, then it is also possible that large herd animals were present, which may have been especially appealing to the early Paleoindians, with their subsistence and settlement focus on big game hunting. Moderate or high site densities might be expected if this were the case. If the higher elevations during the early Paleoindian era were covered by extensive evergreen forests, instead, then these areas might have been much less desirable, due relatively low densities of potential foodstuffs and the associated difficulty of hunting dispersed game in forest cover. Relatively low densities of early Paleoindian sites would be expected in the higher elevations in this scenario. It is possible, however, that the lower elevations were covered by the woodland/scrubland zone, which, with higher potential for edible plants and animals, might have been more conducive for human use. The presence of relatively high densities of early Paleoindian sites in the lower elevations might be an indication of this.

The late Paleoindian era, between approximately cal 12,000 and 7600 B.C., was initially affected by the period of glacial resurgence between 9,200 and 8,100 B.C, followed by a warming trend. Evergreen forests may have dominated the higher elevations, with woodland/scrubland on the lower flanks of the Uncompahgre Plateau. If this model is correct, then the higher elevations may have been available but relatively unattractive for human use throughout the late portion of the Paleoindian era. The lower areas, with greater potential for edible plants and animals, might have received more attention, and consequently should evince higher site densities.

The recent UPAP study conducted by Alpine (Reed and Smith Gebauer 2004) included a tentative test of the simple diachronic settlement model described above using available data and concluded that the data support the model, albeit weakly because of the paucity of data from this period. Another test was conducted to determine if the known Paleoindian sites and isolated finds on the Uncompahgre Plateau are randomly distributed with respect to elevation or if their distributions are non-random; i.e., whether they tend to cluster non-randomly within particular elevation zones. It was found a disproportionate quantity of the Paleoindian discoveries occurs between approximately 6,000 and 8,000 ft (1,829-2,438 m) elevation, and that Paleoindian artifacts are scarcer than expected below 6,000 ft (1,829 m) and virtually absent above 8,000 ft (2,438 m) elevation. The authors concluded that the paucity of Paleoindian artifacts below 6,000 ft (1,829 m) may, in part, reflect sample bias related to land ownership and reduced site visibility resultant from extensive agricultural and residential development of the lowland valleys, whereas the lack of Paleoindian evidence above 8,000 ft (2,438 m) either indicates these elevations were not used by Paleoindian groups or that some sort of sampling bias or poor ground visibility is reflected in the results (Reed and Smith Gebauer 2004).

Paleoindian site and isolated find distributions should be different than sites of other archaeological units, because vegetation zones—each with different quantities of available food resources—were differently distributed during that era. Because the climate during the Paleoindian era was cooler and moister conditions than during subsequent eras, and because vegetation zones are somewhat tied to elevation, it seems plausible that Paleoindian artifacts would be found in lower elevation zones than artifacts of later components. This is because the vegetation zones listed in Table 19 that occur in the highest elevations—tundra and temperate evergreen forest—rank relatively low in food productivity. The woodlands/scrublands of the lower elevations (and, possibly, temperate grasslands) are more productive, and would have probably been the primary locus of settlement. The lowest elevation zone may have been desert-like, and so would have been relatively unattractive.

In short, this model supposes that Paleoindian occupation of the Uncompahgre Plateau and surrounding areas was most intensive between 6,000 and 8,000 ft (1,829-2,438 m) elevation because that zone was vegetated with a relatively highly productive ecosystem. Paleoenvironmental sampling is necessary to discern the nature of the vegetation by elevation zone in the study area

during the terminal Pleistocene/early Holocene period, and thereby permit testing of this hypothesis. It follows that later occupations would be dissimilarly distributed by elevation zone, because vegetation zones shifted upslope following the Paleoindian era. To test this, Reed and Smith Gebauer compared the relative frequency of sites on the Uncompahgre Plateau attributed to later archaeological units to known Paleoindian artifacts, in terms of elevation (Reed and Smith Gebauer 2004). They demonstrated that the later groups occupied the 6,000 to 7,000 ft (1,829-2,134 m) elevation zone more intensively, and that Paleoindians more intensively utilized the 7,000 to 8,000 ft (2,134-2,438 m) zone. Their data also revealed that later groups also more intensively occupied elevations above 8,000 ft (2,438 m) than did Paleoindians. They concluded that the data suggest that the elevations above 8,000 ft (2,438 m) were less productive in terms of food resources during the Paleoindian era, but that the environment just below the unproductive belt was favored by Paleoindian groups. In contrast, the lowest elevation zones were comparatively less attractive during all eras.

As shown in Figure 14, sites and isolated finds with diagnostic Paleoindian artifacts are scattered across the UFO study area. As suggested by the elevation data presented above, however, the higher elevations have lower frequencies of Paleoindian artifacts. The paleoenvironmental or cultural reasons why the highest elevations in the study area were not as intensively inhabited as the lower elevations needs to be explored. Certainly, high elevation Paleoindian sites have been documented in other areas, such as the San Luis Valley region (see Jodry 1999).

The Paleoindian models presented above can be tested with additional survey-level data and, most importantly, with excavation data. Other lines of research are also applicable. As indicated by Reed and Metcalf (1999), Kelly and Todd's (1988) settlement model for the early Paleoindian period is testable. This model states that the early Paleoindians practiced a highly mobile foraging lifeway focused on big-game hunting, the likes of which were never repeated. Reed and Metcalf also summarize York (1991) and Schroedl's (1991) late Paleoindian period settlement models, which assert that the higher elevations served as refuge for Pleistocene megafauna, as warming climates squeezed the environmental settings most suitable for the animals upward. In the model, late Paleoindian period peoples followed the megafauna. Data from the UFO study area can contribute to the analysis of these settlement models.

Subsistence

Little is known about the subsistence practices of the Paleoindian inhabitants of the UFO study area. The single excavated Paleoindian site near the study area—the Broken Leg site (5SM2423)—yielded no direct subsistence data. The site's two excavated hearths yielded juniper fuel wood, but no burned seeds and no bone (Firor 2001). Artifacts from the component indirectly provide insight into site subsistence practices. Debitage, spear points, and a scraper were recovered. These artifacts suggest an emphasis on hunting and animal processing. No ground stone artifacts were recovered in the excavations. Even a site focus on hunting at the Broken Leg site does not negate the possibility that plant gathering was important at other sites occupied during the people's seasonal rounds.

Regional data also provide little insight into Paleoindian subsistence practices, again due to the dearth of excavated Paleoindian components. As discussed by Reed and Metcalf (1999), current subsistence models suggest that subsistence foci were different during the early and the late Paleoindian periods. Kelly and Todd (1988) assert that early Paleoindians focused on highly ranked big game animals. Peoples were highly mobile foragers, moving from one game concentration to another. During the late Paleoindian period, a more regionally specialized adaptation may have developed, utilizing more dispersed big game, but also exploiting plants to a larger degree. This more "generalist" approach is a key component of Frison's (1992) and Pitblado's (1993) Foothill Mountain tradition. Direct subsistence data of Paleoindian subsistence is absent in the Great Basin and rare in western Colorado (Reed and Metcalf 1999; Schroedl 1991). An important research goal of

future excavations of Paleoindian components should be to extract direct evidence of subsistence, in the form of burned seeds, pollen, and animal bones, and to compare and contrast those data between collections from various archaeological units.

In short, obtaining direct subsistence data is an important research goal for the Paleoindian era. Such data are important for establishing whether the Foothill-Mountain tradition actually represents a more generalized hunting and gathering subsistence strategy than late Paleoindian complexes of the Plains, and whether some late Paleoindian groups in the region practiced a more generalized subsistence strategy than others.

Technology

Aside from projectile points, almost nothing is known about the technology of the Paleoindian inhabitants of the study area. Paleoindian architecture is rare, but Western State College has recently identified and excavated a Folsom-period habitation structure at the Mountaineer site near Gunnison (Stiger 2006). With only a single excavated Paleoindian component near the UFO study area, our understanding of the variability in Paleoindian artifacts is very limited. Because two spatially overlapping components were present at the Broken Leg site, researchers could only confidently attribute diagnostic projectile points and scrapers to the Paleoindian component (Firor 2001). Five Paleoindian projectile points were found at the component; all were lanceolate with moderately to deeply concave bases. Lateral edges of the bases were straight and ground. Some of the points evinced parallel-oblique flaking patterns. Firor (2001) compares the points to the Jimmy Allen or Frederick types, and attributes them to the Foothill-Mountain tradition. A spurred scraper and a retouched flake from the site were also attributed to the site's Paleoindian component. Pitblado (2003) currently attributes Jimmy Allen/Frederick points to a Plains' oriented group that may have seasonally occupied the Southern Rocky Mountains. She notes small quantities of Jimmy Allen/Frederick points on the Colorado Plateau and in the Great Basin mountains.

Other Paleoindian artifacts found in the study area consist of surface finds of projectile points. The early Paleoindian projectile points, such as Clovis, Goshen, and Folsom, evidence remarkable consistency in style over broad portions of the United States (Kelly and Todd 1988; Schroedl 1991). The relative homogeneity of point styles provides the basis for Kelly and Todd's (1988) assertion that the early Paleoindian period represented a highly mobile big-game hunting lifeway that was continental in scope. With more inventory work in the UFO study area, greater numbers of early Paleoindian projectile points will probably be found and it is likely that they will be similar to the conventional types defined elsewhere in the West. Other common early Paleoindian artifact classes, such as end scrapers, spurred scrapers, beaked gravers, burins, and bifaces, also probably occur in the study area and likely conform to the styles observed outside the region (see Kelly and Todd 1988).

Pitblado (2003) has developed a model of late Paleoindian technology based on Bleed's (1986) concept of *reliable* and *maintainable* tool technologies. Reliable technologies produce artifacts that are overdesigned, highly standardized, and that exhibit excellent craftsmanship. Such tools tend to be manufactured by specialists in advance of subsistence forays that focus on a restricted set of resource objectives. According to the model, projectile points produced in a reliable system tend to be discarded when damaged, rather than reworked into other tools or into smaller points. The payoff resultant from the high investment in production labor comes with excellent tool performance during procurement of the desired resource. Maintainable technology exhibits less investment of production labor. Such tools tend to be light, portable, and more easily produced and maintained. Maintainable technology is usually associated with more generalized subsistence strategies, in which a broader range of food resources are anticipated, in a wider setting and over a longer period of time.

Pitblado (2003) examined late Paleoindian projectile point attributes and concludes that some types—such as Eden/Firstview—represent reliable technologies, whereas others—such as Great Basin Stemmed—represent maintainable technologies. It seems plausible that there was a continuum of reliable and maintainable technologies during the Paleoindian era. At one end of the continuum were the early Paleoindian projectile point types, such as Clovis and Folsom. These projectile points were highly standardized and well-crafted, and were well suited for an adaptive strategy focused intensively on big-game hunting. They likely represent components of a reliable system. Reliable technologies, based on Pitblado's data, seem to have persisted into the late Paleoindian period, as represented by types such as Eden/Firstview. Maintainable technologies may have appeared during the late Paleoindian period, with the appearance of more crude projectile point types like Great Basin Stemmed. This line of research, however, could benefit from further analysis.

The reliable-maintainable model discussed above probably does not apply to other artifact classes. For example, failure of a projectile point during a bison hunt probably had more ramifications than failure of a scraper used to process an animal procured by the hunt. It may be more tenable to assume that the two technological strategies applied primarily to the implements used directly in the procurement of fauna. The differences in projectile point technologies observed by Pitblado (2003) probably better reflect overall subsistence reliance on specialized big-game hunts, where specific types of animals were hunted. If so, the nonperishable material culture from late Paleoindian sites that are not directly related to hunting should be similar between sites with projectile points of differing point types and hunting strategies.

To summarize, regional data are sorely needed to address the technology of the Paleoindian era. Important research will include comparing and contrasting Paleoindian assemblages to those excavated in other regions and determination of whether point types attributed to reliable or maintainable systems reflect meaningful differences in subsistence practices or logistical organization. Following the suggestions of Reed and Metcalf (1999), technological research should also examine the relationship of Paleoindian lithic technology and group mobility.

Social Organization

Data pertaining to Paleoindian social organization are limited and primarily derived from site seasonality and occupation information coupled with artifact frequencies. A model developed by Kelly and Todd (1988) depicts the early Paleoindians as highly mobile, with very little sense of "place." Game animals were killed advantageously and as they were encountered, and procured food was not stored long-term. The territories of Paleoindians were very large and favored campsites were reused repeatedly (Kelly and Todd 1988:239). The transport of high-quality lithic raw materials over long distances also shows that early Paleoindian populations were highly mobile and made use of large territories (Reed and Metcalf 1999:62). In a sense, however, the very idea of repeatedly used campsites and the complex logistics of transporting materials over great distances from one location to another would seem to necessitate a finely developed sense of place. It may be more accurate to say that Paleoindian groups did not have the same "intimacy of place" as later groups, but rather an "intimacy with new frontiers" (Simms 2008:133).

Beginning in the Folsom period, there is some evidence that groups of Paleoindians became somewhat more sedentary and began to use the cooperative hunting techniques necessary to exploit bison (Cassells 1997:77-78; Gilmore et al. 1999:64). By the Plano period, relatively complex organizational skills are inferred from large communal kills of bison. This hunting technique would have required planning and the coordinated efforts of large groups for driving, dispatching, and processing the game. Plano people retained a high degree of relative mobility, however (Cassells 1997:91), and social organization among all Paleoindian groups was likely fluid rather than corporate (Simms 2008:48, 135). In general, Late Paleoindian social organization probably involved small family groups that followed an annual pattern of movement through very large territories.

Favored sites were probably reoccupied year after year, with populations aggregating when and where resources were abundant (Kelly and Todd 1988:239-241).

Paleoenvironment

As alluded to in the section above titled Settlement Patterns, paleoenvironmental reconstructions are more important for Paleoindian research than for all subsequent archaeological units. This is because the environment at the end of the Pleistocene and during the early Holocene was more different than today's environment than during any subsequent period. Because climatic conditions were generally cooler and moister during the Paleoindian era, vegetation zones were lower in elevation. Although these trends can be deduced from paleoenvironmental data from other regions, little is actually known about the distribution of vegetation zones during various periods within the Paleoindian era. Paleoenvironmental research is needed to improve the quality of interpretations of Paleoindian settlement and subsistence practices.

Transitions

Transitions between the named temporal periods and complexes of the Paleoindian era can be characterized in a variety of ways, including lithic tool technology, climate and environment, subsistence choices, and demographic trends. The beginning of the Paleoindian era marks a major global demographic and technological transition, as New World hunters independently developed elegant and efficient spear technology for the exploitation of migratory game animals. This innovation marked the beginning of the Clovis culture, which co-occurred with deglaciation and an increase in average temperatures. The environment was generally harsher—cooler and wetter—than that of today (Cassells 1997:91; Reed and Metcalf 1999:56). The end of the Clovis period correlates with the disappearance of the mammoth and broad warming and drying trends. These drying conditions affected human and animal populations on the Plains and may have caused humans to seek higher elevations (Gilmore et al. 1999:87).

During the Folsom period, humans made a series of complex cultural adaptations to the changing environmental conditions of the Pleistocene/Holocene boundary. The climate continued to dry and warm as glaciers retreated and seasonal variation increased. Hunting efforts shifted to bison, and the subsistence base became more varied (Gilmore et al. 1999:31-33; Reed and Metcalf 1999:56).

The Plano period hosted more aggregated human populations with increasingly complex social interactions and sophisticated subsistence techniques. The climate continued to dry and warm. Smaller game animals and plant food resources became more important in the diet, an economic shift toward the broad subsistence base seen later in the Archaic era. Two of the earlier complexes of the Plano period—Agate Basin and Hell Gap—can be easily recognized as a major technological shift away from fluted points toward constricted-base points (Cassells 1997:91; Pitblado 2003; Reed and Metcalf 1999:58,69).

Data Gaps and Needs

Major data gaps and needs for the Paleoindian Era within the UFO study area are identified below. A later section of this document builds on the identified data gaps by defining specific research questions arising from them.

The Known Site Pool

- Sites or components with Paleoindian artifacts comprise only 1.4 percent of the sites in the UFO study area, with no Paleoindian sites excavated on BLM lands within the UFO. Paleoindian sites or components, then, comprise a major data gap. Early Paleoindian sites are especially rare.

Chronology

- The primary data gap with respect to chronology is simply the lack of chronometric dates from Paleoindian components in the UFO study area. The lack of dates hinders understanding of the Paleoindian period in the study area in numerous ways, such as basic time-space issues, dating of projectile point types, and the timing of the transition between Paleoindian and Archaic lifeways.

Archaeological Units

- The refinement and deeper understanding of issues surrounding the definition of archaeological units for the Paleoindian era can be achieved primarily with additional survey-level and excavated data from Paleoindian components, pertaining to spatial distributions (settlement patterns), lithic technology, subsistence, and chronology.

Settlement Patterns

- Understanding Paleoindian settlement patterns is contingent upon understanding local paleoenvironments. Because little paleoenvironmental data are available for the area for the era in question, additional research is sorely needed.

Technology

- Progress in the study of Paleoindian technologies in the UFO study area will only come with the investigation of intact, well-dated components yielding projectile points and other lithic artifacts, thermal features, and/or evidence for architecture that can be carefully studied from a technological perspective.

Subsistence

- Direct subsistence data from excavated, well-dated, Paleoindian components are essentially nonexistent in the UFO study area. Faunal and macrofloral remains, pollen, starch residues, protein (blood) residues, and other types of direct subsistence data from Paleoindian sites are sorely needed.

Archaic Era

Introduction

According to Reed and Metcalf (1999), the Archaic era dates between cal 7300 B.C. and 400 B.C. Reed has since revised his thinking on this chronology, however, and now prefers 200 B.C. as the ending date for the Archaic era (Alan Reed, personal communication to Rand Greubel, 2010). The transition from the Paleoindian era and the Archaic era is marked by a transition to a more mobile, broad-based, hunter-gatherer lifeway. The Archaic era includes a foraging strategy based on winter habitation areas, an increase in plant processing, and the use of stemmed and notched projectile point types. The end of the era is characterized by experiments with new subsistence patterns including corn horticulture and a shift toward seed processing. (Reed and Metcalf 1999).

A paleoenvironmental model from the Indian Creek site, just outside the UFO study area, suggests that the climate fluctuated between warm/dry and cool/moist conditions during the Archaic era (Horn et al. 1987). Between cal 5900 and 4300 B.C., the region experienced warm and dry conditions. The following 1,000 years was much cooler followed by a series of shorter warming and cooling trends through the end of the era. Radiocarbon data for the Northern Colorado Basin indicates that higher elevations had greater occupation during the period of maximum temperatures (Reed and Metcalf 1999).

The Database

There are 527 identified Archaic sites in the UFO study area, representing 14.8 percent of the 3,839 sites in the area (Table 10). The vast majority (92 percent) of the Archaic components are open artifact scatters; other site types are present in low numbers, as indicated in Table 20. The large number of open artifact scatters is consistent with the highly mobile lifeway practiced during this period. The presence of seven Archaic wickiup sites in the table is misleading; these sites also had Protohistoric or historic Ute components and the Archaic components likely consisted only of diagnostic projectile points. The distributions of Archaic sites (i.e., sites with evidence of Archaic components) across the UFO study area are shown in Figure 15, Figure 24, Figure 33, and Figure 45.

Table 20. Archaic Site Types in the UFO Study Area.

Site Type	Frequency	Percent
Open artifact	485	92.0
Sheltered artifact	15	2.8
Open architectural	11	2.1
Sheltered architectural	0	0
Rock art	11	2.1
Wickiup	7	1.3
Lithic procurement	4	0.8
Burial	0	0
Totals	**533***	**101.1**

* The sum is greater than 527 because some sites comprise multiple types.

Compared to Paleoindian sites, radiocarbon-dated Archaic components are relatively well represented in the UFO study area (see Table 17 and Figure 49), though not as well represented as Formative sites. As shown in Table 3, Archaic components have been identified through excavation at 19 sites within the UFO study area. Archaic components have also been found at an additional four sites that have undergone limited excavation (Table 4).

Chronology

For years, the Archaic of the Rocky Mountain region was referred to in terms of the Plains and Great Basin Archaic. None of these were very useful for the high elevations of western Colorado. Based on local data from within and around the Uncompahgre study area, Reed and Metcalf (1999) established four periods for the Archaic. These periods are based on the distribution of traits such as projectile point styles, cooking and storage pit morphology, habitation structure types, and ground stone technology. As mentioned earlier, the Pioneer period (cal 7300-5400 B.C.) is a transitional period from the Paleoindian lifeway to the Archaic patterns. The Settled period (cal 5400-3200 B.C.) is distinguished by an increase in processing features and a foraging strategy based on winter habitation areas. The Transitional period (cal 3200-1200 B.C.) includes more variability in material culture and more seasonal use of the high elevations. The Terminal period (cal 1200-400 B.C.) is a transitional period between the Archaic lifeway and the Formative era. It is characterized by experiments with new subsistence patterns (Reed and Metcalf 1999).

Archaic chronology would benefit from more chronometrically dated sites throughout the Archaic era to further examine the four periods suggested by Reed and Metcalf (1999). Particular attention to sites that date within the Settled period would help to fill in the gaps for the time period.

Settlement Patterns

Settlement pattern models for the Archaic era include generalized hunter-gatherer discussions (Bettinger 1991; Binford 1981), locational models specific to the landscape and vegetation patterns of specific sites (such as Burgess et al. 1980b; Hurlbett 1977), and models that focus on subsistence activities within or adjacent to the study area (Metcalf and Black 1991; O'Neil 1993; Stiger 2001). Some generalized models of Archaic patterns in the Rocky Mountains include the Mountain tradition (Black 1991), which is described as an adaptation to upland terrain and includes ethnicity as a key component, and Stiger's approach for the Gunnison Basin, which uses excavated sites to model settlement. Stiger uses site structure, feature morphology, artifact distribution, floral, and faunal remains to observe changes in settlement patterns (Stiger 2001).

The general Archaic model for the study area is based on seasonal mobility. The extreme elevational relief in the Rocky Mountains horizontally compresses the vegetation communities leading to an up-down model of seasonality (Benedict 1992). The Uncompahgre Plateau has similarly compressed vegetation communities, making this model applicable to the study area. Grady (1980) and O'Neil (1993) have both used an up-down model for the western plateau area of Colorado and the Grand Junction Resource area, respectively. Seasonal changes of floral and faunal resources at different elevations direct seasonal mobility. In the spring, snowmelt and warming temperatures in the lower elevations provide greening foliage, which progresses to higher elevations later in the season. During the heat of the summer months, the higher elevations provide sustenance and relief both for humans and the animal resources they rely on. These elevations are cooler and wetter, which is conducive to abundant plant growth. Winters were spent between the high and low elevations in the pinyon-juniper zone, which provided access to fuel, shelter, and wild game (Reed et al. 2001).

In the UPAP study, Reed and Smith Gebauer (2004) examined the distributions of Archaic sites by elevation zone, comparing the percentage of sites in each elevation zone with the percentage of the study area that falls within each zone. They concluded that the elevation zones of 6,000-7,000 ft (1,829-2,134 m) and 7,000-8,000 ft (2,134-2,438 m) were heavily occupied during the Archaic era. These elevation zones made up the greatest percentages of the UPAP study area as a whole, but the numbers of sites within their boundaries exceeded that which would be expected. The relative paucity of Archaic sites in the lowest elevations were thought to reflect the prevalence of privately owned lands in the major valleys, where fewer inventories have occurred, and reduced site visibility resultant from agricultural and other developments (Reed and Smith Gebauer 2004). Slightly lower than expected frequencies of Archaic sites in the higher elevation zones was indicated by the UPAP data (Reed and Smith Gebauer 2004:Figure 8). The issue of Archaic use of higher elevations in western Colorado was considered in the synthetic report for the TransColorado pipeline project (Reed et al. 2001). Data from the region seemed to suggest that in some areas of western Colorado, such as the Gunnison Basin, Archaic peoples made extensive use of higher elevations, whereas in other areas (e.g., the Uncompahgre Plateau) higher elevations were not heavily exploited of occupied (Reed et al. 2001). Clearly, however, more data are needed before this pattern can be substantiated (Reed and Smith Gebauer 2004).

A key component to modeling settlement patterns is discerning the length of time that sites were occupied. A considerable amount of site variability can be explained by length of site occupation. Kent (1992) developed a useful approach for comparing relative group mobility. Kent's model, based in ethnographic research, assumes that much of site variability is related to the length of time that a group plans to spend at a site. She found that groups anticipating a lengthy stay at a site will invest more labor in the construction of habitation structures, will bring more diverse artifacts and resources to a site, and be more likely to delineate discrete and dedicated activity areas than if occupying a site planned for short-term use. In Kent's study, insight into length of *actual* occupation was primarily based on site size, the relative abundance of ceramic artifacts, and the ratio of chipped stone tools to the total chipped stone artifact assemblage.

Because the middle range theory on which Kent's (1992) model is based is not specific to relatively sedentary horticulturists, Reed (2001) has adapted it to include nonstructural sites. For the TransColorado Pipeline (Reed et al. 2001), UPAP (Reed and Smith Gebauer 2004), and other regional projects (e.g., Reed and Metcalf 2009), he defined a number of key variables that were used to gain insight into anticipated and actual length of site occupation (see Reed and Smith Gebauer 2004:59-62). Based on the variables, sites can be classified into one of four possible mobility groups; the four basic scenarios and the expectations for the attributes listed above are described in Reed and Smith Gebauer (2004:Figure 24). The model assumes that, by examining a set of variables for each investigated site and assigning it a mobility category, insight can be gained into how residential mobility changed through time and across space. Some groups may have occupied sites in highly productive environments for long periods, whereas other groups may have moved more frequently.

In the UPAP study, Reed and Smith Gebauer (2004) evaluated excavated components within their study area against Kent's mobility variables. The majority of sites were designated as short-term anticipated and short-term actual occupation. Reed and Smith Gebauer (2004) concluded that, with one exception, the sites in the excavated database for the UPAP study area were short-term camps, indicating a very mobile pattern for the Archaic.

Subsistence

The TransColorado pipeline project resulted in a sufficiently large body of direct subsistence data to allow the development of a subsistence model specifically for the Archaic era of western Colorado. In brief, the model states that local Archaic groups most heavily relied on a relatively narrow range of plant and animal resources, at least compared to the Formative adaptations that followed (Reed et al. 2001). Whether the suite of the primary plant and animal resources was more narrowly focused than that of the Paleoindian era could not be determined, because too few data were available from local Paleoindian components.

The TransColorado data indicated hunting focused heavily on deer. Deer bones comprised 66 percent of the identifiable animal bone from the set of Archaic components, which is three times higher than that of Formative-era hunter/gatherer groups and 19 percent higher than that of Ute components (Reed et al. 2001). Other large artiodactyls, such as elk, bighorn, pronghorn, and bison, comprised 5 percent or less of all faunal samples, so were infrequently taken by all groups. Small animals were also exploited, though problems in differentiating rodent bones resultant from food use from those resultant from natural processes confound interpretations. In general, frequencies of rodent bones were similar between Archaic, Formative, and Ute assemblages (Reed et al. 2001). Rabbit and hare (leporid) bones, however, appear to vary in relative frequencies in meaningful ways. Leporid bones comprised 10 percent of the identified bone from Archaic contexts, 48 percent of the identified bone in Formative-era hunting and gathering group contexts, and 30 percent of the bone from Ute contexts. This suggests that small animals were less intensively exploited by Archaic hunters, who focused instead on higher-ranked animals, such as deer.

TransColorado data also indicated that Archaic groups processed large mammal bone to extract fats and other nutrients, though apparently not intensively. This interpretation was based on the percentage of unidentifiable large mammal bone fragments in the Archaic faunal samples. Bone processing involves crushing bones for subsequent boiling; the bone reduction renders much of it unidentifiable, except as large mammal. The percentages of unidentifiable large mammal bone from Archaic contexts were substantially lower than those of local Formative-era hunters and gatherers, and much lower than those of Ute components (Reed et al. 2001).

The floral data from local Archaic sites suggest reliance on goosefoot/pigweed (Cheno-Ams) plants, which is similar to the data from other archaeological units investigated during the project. The data were not adequate for determining whether Archaic groups relied most heavily on the highest-ranking plant species, but they do suggest that Archaic peoples exploited a relatively narrow

range of plant food species. Archaic macrobotanical samples yielded only eight possible plant species, compared to 20 from samples representing local Formative hunter/gatherers, and six species from Ute components (Reed et al. 2001). These data suggest that Archaic gathering strategies were substantially different from those of the Formative-era groups.

The comparatively low intensity of reliance on gathered plant foods during the Archaic is also reflected by frequencies of ground stone artifacts. Although ground stone can be used for other purposes than grinding plant foods, it is reasonable to assume a rough correlation between ground stone frequencies and the relative importance of plant processing. Indices reflecting ground stone frequencies were derived from TransColorado project assemblages by dividing the number of manos or mano fragments by the number of flaked stone tools. The larger the resulting value, the higher the ratio of manos to flaked stone tools. When segregated by major archaeological unit, the indices indicated lowest values for the Ute assemblages, moderate values for the Archaic assemblages, and high values for the Formative assemblages (Reed et al. 2001).

In summary, local Archaic subsistence practices were based on hunting and gathering. Archaic hunters were able to focus on relatively highly ranked food resources, such as deer, though smaller animals, such as rabbits and hares, also comprised a substantial proportion of their diets. Peoples representing subsequent archaeological units were less able to focus on deer and incorporated more leporids into their diets. All groups processed animal bone, but such was comparatively less important to Archaic peoples. Gathered plant foods were also important to local Archaic groups, who evidently ate such foods as juniper fruits, pinyon nuts, mint, tansy mustard, cactus, cattail, and grass seeds (Reed et al. 2001). The diversity of plant species collected for food, however, was roughly comparable to that of the Ute, and substantially lower than that characterizing the Formative era. Ground stone frequencies suggest that Archaic groups required fewer grinding implements than the peoples that immediately followed them.

The Archaic subsistence model derived from the TransColorado project data cannot be effectively evaluated in terms of direct subsistence data from the UFO study area because of the scarcity of data. Aside from the TransColorado sites in the study area, many of the sites were excavated in the 1960s, when macrobotanical and palynological sampling were not routinely done. Animal bone was collected on the Ute Prehistory Project, but was lost prior to analysis (Buckles 1971). Excavated sites in the project area have yielded charred goosefoot, juniper seeds, and prickly pear, as well as Cheno-Am pollen. Discussions of fauna may refer to large artiodactyls. The dearth of direct subsistence data from the study area points to an important line of future research. Additional data are needed to test the model presented above, and to generate new, more refined models. It is likely, for example, that subsistence practices changed through time within the six millennia comprising the Archaic era. Discernment of such fine-grained trends is currently not possible.

Technology

Architecture

Regional evidence suggests that Archaic peoples occupied basin houses, such as those excavated at the Indian Creek site just east of the project area (Horn et al. 1987). Basin houses are characterized by the following attributes (Reed et al. 2001:41-69):

- Irregular perimeters
- An oval or elliptical shape
- A shallowly basin-shaped floor
- Low and often sloping walls
- Undulating floors
- Internal pit features, often around the periphery
- Nearby extramural features

More formalized pit structures have also been found along the Colorado River north of Eagle, Colorado. This site—Yarmony House—yielded an early Archaic habitation architecture with deep rock-lined pit features in the floor (Metcalf and Black 1991). Such formalized structures in Archaic contexts seem to be rare, however; it is more likely that Archaic architecture in the UFO study area consists of basin houses or the remains of ephemeral brush structures.

Thermal Features

Stiger (2001) has defined a set of thermal feature types for the Upper Gunnison Basin that may be applicable to the study area. The types in depth and diameter as well as the stone associated with them; they are as follows:

Big-Deep Fire-Cracked Rock (FCR) Features: these are deep enough to hold several rocks stacked within them and were probably used for roasting in quantity.

Small-Shallow Fire-Cracked Rock Features: these usually contain a single layer of rock; they tend to be smaller in diameter than the deep features.

FCR-Outside Features: small firepits with the fire-cracked rock emptied just outside the feature. These are fairly restricted in distribution and were probably associated with special resource processing.

Rock-Lined Firepits: these are firepits lined with rocks. Stiger notes a possible trend of smaller rocks used earlier and larger slabs used later in time. These are associated with intensive occupations.

Unlined Firepits: these are simple pits that have ash or charcoal in them. This type was found in all time periods in the Upper Gunnison Basin.

Boiling Pits: a feature that appears to have been used for boiling stones. These are commonly found in pairs.

Many of the excavated Archaic components within or near the UFO study area yielded thermal features that exhibited a substantial degree of labor. Slab-lined thermal features were common at all of the earlier sites regardless of whether they were short- or long-term occupations. One Terminal period occupation, at the Shavano Springs site, had only unlined fire features. This is consistent with Stiger's date ranges for rock-lined fire pits, which fall between approximately cal 6380 and 1130 B.C.

Flaked Lithics

Archaic hunters used the atlatl and dart. Projectile (dart) points used during the Archaic in the study area that are temporally diagnostic to one degree or another include Elko series, Pinto series, Gatecliff Contracting-stem (Gypsum), Gatecliff Split Stem, Mallory (San Rafael Side-notched), San Rafael Stemmed, and Northern Side-notched. Types more common in adjoining regions occasionally turn up in the study area, such as Humboldt Concave Based, Sudden Side-notched, Rocker Side-notched, McKean Lanceolate, and Oshara tradition points (e.g., Jay, Bajada, San Jose, Armijo, and En Medio) (Holmer 1978, 1986; Irwin-Williams 1973). The reader is referred to Holmer (1986) and Justice (2002a; 2002b) for discussions of the temporal ranges of these types. Reed and Metcalf (1999:83-86) present a good discussion of Archaic projectile points in the Northern Colorado River Basin. Regional excavation literature (e.g., Reed et al. 2001) also frequently contains primary data relevant to the ages of these point types.

Lithic reduction strategies during the Archaic are more closely tied to mobility patterns and local availability of toolstone than they are to cultural or archaeological groups (Andrefsky 1994; Kelly 1988; Nelson 1994; Parry and Kelly 1987; Torres 2000). Current models suggest that highly mobile groups needed reliable, versatile, and easily transportable stone artifacts, and so were more likely to manufacture and use bifaces than more sedentary groups (e.g., Parry and Kelly 1987). Bifaces are suitable for various cutting or scraping tasks, and are also suitable for use as cores to produce flakes for other uses. Relatively sedentary groups are more likely to employ a lithic reduction strategy based on core reduction. Cores were reduced to produce flakes suitable for various uses, with much less investment of labor. The core reduction strategy requires greater quantities of lithic material, and so is associated with higher transportation costs, but this mattered little if suitable materials were relatively close to the settlements (Andrefsky 1994). The two technological trajectories can be differentiated through analysis of various types of flake attributes (Ahler 1986; Flenniken 1981, 1984; Pecora 1990; Yerkes and Kardulias 1993:94-97).

The lithic data from the TransColorado pipeline project confirmed the general patterns summarized above (Reed et al. 2001). The TransColorado analysis indicated that the least mobile groups in the region—the Anasazi—had debitage collections indicative of core reduction strategies, whereas the more mobile hunter/gatherer groups were more likely to have emphasized biface reduction. The differences between Archaic, Formative hunter/gatherer, and Ute collections were not as patterned as anticipated, however, and lithic reduction patterns were not found to be diagnostic of archaeological unit. This is likely because both mobility and access to toolstone varied between individuals and groups through time. Nearly all groups—including Archaic—practiced both biface manufacture and core reduction in varying degrees.

Additional research is needed to better characterize the lithic reduction strategies of Archaic peoples in the UFO study area. The quality of interpretations will also increase as more variables are considered. Such research might include determining lithic reduction strategies for key material types found at a site and assessment of the distance between a site and the lithic sources represented at a site. Minimum nodule analysis (Larson and Kornfeld 1997) may be a useful way to approach this problem.

Ground Stone

Based on the excavated sites of the TransColorado project (Reed et al. 2001), slab metates were by far the most prevalent style of metate during the Archaic. Basin metates were also present, but in far fewer quantities. The wide variety of foods that can be processed on a slab metate makes it the best choice if only a few metates are needed at a site. The basin metates are limited in what can be processed on them, as they are restricted to a smaller working area and one possible grinding stroke. Experimental studies (Adams 1993) indicate that dried seeds are more easily ground with the basin metate, as they are prone to falling off a flat metate. At the same time, the circular basin metate grinding is more tiring than the reciprocal grinding of a flat metate and mano. The flat metate and mano grind greater amounts of food with more speed and efficiency.

Both slab and basin metates are present in the Settled period component at the Coalbank Canyon site (Kalasz et al. 2001b). Slab and basin metates represent different processing strategies for food resources. Each requires a different stroke of the mano; the slab metate and mano generally utilize a reciprocal stroke while the basin metate requires a circular stroke (Adams 2002). As suggested above, the presence of both of these tool types indicates a variety of grinding strategies and suggests a greater importance on food processing.

More detailed analysis of ground stone would further our understanding of subsistence in the Archaic era. Microscopic use-wear analysis of manos and metates may reveal greater insight into what was actually being processed at these camps. This would be especially helpful in cases where the macrobotanical evidence is lacking.

Paleoenvironment

Abrupt shifts in the paleoclimate of the study area may have driven changes that occurred during the Archaic era. These warming and cooling episodes may be strongly tied to the occupation and subsistence shifts from the Paleoindian to the Archaic and again between the Archaic and Formative eras (Reed and Metcalf 1999). Much more fine-grained paleoenvironmental data are needed to establish the nature of climatic change prior to and during the Archaic. This, combined with fuller data on Archaic site distributions in the study area, will eventually expand our understanding of settlement patterns during the Archaic.

Transitions

Two major cultural transitions are hypothesized for the Archaic era. The first is the transition from Paleoindian- to Archaic-stage lifeways. Current models hold that this transition occurred in response to major climatic shifts, from terminal Pleistocene conditions to those more similar to modern conditions. The Archaic era is perceived as a response to warmer and drier climates, with vegetation zones shifting to more modern distributions.

There were certainly major differences in lifeways between early Paleoindian hunters and the hunter-gatherers of the early Archaic era. Recent research, however, has suggests that differences between late-period Paleoindians and early Archaic groups may not have been as great as formerly believed. In the Great Basin, some researchers believe that the term "Paleoarchaic" is a better descriptor of this transitional period, encompassing the concept of an early transition to an Archaic lifeway during a time when a big game-based Paleoindian lifeway continued unabated in other regions (Jones et al. 2003:6; Simms 2008). The Foothills-Mountain tradition, a late Paleoindian unit now commonly applied in the mountainous areas of Wyoming and Colorado, also describes a relatively broad-spectrum subsistence strategy, reflecting a subsistence focus on the more solitary game animals of the mountains, rather than on the large bison herds of the Great Plains (Pitblado 2003). Like Archaic peoples, Foothills-Mountain groups were less mobile than the Paleoindians of the Plains or their cultural predecessors. Discerning the differences in lifeways between the Foothills-Mountain groups and the Pioneer period Archaic groups is an important line of future research.

The second major transition is marked by the change from the Archaic to the Formative era. This transition is most evident in areas where horticulture was possible and where a mobile hunting and gathering lifeway changed to a relatively sedentary, horticulture-based lifeway. In some parts of the UFO such as the West End LU, this transition is signaled by the appearance of maize and other indications of a horticultural lifeway over 2,000 years ago. But in most parts of the UFO study area, the transition was more subtle, and even in the West End horticulture seems a tentative experiment or at least restricted to a few small groups during this transitional period. In other words, mobile hunting and gathering remained the dominant lifeway across the Archaic/Formative threshold in most areas of the UFO.

Minor cultural transitions may also have occurred between the Pioneer, Settled, Transitional, and Terminal periods (see Reed and Metcalf 1999). Additional archaeological work is needed to evaluate whether cultural change manifested in the archaeological record actually corresponds to the termini of the various phases.

Data Gaps and Needs

Major data gaps and needs for the Archaic era within the UFO study area are identified below. A later section of this document builds on the identified data gaps by defining specific research questions arising from them.

The Known Site Pool

- Sites or components with evidence of Archaic occupations comprise 14.8 percent of the sites in the study area, with several sites containing Archaic components excavated on BLM lands within the UFO. Thus, although considerably more Archaic sites have been identified in the UFO study area than Paleoindian sites, the archaeological database for this 6,000-year-long era is too small to permit development of sophisticated lifeway models. Additional excavation data are needed for all periods within the Archaic era.

Chronology

- Additional chronometric dates are needed from all periods of the Archaic to better discern diachronic demographic trends, but especially for the Settled period.

Archaeological Units

- The utility of the newly defined periods for the Archaic era (Pioneer, Settled, Transitional, and Terminal) should continue to be evaluated. They were developed primarily from radiocarbon data from excavated sites in northwestern Colorado and Reed believes that they may not accurately characterize the Archaic era of west-central Colorado (Alan Reed, personal communication to Rand Greubel, 2010).

Settlement Patterns

- The "up-down" settlement model requires verification and refinement with archaeological data. The Archaic era is characterized by seasonal mobility; to fully understand the settlement patterns on the Uncompahgre Plateau it is necessary to locate and record information about all site types within the seasonal round.

- Data necessary for discerning shifts in patterns of residential mobility are needed. Inventory-level data can contribute to this research issue to a certain extent, but a greater quantity of excavated Archaic components will be necessary to more fully delineate these patterns.

- Most of the excavated and dated sites in the UFO fall roughly between 5,000 and 7,000 ft (1,524-2,134 m) in elevation. According to Reed and Smith Gebauer (2004), survey data on the Uncompahgre Plateau includes a considerable number of Archaic sites that are above 7,000 ft (2,134 m), but few have been excavated or chronometrically dated. Data from sites located at higher elevations of the UFO and adjoining areas are critical for understanding Archaic use of highland settings.

Technology

- More data are needed on Archaic architecture and pit features in the study area.

- More data (i.e., well-dated debitage and lithic tool assemblages) on Archaic lithic reduction strategies are needed.

- A better understanding of the locations and nature of lithic raw material sources within the study area and in adjoining regions is needed. Efforts to locate, characterize, or otherwise compile information about lithic sources in the region are being undertaken by James Miller of DARG and by Neil Hauser, who are presently conducting projects independently of one another. Data on regional lithic sources will be valuable not only for Archaic sites, but for prehistoric sites of all time periods in the study area.

Subsistence

- Because of the dearth of excavated Archaic sites in the region and because biological materials at older sites are less often preserved, our understanding of Archaic subsistence practices is incomplete. Data relevant to subsistence changes during the 6,000-year span of the Archaic can only be obtained through additional data recovery efforts. Such data will consist primarily of faunal and macrofloral remains, but may also include pollen, starch residues, lipids, blood residues, and other residues that might be identified through Fourier Transform Infrared Spectroscopy (FTIR) analyses, which can identify the absorbance signature of organic compounds that can then be compared to the spectra from known organic materials (e.g., food remains).

Paleoenvironment

- No detailed and comprehensive paleoenvironmental model, derived solely from local data, has ever been developed, though recent—but, as yet, unpublished—work by Steven Emslie and his colleagues is an important step in that direction. Paleoenvironmental studies are needed for all archaeological units.

Formative Era

Introduction

The Formative era, as defined by Reed and Metcalf (1999), refers to the period in western Colorado when corn was cultivated by prehistoric peoples. Based on radiocarbon dating of corn macrofossils and ceramic cross-dating of cultural deposits yielding corn, the Formative era extended from as early as 400 B.C. to A.D. 1300. Use of the term "era" instead of "stage" for the period encompassed by the Formative avoids problems in determining the relative importance of corn in overall subsistence systems and permits discussion of both farmers and contemporaneous full-time foragers.

Formative adaptations are best understood in southwestern Colorado, where the Anasazi (Ancestral Pueblo) are represented (see Lipe et al. 1999). The Anasazi fully integrated horticulture into their culture, and so were characterized by low residential mobility, substantial residential and storage architecture, and finely crafted ceramics. The Fremont represented another Formative adaptation, mostly restricted to northwestern Colorado, Utah, and the eastern edge of Nevada. The Fremont also constructed substantial residential and storage structures, manufactured high-quality ceramics, and raised corn, beans, and squash. Sites attributed to the Fremont, however, are highly variable, ranging from large residential villages along the Wasatch Front to short-term campsites with small quantities of Fremont ceramics. The prevalence of short-term occupations suggests that foraging remained an important subsistence activity in the Fremont homeland, possibly indicating the co-occurrence of farming and foraging groups or switching in subsistence and settlement behaviors as climates fluctuated (Madsen and Simms 1998).

Based on current evidence, the Fremont likely did not occupy the UFO study area, except possibly at some sites near the Utah state line such as Roc Creek and in the Paradox Valley (Reed and Metcalf 1999). For alternative views regarding more widespread possible Fremont occupation of the West End portion of the study area, see McMahon (2000; 2004; 2007) and Toll (1977). Fremont ceramics are very rare, as are elaborate clay figurines, leather moccasins, and other diagnostic Fremont artifacts. Residential structures in the UFO study area do, however, exhibit some similarities to those of the eastern Fremont. Until recently, Anasazi occupation of the study area was also thought unlikely. Although a small number of sites have yielded Anasazi ceramics, sometimes in association with masonry residential structures and evidence of corn, key aspects of Anasazi culture seemed to be missing. For example, kivas have not, to date, been identified in the study area. Site layout and structure design on these sites also vary substantially. Overall, the

Formative-era sites of the UFO study area vary from Anasazi and Fremont sites to the degree that they have been described as a separate archaeological unit—the Gateway tradition (Reed 1997). The Gateway tradition has been applied to local sites with limited evidence of corn horticulture, Anasazi ceramics, and rectangular or oval masonry structures (Reed and Metcalf 1999). Most Gateway sites occur on the western side of the Uncompahgre Plateau, in the San Miguel River drainage in the general vicinity of Norwood and Naturita, Colorado. A handful of probable Gateway tradition sites excavated by the Huschers also occur on the eastern side of the Uncompahgre Plateau, such as the Harvey Place Hogan (site HH), the Middle Fork Hogans (site HMF), and sites HSP, HBL, and HMH (Huscher and Huscher 1943). Overall, however, contemporaneous nonstructural sites are much more common in the UFO study area (Reed and Metcalf 1999). Most of the area's Formative-era sites are campsites, probably representing habitation by comparatively mobile groups primarily engaged in foraging. Certainly, the higher elevations are climatically unsuited for corn horticulture. Reed and Metcalf (1999) have proposed the Aspen tradition to refer to the region's non-farming, Formative-era foragers. Although some nonstructural sites of this period might represent foraging by Gateway tradition peoples or even Fremont or Anasazi people traveling from distant locales, the predominance of nonstructural sites suggests the existence of groups engaged exclusively in hunting and gathering. This view, however, is not uniformly held by all archaeologists working in the region; some believe that all nonstructural, aceramic sites of this period in western Colorado represent seasonal hunting and gathering by regional horticultural groups. Consequently, the tenability of the Aspen tradition is an important research topic.

The Database

There are 281 identified Formative sites in the UFO study area, representing 7.9 percent of the 3,839 sites in the area (Table 10). Most (80 percent) of the Formative components are open artifact scatters, but there are low numbers of other site types, as indicated in Table 21. The distributions of Formative sites (i.e., sites with evidence of Formative components) across the UFO study area are shown in Figure 16, Figure 25, Figure 34, and Figure 46.

Table 21. Formative Site Types in the UFO Study Area.

Site Type	Frequency	Percent
Open artifact	226	80.4
Sheltered artifact	15	5.3
Open architectural	30	10.7
Sheltered architectural	3	1.1
Rock art	14	5.0
Lithic procurement	0	0
Burial	2	0.7
Totals	**290***	**103.2**

* The sum is greater than 281 because some sites comprise multiple types.

A considerable number of Formative sites, of sites with Formative components, in the study area have been subjected to some degree of archaeological excavation (see Table 3). Such relatively intensive investigation, it might be thought, would result in a thorough understanding of the regional Formative occupation, but our understanding has been hampered by field and reporting methods that were simply not of the quality expected from modern researchers or were substandard even for the times. The earliest excavations in the study area focused on the grandest rockshelters and the highly visible masonry architectural sites. Because these investigations generally occurred in the 1930s and 1940s, modern field and analytic techniques, such as radiocarbon dating, macrobotanical and palynological analyses, and detailed archaeofaunal analysis, were seldom or never employed. In the 1960s and early 1970s, such techniques were emerging in the field, but were not often practiced in the study area, because of cost or other reasons. Debitage—so important for

discerning basic lithic reduction strategies and for assessing intensity of site occupation—was not routinely collected on the Ute Prehistory Project (Buckles 1971).

Chronology

The Formative era is the best represented period in the radiocarbon database from the greater Uncompahgre RMP area (Figure 49 and Table 17). Radiocarbon dates peak in the Formative (Figure 49), suggesting dramatic population growth during this era, as discussed by Reed and Metcalf (1999) and Reed and Smith Gebauer (2004). This patterning does not appear to be due to sampling bias, as most of the dates are actually from nonstructural sites that appear much like Archaic sites.

In their study of the UPAP project area, Reed and Smith Gebauer examined the chronological data for the Formative occupation, assigning "best dates" to components based on radiocarbon determinations, tree-ring studies, or on cross-dating of Anasazi ceramic types (2004). They concluded that the dated components reflect a fairly continuous occupation of the study area between the beginning of the era at approximately 400 B.C. to its end at A.D. 1300. Although subsistence and settlement practices may have varied through time, the study area seems to have remained occupied.

Archaeological Units

As suggested by Reed and Metcalf (1999), the utility of the archaeological units defined in the study area should be continually evaluated as additional data are accumulated. Buckles's (1971) phase system developed as part of the Ute Prehistory Project has been shown to be untenable (e.g., Horn et al. 1987) and was further undermined by a subsequent set of radiocarbon dates obtained by Buckles for Christmas Rockshelter (Buckles 1985). Reed's (1997) Gateway tradition and Reed and Metcalf's (1999) Aspen tradition attempt to provide reference for local Formative-era sites, but are likewise in need of continued evaluation. For example, the discovery of corn at the Schmidt site and the Transfer Road Hamlet on the TransColorado pipeline project (Reed et al. 2001)—two sites with basin houses and residential mobility intermediate between the masonry sites of Weimer Ranch and the campsites of hunters and gatherers—has blurred the distinction between the Gateway and Aspen traditions as originally defined.

An apparent hiatus in horticulture in west-central Colorado during the middle portion of the Formative era also poses new problems for regional classificatory schemes. Charles and Cole (2006) attribute the early period of horticulture in western Montrose County to the Basketmaker II culture, as did C.T. Hurst in the 1940s. Early Formative lifeways and technologies are similar over a broad area, so even many early "Fremont" sites could be included under the Basketmaker II rubric, as researchers such as Richard Talbot (1995) have advocated, along with the early sites with maize and basin houses in the UFO study area. Such a "lumping" approach might assist in the recognition of important region-wide patterns that can often be obscured when a strictly local, "splitting" approach is employed. The Basketmaker II concept as applied to the study area, then, should be carefully reevaluated. As Reed and Smith Gebauer have suggested, however, because an increase in size of the archaeological database usually results in recognition of small-scaled variation, locally derived archaeological units may be more appropriate in the long run, as genetic and cultural variation are more fully understood (Reed and Smith Gebauer 2004).

Determination of the period or periods when corn was cultivated in the study area is an important research topic. Reed and Smith Gebauer present a table of 10 sites in the UPAP study area with corn and/or squash remains that have been reasonably well dated using radiocarbon, dendrochronology, or ceramic cross-dating (Reed and Smith Gebauer 2004:Table 28); 9 of the 10 sites are also within the UFO study area. Moreover, since the UPAP study an additional five AMS dates on maize from five of the Weimer Ranch sites have been obtained; the dates are statistically

contemporaneous with one another and yield a pooled mean radiocarbon age calibrated to A.D. 900-1010 (two sigma) (Greubel et al. 2006; Greubel et al. 2009). The data compiled for the UPAP study suggest that corn use was largely restricted to two periods. The first period is roughly coeval with the Basketmaker II period of southwestern Colorado; sites of this period in the study area range from approximately cal 200 B.C. to A.D. 500. The second period, dated by ceramic cross-dating and the recent AMS dates on maize from Weimer Ranch, now appears to date between approximately A.D. 900 and 1100, and possibly even to a 100-year-long period between A.D. 950 and 1050 (Greubel et al. 2009; Reed 2005). With the exception of a radiocarbon date obtained on maize from Tabeguache Cave II (Stiger 2001:Table 10.2) that calibrates to A.D. 440-760, there appears to be a ca 400-year-long hiatus in corn use or production in the study area. The dearth of Basketmaker III and Pueblo I period Anasazi ceramics in the area suggests that the lacuna reflects an abandonment of horticultural practices in the study area for that period. The chronometric database is small, however, so additional efforts to date components yielding cultigens are necessary. Nevertheless, these data have convinced Reed to redefine the Gateway tradition as "sites (in west-central Colorado) with substantial masonry architecture, low quantities of Anasazi ceramics, and evidence of corn… that date to between roughly A.D. 900 and 1100" (Reed 2005:30). As noted above, there are indications that even the 200-year time span cited by Reed is too broad and will continue to narrow as more data are acquired (Greubel et al. 2009:55).

A recent analysis of the long-languishing artifacts and other materials excavated from the Weimer Ranch sites in the early and mid-1970s has resulted in new insights into a set of occupations that Reed (1997) included within the Gateway tradition (Greubel et al. 2006; Greubel et al. 2009). The new AMS dates on maize have already been noted. The analysis of the Weimer Ranch ceramic assemblage, conducted by Lori Reed, revealed not only Pueblo II-period Northern San Juan wares imported from the Mesa Verde region to the south, as expected, but also a robust local pottery tradition that apparently emulated Anasazi ceramics in both construction methods and decoration (Greubel et al. 2006; Greubel et al. 2009; Reed 2006). The results would seem to indicate either the presence of local potters trained by Anasazi potters, or even the actual presence of Anasazi potters. These findings suggest not only a close connection to Pueblo II peoples, but the possibility of a movement of people; that is, an actual migration of Ancestral Puebloans into the study area. Subsequent development of this theme (Andrews 2006; Andrews and Greubel 2007; Greubel 2007; Greubel et al. 2009; Varien 2007) seems to reflect an increasing confidence among some researchers that Ancestral Puebloan settlers initiated the way of life known archaeologically as the Gateway tradition.

Greubel (2006), in an attempt to explain the co-occurrence of different types of architecture at Weimer Ranch, as well as the unusual mixture of artifacts and subsistence remains suggesting both farming and intensive hunting and gathering, has even proposed that the immigrant Ancestral Puebloan farmers came to live side by side with local foraging peoples who became attached to the settlement and began to acquire some of the trappings of the immigrant's lifeway, as seen ethnographically and historically among farmers and foragers in various parts of the world (e.g., Jolly 1996; Spielmann and Eder 1994). In this model, Gateway tradition sites were created by the Anasazi immigrants or their descendants, or the acculturated foragers who had adopted aspects of the Puebloan lifeway.

Meanwhile, there is certainly no consensus among archaeologists working in southwestern or west-central Colorado about what the new findings from the Weimer Ranch sites reveal about the people who lived there. Greubel et al. (2006) concluded that continued use of the term Gateway tradition was justified, as this Formative-era lifeway and the sites it produced, whatever its genesis, became over its relatively brief span of existence something quite different from the way of life practiced in the Anasazi homeland to the south.

Subsistence

When the context for the northern Colorado River basin was prepared, two basic models of Formative-era subsistence were proffered (Reed and Metcalf 1999). One model concerned the Gateway tradition, and the second concerned the Aspen tradition. The Gateway subsistence model in its most basic form was originally developed by Crane (1977), who reported on Metropolitan State College's excavations at the Weimer Ranch sites. In Crane's model, primary residential sites, with masonry structures, Anasazi ceramics, and evidence of corn, were the locus of horticultural activities. Corn was planted in the vicinity of the structural sites in June. Logistically organized groups would then travel to the higher elevations to hunt and gather. Groups aggregated again in the late summer, when corn was harvested and processed for winter use. Wild plants and animals were also taken. Peoples subsisted on stored domestic and wild resources through the winter months, augmenting their diet with available game. Hunting and gathering resumed in the lower elevations near the structural sites in the spring, until it was time to plant. In this model, sites such as the Jeff Lick Stone Circles (5MN3462), which is situated atop the Uncompahgre Plateau at an elevation of 2,914 m (9,560 ft), might be seen as seasonal habitations of Gateway hunters and gatherers engaged in the collection of resources that would be, at least in part, stored for winter.

The floral, faunal, and artifactual data acquired during Alpine's analysis of the Weimer Ranch collections (Greubel et al. 2006) largely support Crane's model, suggesting only minor refinements. For example, analysis of the faunal remains suggests that the bones of larger animals were heavily processed in order to extract within-bone nutrients (i.e., marrow and bone grease). These substances may have provided important calories during the lean months of winter and early spring. Overall, the data from the Weimer Ranch sites seem to reflect a carefully balanced subsistence system in which the risks of growing maize were offset by seasonal hunting and gathering in very productive environments. Clearly, however, excavated data from other Gateway tradition sites in the region are needed for comparison.

Aspen tradition subsistence was based on hunting and gathering. Because the ethnographic record suggests that hunters and gatherers frequently traded with local farmers (Kelly 1995), it is possible that some corn might be found in Aspen tradition contexts; horticulture, however, was not practiced. Aspen tradition hunting and gathering practices were at least superficially like those of Archaic peoples. An "up-down" settlement mode was employed, wherein groups spent winters in the lower elevations, where over-wintering deer and elk were exploited, along with smaller animals. There may also have been some reliance on stored food resources. With the arrival of spring, logistical groups or small foraging bands may have traveled to the lowest elevations in the study area, where the growing season first begins and resources such as greens and shoots were available. Groups would then progress into higher elevations, following the elevational progression of the growing season and game animals. The warmest months were spent in the higher elevations. There, warm temperatures and moist conditions permit abundant plant growth which, in turn, permits relatively high faunal carrying capacity. With the arrival of late summer, nuts and berries were collected. By fall, efforts were probably made to dry meat and plant foods for winter storage.

These models may be too simplistic. Sites that outwardly appear to represent the remains of foragers are increasingly yielding evidence of corn, as palynological and macrobotanical sampling has become more commonplace. Archaeological excavations associated with the TransColorado pipeline project revealed two additional lithic scatters with evidence of corn. Small quantities of charred corn kernels were recovered within two basin houses at Locus 3 of the Schmidt site (5MN4253) near Norwood, Colorado. The rather insubstantial structures were chronometrically dated between cal 355 B.C. and A.D. 120. The excavators suggested that the site occupants were primarily hunters and gatherers who either grew small quantities of corn or obtained it in trade (Greubel and Cater 2001). The Transfer Road Hamlet site (5MN3876), just west of Montrose, Colorado, yielded a grain of corn pollen in a soil sample derived from a Formative-era basin house. The basin house was dated through radiocarbon analysis between cal 90 B.C. and A.D. 245 (Kalasz

et al. 2001a). The site excavators minimized the importance of corn to the prehistoric occupants of the Transfer Road Hamlet.

Although some portions of the UFO study area were undoubtedly unsuited for corn production, an elevation band characterized by sufficiently long growing seasons and adequate moisture exists. Maize requires a growing season of approximately 110 days and requires at least 355 mm (14 in.) of precipitation (Petersen 1988). Annual precipitation on the Uncompahgre Plateau ranges from 8 to 20 in., dependent on elevation (Reed and Metcalf 1999). The towns of Delta and Gateway currently average 138 and 162 frost-free days per year, respectively, indicating that a sufficient number of frost-free days occurs to allow maize growing on the lower portion of the plateau.

Macrobotanical data from the TransColorado pipeline project suggest that the Formative-era sites north of the San Juan Mountains evince a wider range of plant resources than any other regional archaeological unit (Reed et al. 2001). Increased diet breadth implies inclusion of lower ranked food resources. The project's faunal data also support this trend of increased use of lower ranked food resources; the project's Aspen tradition sites yielded larger percentages of small animal bones than the Archaic or Ute sites (Reed et al. 2001). The percentages of identified small animal bones for the Aspen unit were comparable to those of the Anasazi. A partial explanation of the increase in diet breadth during the Formative era in west-central Colorado might lie in population growth. Compilations of the region's radiocarbon data indicate a prehistoric population peak during the Formative era (Figure 49) (see also Reed and Metcalf 1999). Due to the nature of the region's Formative-era sites and the history of investigations, bias from over-selection of Formative sites by excavators is unlikely. Expansion of diet breadth during the Formative era—and, inclusion of lower rank animal and plant resources—suggests that the setting was appropriate for the inclusion of horticulture into regional subsistence systems, even among groups that were relatively mobile and dependent on hunted and gathered resources. The recovery of corn at such sites as the Schmidt site and Transfer Road Hamlet suggests that groups that outwardly appear as dedicated foragers also raised corn. That evidence of corn is minimal suggests that these groups incorporated methods of corn production that involved relatively little investment of labor, such as Barlow's (2002) Plant-and-Harvest method. Hunting and gathering with substantial residential mobility remained key elements of the lifeway. The model of relatively mobile groups relying primarily on hunting and gathering but also engaged in limited and unintensive horticulture needs to be further evaluated with excavation data.

Changes in subsistence practices through time should also be assessed by future research. Although both structural and nonstructural sites in the study area have yielded evidence of corn, it is possible that late Formative groups relied more heavily on corn than early Formative groups. As noted above in the section on Formative-era chronology, horticultural sites in or near the UFO study area appear to date to two periods. The first period, represented by such sites as Cottonwood Cave, the Schmidt site, and Transfer Road Hamlet, extends between approximately cal 200 B.C. and A.D. 400. These sites yield varying amounts of corn—sometimes in corn caches—in rockshelters and in basin houses. The second period dates to approximately A.D. 900-1100 and is represented by Gateway tradition sites, such as Tabeguache Pueblo and the Weimer Ranch sites. The Gateway tradition sites are much more substantial than the early sites, in terms of investment of labor for residential architecture. The greater investment in labor for residential structures probably reflects anticipated length of occupation. It is likely, therefore, that the later horticulturalists were less residentially mobile than the early horticulturalists. The reduction in residential mobility is probably associated with differences in subsistence practices.

Technology

Two major technological changes occurred at the start of the Formative era. The atlatl and dart were largely replaced by the bow and arrow, resulting in substantial reduction in projectile point sizes, although the timing of this technological shift is not well understood. In the UFO study area and elsewhere on the northern Colorado Plateau and in the Great Basin, small corner-notched arrow points—commonly referred to as Rosegate points—became common (Holmer 1986; Justice 2002b). Other styles of arrow points are occasionally found in the study area in Formative contexts but are much less common, such as Uinta Side-notched, Bear River Side-notched, and, possibly, Nawthis, Bull Creek, Parowan Basal Notched, and Cottonwood Triangular points, the last type being more common in Protohistoric contexts (Holmer 1986; Holmer and Weder 1980; Justice 2002b). In the West End, arrow point styles similar to those from Anasazi contexts in southwestern Colorado are sometimes found, such as Anasazi Type A Stemmed, Anasazi Type B Corner-notched, and Anasazi Type C Side-notched (Greubel et al. 2006; Hayes and Lancaster 1975; Lipe et al. 1999).

Lithic reduction strategies during the Formative era, in most respects, do not appear to differ appreciably from those of the preceding Archaic era. As in all periods, the organization of flaked lithic technology was likely conditioned by group mobility, availability of lithic raw material, and subsistence orientation. As such, it seems to have varied in subtle ways across time and space within the region (Reed et al. 2001). The recent analysis of debitage assemblages from the Weimer Ranch sites in the West End suggest reliance on both a flake tool industry for domestic use and a bifacial industry for logistical resource collection and domestic use, as seen in other regions (Kelly 1988; Parry and Kelly 1987; Sullivan and Rozen 1985; Torres 2000). As usual, additional data and further well-designed analyses of those data are needed to define any possible differences between the lithic reduction strategies of farmers and foragers in the study area.

Ceramics were the second major technological innovation of the Formative era. Ceramics were commonly manufactured and/or used by relatively sedentary groups engaged in horticulture. No ceramic types have been attributed solely to highly mobile hunter-gatherer groups during the Formative era, though it is possible that they also made and used pottery to some extent. In the UFO study area, the only known local ceramic tradition during the Formative era existed in the West End after A.D. 900, at the Weimer Ranch site complex and possibly other Gateway tradition sites in the region (Greubel et al. 2006; Greubel et al. 2009; Reed 2006). This tradition focused on the manufacture of plain and corrugated gray wares and Pueblo II-style decorated white wares. These local wares were made using locally available clay and temper sources and sometimes temper made of crushed sherds from imported Northern San Juan region wares (Reed 2006). The origin of this tradition may be traceable to immigrant Pueblo II potters and their apprentices (Greubel et al. 2006). Aside from these local ceramics, Formative-era pottery found in the UFO study area typically represents either Anasazi or Fremont trade wares.

Early Formative architecture in the form of basin houses has been identified in the UFO study area (e.g., Greubel and Cater 2001; Kalasz et al. 2001a), but so far this structure type is not common in the area. Substantial masonry structures associated with the Gateway tradition appear late in the Formative era, mostly in the West End LU but also in low numbers in the Uncompahgre Plateau LU as well (Crane 1977; 1978; Greubel et al. 2006; Greubel et al. 2009; Hurst 1946, 1948a; Huscher and Huscher 1943; Huscher and Huscher 1939). In addition, pithouses have been identified in at least one locale in the UFO study area (i.e., the Paradox Valley) but it is not known if they occur elsewhere in the study area. Additional survey and excavation data are needed to further elucidate the spatial distributions of structural sites and the technological aspects of the different types of architecture in the area.

Settlement Patterns

Settlement patterns changed dramatically in some parts of the UFO study area, particularly the West End LU, during the Formative era. Residential mobility decreased, a changed linked to the adoption of horticulture by some of the region's inhabitants. Reduced residential mobility is evidenced by increased occupation of rockshelters and by an increase in labor investment of residential structures. Early in the era, basin houses were constructed, a house type that appeared in earlier archaeological units. By the late Formative era, substantial masonry structures, such as Tabeguache Pueblo and the Weimer Ranch structures, were constructed. Such structures probably served to secure and mark as occupied highly desirable locations, as well as to provide sufficient space for habitation and storage. The actual length of occupation of these substantial structures is unknown, though it was almost certainly longer than the length of occupation of sites with simpler basin houses or ephemeral brush structures. Some of the sites on or near Cottonwood Creek north of Norwood had middens, indicative of a fairly long period of occupation (Crane 1977).

As discussed in the chapter on the Archaic era, anticipated residential mobility is thought to have considerable explanatory power for variability between archaeological sites. In the UPAP study, Reed and Smith Gebauer (2004) evaluated the excavated Formative-era sites in their study area and placed them into four mobility categories as defined by Kent (1992). The details of their analysis will not be repeated here, but their conclusions suggest that anticipated long-term, actual long-term sites are common, representing 36 percent of the excavated Formative sites in the region. These sites include the masonry residential structures in the West End LU and some of the larger rockshelters. These sites yielded abundant and diverse artifacts, evinced investment of substantial labor in feature or structure construction, and were frequently in protected settings. Other Formative sites (15 percent) were found to reflect anticipated long-term, but actual short-term site occupation. These sites also evidenced substantial investment in feature or structure construction, but were characterized by relatively few artifacts. Some of the excavated Formative sites (21 percent) were categorized as anticipated short-term, actual long-term occupation. These sites represented minimal investment in feature construction and often little patterning in site layout, but yielded abundant artifacts, indicating long-term or repeated occupation. Lastly, the group of sites representing anticipated short-term, actual short-term occupation constituted 27 percent of the sample of excavated Formative sites. These sites evinced little investment in construction labor and little patterning in site layout, and yielded relatively few artifacts.

It is likely that sites representing different residential mobility categories will evidence variation in site setting. It might be expected, for example, that the sites with anticipated long-term occupation would tend to cluster in the lower elevations, where groups wintered over. Anticipated short-term occupations, on the other hand, might display more variation, representing short-term forays into the lowest or highest elevations to extract seasonally available food resources. The database is too small and biased by the history of site selection for excavation to determine such trends at present, however. Such modeling will be important in the future.

The distribution of sites with evidence of corn or squash provides some insight into the distribution of lands suitable for prehistoric horticulture. In the UPAP study area, twelve sites with cultigens were identified (Reed and Smith Gebauer 2004). The elevations of these sites range from a low of 5,738 ft (1,749 m) at Tabeguache Cave II to 6,902 ft (2,104 m) at site 5OR243 near Ridgway Reservoir. The mean elevation of the sites with cultigens is 6,392 ft (1,948 m); the majority of the sites cluster around the mean. Overall, these data suggest that the elevation zone between approximately 5,700 and 7,000 ft (1,737 and 2,134 m) contained the farming belt during the Formative era on the Uncompahgre Plateau. Formative-era sites occur in all elevation zones outside the farming belt; sites in the highest or lowest settings are likely to represent either seasonal forays by farmers or by full-time foragers that occupied other portions of the study area.

Transitions

The extent and nature of culture change during the Archaic to Formative transition in the UFO study area is poorly understood. Because the settlement and subsistence systems of both Archaic peoples and probably the majority of peoples during the Formative era revolved around mobile hunting and gathering, the changes in much of the UFO study area—especially in the Uncompahgre Plateau, North Fork, and Ouray landscape units, may have been relatively subtle. In some areas, such as the West End, some fairly dramatic changes apparently took place early in the Formative era in the form of maize horticulture. Whether this early corn growing was carried out by groups newly arrived from the south (Basketmaker II peoples?) or indigenous groups who acquired maize from their southerly neighbors is yet unknown. Nor is it known if this early maize growing was simply an experiment as opposed to an integral part of the subsistence regime. Elsewhere in the study area where horticulture was thought to have played little, if any, direct role in subsistence, there is evidence that Formative-era hunter-gatherers substantially increased diet breadth by incorporating more types of wild plants and animals into their diet (Reed 2005).

Archaeological evidence from west-central Colorado suggests that the transition from Formative-era to Protohistoric-era lifeways was more pronounced (see Reed 2005). Diet breadth decreased sharply with the advent of the Protohistoric era; the economic focus seems to have been mule deer. Radiocarbon data from the study area suggest a major cultural change. As shown in Figure 49, the frequency of radiocarbon dates drops sharply at the approximate transition between the Formative and Protohistoric eras. A similar trend is evident over all of western Colorado (Reed and Metcalf 1999:78). Because Protohistoric sites are no less visible or suitable for archaeological excavation than Formative sites, the drop in radiocarbon frequencies probably reflects a decline in human populations. The apparent decline in populations was accompanied by the appearance of brown ware ceramics and replacement of Rosegate arrow points by Desert Side-notched and Cottonwood Triangular arrow points (Reed 1994). The combination of changes in both demography and technology suggests immigration of a new cultural group. Because Numic-speaking Utes were the primary inhabitants of the Colorado Rockies and the Colorado Plateau during the historic period, and because their technology can be traced into the prehistoric period, it is likely that the immigrants were Numic speakers. This interpretation, however, merits additional scrutiny.

Data Gaps and Needs

Major data gaps and needs for the Formative era within the UFO study area are identified below. A later section of this document builds on the identified data gaps by defining specific research questions arising from them.

The Known Site Pool

- Because most Formative-era structural sites were dug decades ago to standards not matching those of the present day, the quality of the archaeological database is uneven.

Chronology

- Chronometric data are needed to better define the appearance and the disappearance of cultigens in the study area, to test the model that horticulture was practiced in the study area in two periods with an intervening period with little or no horticulture, and to resolve the question of the temporal span of the Gateway tradition.

Archaeological Units

- Data relevant to the continued examination of the utility of the Gateway and Aspen traditions are needed, especially in light of recent discoveries of corn at sites that outwardly appear similar to forager sites.

- Data pertaining to the possible interactions of Formative-era horticultural and foraging groups in the study area are needed.

Settlement Patterns

- More survey-level and excavated data are needed to allow the refinement of models of Formative settlement systems in the study area and to resolve questions revolving around mobility, length of occupation, seasonality, and use of different elevation zones.

Technology

- Sites with residential architecture that date to the Formative era are particularly important for understanding Formative architectural technology.

- Lithic assemblages from excavated, well-dated contexts are needed to discern lithic reduction strategies for different time periods, cultural units, and site types within the Formative era.

Subsistence

- Direct subsistence data in the form of macrobotanical and faunal remains, pollen, starch, blood residue, lipids, and residues suitable for FTIR analyses are needed from Formative sites.

- Sites with the potential for yielding evidence of cultigens are particularly important.

Protohistoric Era

Introduction

As defined by Reed and Metcalf (1999:146), the Protohistoric era refers to 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 A.D. 1881. As such, it includes the Native American occupation of the region during the historic period, usually considered to be from 1776 (the date of the Dominguez-Escalante expedition) to 1881. Formative-era horticultural adaptations had essentially terminated by A.D. 1300 or earlier, and, based on archaeological evidence, subsistence was once again focused solely on hunting and gathering. By the time of the first historic documentation of the region's aboriginal groups in 1776, when Fathers Escalante and Dominguez skirted the southern and eastern edge of the Uncompahgre Plateau on their planned expedition to California (Warner 1995), Ute had been identified in the area. The Ute remained the primary aboriginal occupants of west-central Colorado throughout the historic period. Because the Ute have so long been associated with the region, and because ceramic and projectile point types from Ute sites of the historic period extend into prehistory, the Ute or their ancestors are commonly inferred to have been the primary inhabitants of the area throughout the era (Reed 1994).

Protohistoric sites in the UFO study area primarily consist of open lithic scatters, rockshelters, and wickiups. In general, Protohistoric sites resemble Archaic sites, which is likely a reflection of the similarities in subsistence, technology, and settlement patterns between these two time periods. The similarities even extend to rock art (Carol Patterson, personal communication to Rand Greubel). Diagnostic artifacts on Protohistoric sites include Desert Side-notched and Cottonwood Triangular projectile points and, better still, Uncompahgre Brown Ware ceramics. Habitation architecture during the Protohistoric era consisted of relatively insubstantial domiciles built of a superstructure of branches or poles covered with brush or bark, called wickiups. Relatively few wickiups remain in the area because of their perishable nature and vulnerability to forest fires. After they became an equestrian society, Ute peoples also began to use the hide-covered teepee, a practice apparently adopted from the Plains tribes. Very little archaeological evidence of teepees, however, has been identified in the study area.

The Database

There are 240 identified Protohistoric sites in the UFO study area, representing 6.3 percent of the 3,839 sites in the area (Table 10). This number includes sites identified as either Protohistoric (n=212), Historic Native American (n=25), or both (n=3). Most (69 percent) of the Protohistoric sites are open artifact scatters, followed by wickiup sites (15 percent), and including low numbers of other site types, as indicated in Table 22. The distributions of Protohistoric sites (i.e., sites with evidence of Protohistoric or Historic Native American components) across the UFO study area are shown in Figure 17, Figure 26, Figure 35, and Figure 47.

As with other archaeological units, the quality of the Protohistoric database varies considerably, reflecting the periods in which the sites were investigated. Buckles (1971) and his associates excavated nine sites with clear Protohistoric components during the Ute Prehistory Project in the early 1960s. Although excellent data regarding artifact types were obtained, chronometric dating was limited to dendrochronological analysis of three wickiups from sites 5MN41 and 5MN42 (Buckles 1985). Important information regarding animal bones was lost, and macrobotanical, palynological, and similar modern ancillary analyses were not conducted. The sites where Buckles encountered Protohistoric components tended to be minimally excavated. Excavations at wickiup sites, for example, focused on feature interiors, with little consideration of extramural activity areas.

Table 22. Protohistoric Site Types in the UFO Study Area.

Site Type	Frequency	Percent
Open artifact	165	68.8
Sheltered artifact	7	2.9
Open architectural	15	6.3
Sheltered architectural	1	0.4
Wickiup	37	15.4
Rock art	13	5.4
Lithic procurement	1	0.4
Cambium tree	9	3.8
Burial	5	2.1
Totals	**253***	**105.5**

* The sum is greater than 240 because some sites comprise multiple types.

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 (Greubel 2001a; Greubel and Cater 2001). These two sites, which had standing or collapsed but discernible wickiups as well as numerous pit features and artifacts, 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.

Chronology

Reed and Smith Gebauer (2004) have presented a thorough discussion of existing chronological data for the Protohistoric era in the region, summarized below. Protohistoric-era radiocarbon dates are fairly well represented in the study area (see Figure 49 and Table 17), though most were obtained at either the Schmidt or the Simpson Wickiup sites. Although the chronologies

of these two extensively excavated sites have been well documented, archaeologists' understanding of Protohistoric-era occupation of the overall study area is quite limited. Viewed uncritically, the data suggest occupation of west-central Colorado by Protohistoric-era groups between approximately A.D. 1300 and the late 1800s.

Reed and Smith Gebauer (2004:Table 37) list a considerable number of dendrochronological dates from Protohistoric sites within or near the study area, though most are not cutting dates and, consequently, require careful evaluation. Like the radiocarbon dates, most are from the Schmidt site or the Simpson Wickiup site, though some were obtained by Buckles from wickiup sites on the eastern slope of the Uncompahgre Plateau (Buckles 1985). At the Schmidt and Simpson Wickiup sites, Greubel and Cater obtained dendrochronological samples from dead but still-standing juniper trees near the structures—a pattern that Cater had observed on Protohistoric Dinetah sites in northern New Mexico—speculating that the trees had died as a result of being stripped of bark for use as closing material on the wickiups or for some other use (e.g., bedding) (Greubel 2001a, 2005; Greubel and Cater 2001). Wickiup poles were also tree-ring dated. In general, the tree ring dates indicate Ute occupations in the seventeenth, eighteenth, and early nineteenth centuries. Several thermoluminescence (TL) dates have also been obtained on ceramic sherds from Protohistoric sites in the UFO study area. These include two dates of approximately A.D. 1750 and approximately A.D. 1400 from the Schmidt site (Greubel and Cater 2001), a date of approximately A.D. 1500 from the Aldasoro site (5MN4270) (Greubel and Reed 2001), and a date of approximately A.D. 1620 from the Simpson Wickiup site (Greubel 2001a).

Accurate dating of Protohistoric-era components is critical for addressing important research topics such as the timing of Numic immigration into the region and the identification of periods of depopulation related to the introduction of European diseases (Reed and Smith Gebauer 2004). As noted above, dendrochronological dating of wickiup poles and radiocarbon dating of hearth fuel woods have generally provided the basis for chronological interpretations over the past few decades. Archaeologists are becoming increasingly aware, however, that these methods are too imprecise or even misleading, and cannot yield the fine-grained chronological data necessary for the resolution of events that took place over relatively short time scales (Reed et al. 2001). The primary limitations of these traditional dating approaches stem from use of long-dead wood for fuel and for habitation structures; comparison of dates derived by such methods with dates obtained from AMS dating of annual or short-lived plants and TL dating of ceramics suggest that "old wood" dates overestimate the true age of occupations from one to two centuries or more (see the discussion of this issue in Reed and Metcalf 1999; Reed and Smith Gebauer 2004:101-103). Consequently, researchers in the study area attempting to date Protohistoric components should focus on AMS dating of annual or short-lived plants and TL dating of ceramics, if possible. Dendrochronology may still be useful in certain circumstances, but each researcher must carefully evaluate the datable object and the event that is being dated. For occupations within the historic period, artifacts of Euroamerican manufacture may yield occupation dates that are accurate to within a few decades or less (Greubel 2001a; Horn and Greubel 1997).

The overestimation of site age resultant from the "old wood problem" has important ramifications for dating the Numic immigration. Although calibrated radiocarbon data from the study area suggest the appearance of Protohistoric groups between A.D. 1300 and 1450, the validity of these data must be questioned, as the radiocarbon assays on hearth charcoal may actually be dating events that occurred after A.D. 1450. "Good" chronometric data are too few to currently address this issue. Adherence to the dating protocols suggested above, however, should allow future researchers to avoid the old wood problem and, with time and additional work in the region, better date the Numic immigration.

Another important research question related to chronology, alluded to above, is the possibility of an occupational hiatus in the region as indicated by a paucity of radiocarbon dates for the period between approximately A.D. 1650 and 1750 (Reed and Metcalf 1999). The addition of a large quantity of radiocarbon dates from the TransColorado Pipeline Project failed to dispel the hypothesized hiatus; the project's thermoluminescence dates also suggested its legitimacy (Reed et al. 2001). Reasons for the hiatus, if it is real, are unknown. It has been speculated, however, that it may represent a period of depopulation of the region because of the introduction of European diseases (Reed and Metcalf 1999; Reed and Smith Gebauer 2004). Simms, commenting on a similar pattern in the radiocarbon data evident in the Great Basin during the late prehistoric or Protohistoric period, has recently suggested the same thing (Simms 2008). Additional chronometric dates from Protohistoric components are necessary to demonstrate the reality of the hiatus. If the hiatus is indeed real, additional archaeological data will be needed to determine if it represents the effects of an epidemic or series of epidemics.

Archaeological Units

Because the function of archaeological units is to enhance communication, and because our understanding of the archaeological record is always changing, periodic evaluation of existing cultural taxonomic units is desirable. Data resultant from future projects conducted within the study area should be used to examine the utility of current Protohistoric-era archaeological units, such as the Canalla (pre-horse) and Antero (post-horse) phases (Reed and Metcalf 1999). Indeed, even the Protohistoric era as a concept—although used in this document primarily because it is entrenched in the recent archaeological literature and used in the context for the Northern Colorado River Basin (Reed and Metcalf 1999)—is in need of reevaluation. The separate issues of Reed and Metcalf's "Protohistoric era" and the Canalla/Antero phase construct have recently been discussed at length by Baker and his colleagues (2007). In their critique of the phase construct, Baker et al. (2007:39) suggest that the division between the two phases at A.D. 1650 is in error because there is no compelling evidence that the Ute obtained horses in any appreciable numbers by this time.

The Canalla and Antero phases were defined primarily from historical rather than archaeological data, as they were created to reflect a historically documented change from a pedestrian to an equestrian lifeway, even though the timing of this change is not well understood (Reed 1988). When the two phases were first defined, very few Protohistoric-era sites had been excavated in the area, but it was presumed that future excavations would reveal important changes in subsistence, settlement patterns, and technology that took place after the adoption of the horse as a beast of burden. Greubel, discussing the evidence from the Schmidt and Simpson Wickiup sites, noted that the earlier and later Ute occupations at these sites looked very much the same; that is, the differences predicted by the Canalla/Antero phase scheme were not apparent (Greubel 2001a; Greubel and Cater 2001). Nevertheless, it is yet possible that differences in subsistence, settlement, and general lifeway between these two periods of time will eventually be discerned based on archaeological data, thereby supporting the tenability of the Canalla and Antero phases. As for the critique by Baker et al. (2007) regarding the timing of the introduction of the horse, this is precisely the type of problem that archaeology may be able to solve, given enough time and data. Additional high-quality data are needed from excavated components dating between about A.D. 1300 and 1850.

In contrast to Reed and Metcalf's (1999) two-phase construct, Baker (1988; Baker et al. 2007) has put forth an alternative taxonomy for the Ute occupation of west-central Colorado. The scheme is based on Leacock's (1971) explicitly historical model comprising five phases of Native American history, beginning with the late pre-contact period and ending with an "emergent reintegration" phase which describes the modern period. Baker et al. (2007) have adapted the first four phases of Leacock's model into a taxonomic scheme for the Eastern Ute and make their case for it in the recently published *Colorado History: A Context for Historical Archaeology*. Archaeologists working in the region are encouraged to examine the competing taxonomic schemes as presented in Reed and Metcalf (1999) and Baker et al. (2007) and judge for themselves.

Archaeological units such as those defined by Reed (1988; Reed and Metcalf 1999) and Baker et al. (2007) are useful for thinking and talking about time-space issues within the Protohistoric era, but ultimately they are only frameworks useful for supporting the fabric that makes up the real work of archaeology, which is investigating, describing, and explaining culture change. Therefore, it is, perhaps, better to employ simpler schemes such as Reed's for the time being until sufficient excavated data have accumulated to allow the refinement of existing cultural taxonomies or the creation of new schemes that better describe the reality of the Protohistoric and historic Native American occupation of the region. Moreover, Reed and Metcalf have presented a convincing argument for why the Leacock-derived model is not appropriate for use as an archaeological phase sequence (Reed and Metcalf 1999:150). That said, there are a fair number of propositions regarding culture change incorporated into the Leacock model (as presented by Baker et al. 2007:Figure 3) that might profitably be put forth as hypotheses to be tested with archaeological data.

Technology

Architecture

Because relatively few Protohistoric sites on the Uncompahgre Plateau have been subjected to extensive archaeological excavation, the range of variation in key aspects of Protohistoric technology is poorly understood. More basic description of wickiup sites is needed. In his analysis of Ute wickiups, Scott (1988:52) indicated that future research concerning wickiup sites should include the following:

1. Adequate recordation and mapping to begin to understand intrasite and intersite layout or variability;
2. Detailed structural analysis of construction techniques to determine if there are changes through time;
3. Temporal control to determine the age of these structures and to gain better understanding of the date-ranges of associated artifacts; and
4. Study of spatial patterning of sites in terms of their elevational distribution, associated environmental characteristics, and horizontal distributions.

The research objectives listed by Scott remain appropriate for future archaeological studies. In fact, documentation and investigation of wickiups in the very near future is critically important, as it is unlikely that wickiups will remain standing after another few decades. Most have already been destroyed or have toppled, and those remaining are becoming increasingly unstable as a result of decomposition and continued exposure to physical threats.

Several wickiup sites have been investigated in the study area as part of the Ute Prehistory Project (Buckles 1971) and the TransColorado Pipeline project (Reed et al. 2001). These investigations recovered valuable data. Additional work is needed, however, to increase sample size and to better define patterns.

Although attributes of wickiup construction are important in their own right, wickiups are especially important because they can contribute to our understanding of site structure (e.g., Greubel 2005). Residential architecture is rare at most sites in the region, in spite of recent efforts to identify ephemeral architecture during archaeological excavations. Because the study area is in a temperate climate, structures were probably necessary for human survival during all periods, during most seasons. It is likely, therefore, that brush structures such as wickiups were constructed during all periods of occupation, and that such structures were commonly present at the sites we now classify as nonstructural, open artifact scatters. It is likely that decay and erosion have simply removed all evidence of these relatively insubstantial structures. Certainly, if wood elements were removed from the wickiup sites excavated on the TransColorado project sites, little archaeological evidence would have remained except of the interior hearths, which would probably have been identified as

extramural features. The excavation of wickiups and broad areas surrounding them enable archaeologists to understand the distribution of artifacts and features around the structures; a recent article in *Colorado Archaeology* (Greubel 2005) represents an attempt to interpret spatial patterning at two Ute habitation sites in the study area. Ultimately, this may enable archaeologists to better interpret archaeological deposits where no evidence of habitation structures remains, and to possibly interpolate past structure locations.

Additional research is also needed to better determine the function of various types of brush and wooden pole structures and to determine if other types of habitation structures, such as teepees, were used in the study area. Criteria for functional classification might include the distribution of wickiups across a single site—with hidden or isolated structures possibly representing menstrual huts (see Buckles 1971)—as well as artifact and feature richness and diversity. Functional classification of wickiups is a worthwhile endeavor but the plasticity of this type of architecture, which probably precludes the creation of complex wickiup typologies, should be kept in mind (Greubel 2001b).

Detecting the former locations of teepees presents the same problems as detecting the former locations of wickiups. Ethnographic evidence clearly indicates that teepees were inhabited in the region following adoption of the horse as a beast of burden (e.g., Smith 1974). Ethnographic and archaeological data from the region suggest that the perimeters of teepees were not encircled with rocks, unlike some temporary structures on the Plains (Buckles 1971; Smith 1974). Identification of teepee locations will probably depend on attributes of site structure, rather than on direct architectural remnants. A possible teepee locale was tentatively identified at the Schmidt site (Greubel and Cater 2001).

Additional research is also needed to determine whether the season of occupation is reflected in architectural attributes (Sanfilippo 1998). Citing ethnographic data, Buckles (1971) suggests that Ute winter habitations may have been more substantial than summer habitations, though both evidently consisted of a pole framework covered with brush and/or bark. Archaeological data do not currently to support the notion of two distinctly different structure types, representing cold season or warm season occupations, but clearly additional information is required.

To close this discussion of architecture, it should be noted that Curtis Martin and his colleagues at the Dominguez Archaeological Research Group have embraced the research directives articulated by Doug Scott (1988), as well as their own ambitious agenda, by undertaking the Colorado Wickiup Project, the goals of which are to "record, compile, and disseminate 'preservation-quality' documentation of wickiups and other aboriginal wooden structures in Colorado" (http://www.dargnet.org/colowick/index.html). They have devised an "aboriginal wooden component form" for recording wickiups and other Protohistoric and historic-period wooden features and begun recording numerous wickiup sites in western Colorado (e.g., Martin 2008; Martin et al. 2006; O'Neil et al. 2004). Their efforts should help to convince other archaeologists of the importance of being exceptionally thorough when recording wickiup sites.

Ceramics

Other aspects of Ute technology also merit further examination. As discussed by Reed and Metcalf (1999), dating the appearance of Uncompahgre Brown Ware in the region is an important research objective. This is best accomplished by thermoluminescence dating of ceramic sherds, a method that avoids the "old wood problem" associated with many radiocarbon and dendrochronological dates. Such studies may help determine the time of Numic immigration into the region, or might convincingly demonstrate that artifacts commonly used as diagnostic of Ute culture in the region, such as Uncompahgre Brown Ware and Desert Side-notched points, appeared in the archaeological record at different times.

Further technological analysis of Protohistoric ceramics is also necessary. Many recent investigations tend to classify all local brown wares as Uncompahgre Brown Ware, often without careful analysis. This may result in the inclusion of a very broad range of technological variation within the type, which may, in turn, obscure meaningful patterns of variation. For example, recent investigations at the Simpson Wickiup site (5SM2425) revealed the presence of apparent Dinetah Gray ceramics—an early Navajo type—in contexts that otherwise appear to be Ute (Greubel 2001a). Because the apparent trade ware was recognized, it was possible to consider the nature of contact between the Ute and Navajo, a topic previously unexamined in the region. Reed et al. (2001) have recently argued that only one of the two ceramic types defined by Buckles (1971) as Uncompahgre Brown Ware should actually be maintained. They suggest that the fingertip-impressed type, which has a pointed base, should continue to be regarded as Uncompahgre Brown Ware. The plain variety, however, may evince too much variation to be useful as a single type. Although future research may once again attribute the plain variety to Uncompahgre Brown Ware, careful scrutiny of the plain ceramics may lead to new interpretations. Additional attention should also be afforded sites yielding corrugated brown ware pottery. Brown ware with partly obliterated corrugations has been identified at several sites in the region. These are unlike Uncompahgre Brown Ware ceramics, though chronometric dating suggests contemporaneity. Corrugated brown ware recovered from the Aldasoro site (5MN4270) on the Uncompahgre Plateau has recently been defined as a new Protohistoric ceramic type, Aldasoro Corrugated (Greubel and Reed 2001). Efforts should be made to identify additional corrugated brown ware sherds in the study area, and to reassess the utility of the newly created type.

Cater (2002) has pointed out the similarities between Dinetah Gray Ware and some varieties of Uncompahgre Brown Ware, calling both for caution in the identification of these pottery types as well as more research into the technologies and materials used in their manufacture. Obviously, there is a lot riding on correct identifications of pottery, as these artifacts are typically used to assign cultural affiliation to sites or components or, as in the case of the Simpson Wickiup site described above, to infer trade relationships or other contacts between different cultural or ethnic groups.

Flaked Lithics

Diagnostic projectile points manufactured during the Protohistoric area include Desert Side-notched and Cottonwood Triangular points (Holmer 1986; Justice 2002b; Reed 1994). Shoshonean knives have been discussed in the literature as another Ute diagnostic (e.g., Reed 1994), but actually seem to be quite rare in Ute contexts.

Lithic reduction strategies during the Protohistoric era reflect the same concerns that shaped lithic reduction regimes during the preceding Archaic and Formative eras. That is, Protohistoric lithic technologists had to contend with the same economic constraints and environmental parameters that affected earlier peoples. The same problems had to be solved: obtaining and transporting raw toolstone, manufacturing suitable tools to fulfill their particular subsistence needs, and determining the best tool forms to accommodate the high mobility of their lifeway. There are some indications that the lithic reduction practices of other Numic groups (e.g., the eastern Shoshone) may have differed from those of the Ute, placing a greater emphasis on the sheer skill involved in the execution of finely made bifacial knives and projectile points (Mueller and Firor 2009). There are always exceptions to the rule, however, and the region abounds with examples of flaked stone knives and projectile points from presumably Ute contexts exhibiting outstanding craftsmanship. More importantly and as for other time periods, future research should focus on how mobility and the availability of toolstone shaped lithic technology during this period. Current data suggest that lithic reduction strategies during the Protohistoric era reflect mixed biface manufacture and core reduction (Reed et al. 2001) and were not as focused on biface production as might be expected given models of the relationship between lithic strategies and mobility (e.g., Kelly 1988; Parry and Kelly 1987). As in other time periods, it seems that when Protohistoric groups camped in proximity to an abundant source of toolstone they tended to employ an expedient technology that

relied heavily on minimally modified flake tools (e.g., Greubel and Cater 2001). Reed et al. (2001) also hypothesized that the heavier than expected emphasis on core reduction at the Protohistoric components excavated during the TransColorado project might be related to use of the horse (reducing transport costs) or the introduction of metal tools, which may have replaced formal (shaped) lithic tools for many purposes but not necessarily simple expedient tools (see also Horn and Greubel 1997).

Ground Stone

Another line of research needed for the Protohistoric era pertains to changes in ground stone implements. As indicated by data from the TransColorado Pipeline project, Ute ground stone assemblages may be characterized by higher relative frequencies of basin metates than other archaeological units, including the Archaic (Reed et al. 2001). This may indicate a greater emphasis on grinding dried seeds than exhibited by other units (see Adams 1999). Ute manos and metates also tend to be smaller than those of other archaeological units. If, as Diehl (1996) and Hard et al. (1996) argue, grinding efficiency is reflected by the size of ground stone implements, then Ute grinding implements were less efficient than those of other archaeological units. This may reflect decreased reliance on seed processing (cf. Greubel 2002), or greater emphasis on implement portability. The sample of complete Ute ground stone artifacts in the TransColorado study was rather small, however, and additional data could produce more tenable interpretations.

Trade Goods

The impacts of Euroamerican technology on Ute technology is another important line of research. With the establishment of Fort Roubideau near Delta, Colorado, at around 1830, Euroamerican goods probably became relatively common at Ute sites, though perhaps were seldom discarded. Metal cooking pots, needles, rifles, glass beads, tack, and sundry other Euroamerican artifacts began to displace their ceramic, stone, bone, and wooden counterparts in Ute material culture. The nature of tool and implement replacement was probably dependent on a variety of cultural factors, such as relative wealth, desire to maintain traditional practices, the use of Euroamerican trade goods in trading systems with other Native American groups for reasons of political gain or prestige, and so on. Currently, the process of the integration of Euroamerican artifacts into Ute material culture has scarcely been studied in the region (but see Horn 1988).

Subsistence

Until recently, Bettinger and Baumhoff's (1982) model of Numic subsistence was the primary subsistence model used in the region (Reed and Metcalf 1999). Bettinger and Baumhoff's model stated that Numic immigrants were able to supplant the indigenous occupants of the region by employing a more labor-intensive subsistence system, which included more extensive use of lower-ranked food resources. Subsistence models based on local archaeological data could not be formulated because of the dearth of excavation data for the Protohistoric era.

The TransColorado Pipeline Project produced a considerable amount of subsistence data pertaining to the Protohistoric-era occupation of west-central Colorado, which permitted the development of a new subsistence model. This model, developed by Reed et al. (2001), indicates that the Ute actually focused on highly ranked food resources, quite the opposite of Bettinger and Baumhoff's model. TransColorado project faunal data indicated that the types of animals procured by the Ute were more similar to those procured by Archaic peoples than they were to the Formative-era groups. Both the Archaic groups and the Ute made some use of rabbits, hares, and rodents, but concentrated mainly on deer. Other large animals, like bighorn sheep, pronghorn, elk, and bison, were less intensively hunted. The local Formative-era foragers, in contrast, focused more heavily on rabbits, hares, rodents, and birds; deer and other artiodactyls were less frequently taken. A review of subsistence data from excavated Ute sites across western Colorado and eastern Utah (Greubel 2002) supports the model formulated by Reed et al. (2001).

Although the Ute were able to focus their hunting on deer, they apparently found it necessary to intensively process deer bones. Frequencies of large mammal bone from Ute contexts that were too fragmentary to identify far exceeded that of other archaeological units. It is possible that the presence of ceramics in Ute material culture made it easier and more efficient to boil processed bone (Greubel 2002); Archaic groups would have had to employ stone boiling in fabric (e.g., pitch-coated basketry) or animal tissue containers.

TransColorado Pipeline Project macrofloral data also indicate that the Ute used a narrower range of plant foods than did the region's Formative-era foragers. In general, the wider the diet breadth, the more likely it is that lower-ranked food resources are incorporated. Ubiquity indices indicated that Formative-era foragers utilized more than three times the number of plant foods than did the Ute, and more than twice the number than the Archaic groups.

In short, the new subsistence model indicates that Ute subsistence practices were much more like those of Archaic groups than they were like regional Formative-era groups. The Ute were able to focus on a narrower range of plant and animal foods, as well as more highly ranked animal foods. As with most such models, it should be continually reevaluated as additional excavation data from Ute sites in the region are acquired.

Settlement Patterns

In general, models for Protohistoric settlement patterns are similar to those of the Archaic era (Reed and Metcalf 1999). Protohistoric groups are thought to have employed the "up-down" settlement pattern, wherein groups traveled between elevation zones to exploit the periodicity of food resource maturation. Summers may have been spent in the high elevations, and winters in the middle elevations where deer and elk over-wintered. The lowest elevations—below the pinyon and juniper woodlands—were probably primarily used in the early spring. It is also possible that the major river valleys were used in the winter, but archaeological data for those areas are scant because of modern settlement and land-use patterns. This model, though based on ethnographic works (e.g., Opler 1940), has by no means been convincingly demonstrated with archaeological data, because reliable indicators of season of site occupation are seldom recovered. Plant remains, especially seeds, tend to be poor indicators of season of occupation because they can be stored. The maturation dates of seeds found in archaeological contexts all too often are used to interpret season of occupation. Because all seeds mature during the warm season, many sites attributed to a specific season are attributed to the warm season. Winter habitations, therefore, have been underrepresented. Winter sites may have been occupied for longer periods than warm season sites, due to increased labor associated with construction of a structure capable of deflecting cold winds and snow. Winter sites should, therefore, tend to be more visible in the archaeological record than warm-season sites. There is no reason to believe that Protohistoric groups over-wintered outside of west-central Colorado. Faunal data, such as the presence of fetal bone or tooth eruption sequences, are more reliable indicators of season of occupation than are seeds. Future investigations should examine season of site occupation whenever possible.

In the UPAP study, Reed and Smith Gebauer (2004) examined data from the 13 excavated Protohistoric-era sites in their study area and placed the sites into four mobility categories using a polythetic classification scheme, based on Kent (1992), to discern patterns of actual and anticipated mobility. The details of their analysis will not be repeated here, but their conclusions indicate that none of the sites represent anticipated long-term, actual long-term occupation. One site was found to represent anticipated long-term, actual short-term occupation. The remainder are divided between anticipated short-term, actual long-term occupations and anticipated short-term, actual short-term occupations. These results seem to reflect high residential mobility during the Protohistoric era in the study area.

Reed and Smith Gebauer (2004) also examined the distributions of Protohistoric-era sites by elevation zone, comparing them to the distributions of Archaic and Formative components. They found that elevations between 6,000 and 7,000 ft (1,829-2,134 m) were far more intensively occupied by all groups than expected, and that Formative and Protohistoric sites in particular are clustered in that zone, with proportionally more Archaic sites at higher elevations.

Transitions

The end of the Protohistoric era (i.e., the late nineteenth century) is well documented by historic records. Many research questions, however, can be directed at the era's beginning. The immigration of Numic-speaking peoples into the region is strongly supported by linguistic evidence, but the timing of the immigrations is uncertain (Madsen and Rhode 1994; Reed 1994). An especially interesting question is whether Numic peoples arrived in the region before it was depopulated by Formative-era groups; current data do not strongly support this scenario. A few radiocarbon dates—possibly affected by the old wood problem—do suggest the possibility of cultural overlap. Even if there were little or no overlap, it is unlikely that the area had been fully abandoned. Consequently, the Numic immigrants probably encountered some unknown group in the area. It can only be hoped that future investigations will recover data that sheds light on the critical period of time between about A.D. 1200 and 1400.

Data Gaps and Needs

Major data gaps and needs for the Protohistoric era and Historic Native American period within the UFO study area are identified below. A later section of this document builds on the identified data gaps by defining specific research questions arising from them. Sites with standing or collapsed but still identifiable wickiups are especially important.

The Known Site Pool

- Sites or components identified as Protohistoric or Historic Native American represent 6.3 percent of all the known prehistoric sites in the UFO study area. Moreover, few of these have been excavated. In particular, few Historic Native American sites or components (only 28) have been identified. It is likely that many of the sites classified as "unknown prehistoric" actually date to the Protohistoric era. Additional inventory and excavation will be necessary to increase the sample of Protohistoric and Historic Native American sites in the study area. As with any archaeological unit, important Protohistoric-era sites will consist of those retaining contextual integrity, so that the distribution of archaeological remains can provide insight into the distribution of past human activities.

Chronology

- Accuracy in chronometric dating is especially important for Protohistoric-era components. Special care should be taken to employ the most accurate dating methods possible, focusing on AMS dating of annual and short-lived plants, thermoluminescence dating of ceramics, and dendrochronological dating of culturally stripped trees. Cross-dating of Euroamerican artifacts can also provide excellent dates for historic-period occupations.

Archaeological Units

- The concept of the "Protohistoric era" as a temporal referent for the period spanning the end of the Formative occupation of the region to the historic period should be reexamined.

- The Canalla and Antero phases merit further examination for usefulness; this research should focus on identifying differences between the two that are manifested in the archaeological record. A key to this endeavor will be to determine when the Eastern Ute acquired the horse in numbers substantial enough to change their lifeway.

Settlement Patterns

- Data—both inventory-level and from excavated contexts—are needed to test current models of mobility and settlement systems for the Protohistoric era, or to construct new models.

- It will be important to discern season of occupation for all future excavated sites.

- As suggested above, data relevant to the introduction of the horse into the region are sorely needed. Such data may allow the examination of research questions concerning how the equestrian lifestyle altered Ute settlement patterns.

Technology

- It is important to identify habitation structures (i.e., wickiups) dating to this era and collect data through surface recording and excavation pertaining to their methods of construction, environmental settings, dates of occupation, and associated assemblages of lithic artifacts and subsistence remains.

- More Protohistoric ceramics are needed for study from both surface and excavated contexts.
- Ground stone artifacts from excavated Protohistoric contexts can yield data relevant to studies of the role of plant foods and processing strategies in the subsistence regimes of this period.

- The effects of Euroamerican trade goods on indigenous material culture is poorly understood. Sites dating to the early historic period with both trade goods and lithic artifacts are particularly important.

Subsistence

- Current models suggest that local Protohistoric groups focused more on highly ranked food resources than did Formative groups. Additional direct subsistence data and careful analyses are needed to provide a foundation for constructing better models of Protohistoric subsistence strategies.

- Additional faunal data are needed to confirm whether Protohistoric groups more intensively processed animal bone than groups of other archaeological units.

CHAPTER 5. HISTORIC OCCUPATION OF THE STUDY AREA

Introduction

The following historic context for the UFO area is a summary utilizing O'Rourke (O'Rourke 1992) as a principle reference, though many other histories and data sources were utilized, including General Land Office (GLO) township plats, Historical Index information, and land patents data available at the BLM and on line, local histories, census data, various primary and secondary data sources, and historical newspapers. Reference has also been made to the historical archaeology context for Colorado (Church et al. 2007). The following historical information is organized by historic theme, but it should be noted that many themes overlap and are not exclusive.

Historic Native American

The Ute were the primary aboriginal inhabitants of western Colorado, including the area encompassed by the UFO. The UFO area is considered to be within the traditional homeland of the Tabeguache or Uncompahgre band (Callaway et al. 1986:339). The Uncompahgre Utes may have been in direct contact with the Spaniards by at least the early 1600s (Callaway et al. 1986:354). It appears that the Ute populations may have been sufficiently dispersed that Old World diseases may have not traveled through Ute groups as quickly or with as much devastation as in more densely populated areas (Malouf and Findlay 1986:504-506).

Southern and Eastern Ute bands raided Spanish and Pueblo settlements in New Mexico and Arizona in the seventeenth and eighteenth centuries; they stole horses from the Spanish and various other goods from the Pueblos (Callaway et al. 1986:354). Early peaceful contact between the Utes and the Spanish were probably restricted to New Mexico. Annual fairs at Taos and Santa Fe were centers of trade with Indians. The Utes were well known for their exceptionally well-prepared deer hides, which they traded with other tribes and with Spanish colonists of New Mexico (Callaway et al. 1986:345). Raids on Spanish settlements by Utes were also frequent events. This raiding and trading resulted in the Ute Indians being well-mounted over much of their range, though in some areas Utes with fewer horses continued their earlier pedestrian hunting and gathering lifeway (Hafen and Hafen 1954:51; Smith 1974). The Ute obtained horses from the Spanish, possibly as early as 1640. By 1776, Utes in Colorado had a highly developed tradition of horse use. The use of the horse for transportation had a remarkable effect on Ute culture. The Ute became mounted raiders, able to expand their range and exploit various resources in an efficient manner. The horse enabled the Ute to travel over the Rocky Mountains and onto the eastern plains where they hunted buffalo and acquired many traits commonly ascribed to equestrian Plains Indian groups, including the use of teepees and their mode of attire (Callaway et al. 1986:354; Malouf and Findlay 1986:500; Smith 1974).

Adoption of an equestrian lifestyle resulted in a more complex society. Extended family groups were replaced by band organizations more suited to rapid mobilization facilitated by horses. The horse enabled the Ute to expand their sphere of influence and interaction, thereby exposing themselves to previously unknown outside cultural influences. Acquisition of the horse resulted in new trade relationships between the Ute and other Indian groups. The most influential interaction was between the Ute and Spanish traders. Most of the early Spanish trading expeditions were unauthorized and are, therefore, virtually undocumented. It is clear, though, that trade was conducted and that European-manufactured goods began to be assimilated into the Ute culture (Malouf and Findlay 1986:500).

By right of conquest, most of the present western United States was the domain of the Spanish from the late 1500s until Mexican Independence in 1821. The territory north of the New Mexican settlements was little known until the middle 1700s and officially off limits to the New Mexican citizenry in order to keep peace with the Utes. Despite being illegal to travel in the northern frontier, the opportunities to trade with the Ute and search for mineral wealth were too

great a draw. Unauthorized exploration seems to have taken place and word began to filter back to the settlements of gold and silver deposits to the north. Three expeditions by Juan Maria de Rivera were undertaken from 1761 to 1765 to explore the northern frontier and to attempt to verify the rumors of mineral wealth. Much of Rivera's time was spent investigating the La Plata Mountains, but he also traveled northward to at least the confluence of the Gunnison and Uncompahgre rivers near present Delta, Colorado and perhaps entered the Paradox Valley of western Montrose County.

The Rivera expeditions set the stage for the Dominguez-Escalante Expedition of 1776, intended to find a passable route between Santa Fe and Monterey, California. With the knowledge of acquired by the Rivera expeditions. Dominguez and Escalante had some foreknowledge of western Colorado and had guides familiar with some of the route (Malouf and Findlay 1986:501; Smith 1974). For instance, they knew that north of New Mexico they would encounter "Tebehuchis [Tabeguache], Muhachis [Moache] and Sabaguana" Utes (Creer 1947:5; Hafen and Hafen 1954:68). The party was able to easily make their way into southwestern Colorado following the route of what would later become the Spanish Trail. They entered the area by way of present Mancos and followed the Dolores River northward where they were joined on the Dolores River by two *genizaro* half-breed Indians from Abiquiu (Warner 1995). They then crossed the Uncompahgre Plateau into the Uncompahgre Valley and continued northward across the Colorado River, then westward into Utah. Once in Utah, they cut their journey short and returned to New Mexico through the canyons of southeastern Utah and the Hopi mesas of northern Arizona.

The knowledge of the northern frontier provided by the Rivera and the Dominguez-Escalante expeditions apparently stimulated expansion of trade with the Ute. In 1775, Governor Pedro Fermin de Mendinueta published a proclamation prohibiting any citizen, *genizaro*, or Indian to trade in Ute territory. Governor Francisco Trebol Navarro reissued the proclamation in 1778, because the initial proclamation had been widely disregarded. According to Navarro, some traders were mistreating the Utes and he was fearful of warfare with the Indians. Exposure to the early traders made the Utes opposed to any attempts at missionization. Infractions of the trade ban were numerous. In 1783, a group of Abiquiu citizens was prosecuted for trading with the Utes. Vicente Serva was tried in 1785 and Cristoval Lovato in 1793 for violating the ban (Hafen and Hafen 1954:262; Weber 1971:26-27).

In the early 1800s, Spanish restrictions against trade were apparently slackened, reflecting an official change in policy where trade with Indian groups on New Mexico's northern frontier was seen as a necessity in order to create a buffer against American encroachment. Part of this was an attempt by the Spanish to make the Indians dependent upon them through trade. As part of this new diplomacy, the Spanish began encouraging trade expeditions (Weber 1971:28). As trade with the Utes developed, two major travel routes from New Mexico into Utah became established: the main Spanish Trail and the northern branch of the Spanish Trail. The rapidity of the development of the routes is demonstrated by the journey of Manuel Mestas, a 70-year-old *genizaro* that had served the Spanish as an interpreter to the Utes for 50 years, when he traveled to the Utah Lake area in 1805 and recovered stolen horses from the Timpanogos Utes, presumably following the route of the main Spanish Trail (Creer 1947; Hafen and Hafen 1954:85). When Jose Rafael Sarracino spent three months in Ute territory in central Utah in 1811, he found the Indians already in possession of Spanish-made knives, razors, and awls (Weber 1971:25). By 1813, Utes as far away as the Sevier River in central Utah were accustomed to trading with the Spanish (Hafen and Hafen 1954:267; Smith 1974).

The Utes were eager to trade with the Spanish and were particularly interested in procuring horses, though they also obtained other items such as blankets, knives, beads, and agricultural products. The Spanish were equally eager to trade in order to bolster their meager economy. Slaves were most highly desired, but tanned hides, furs, and dried meat were also received from the Utes (Hafen and Hafen 1954:261). In 1812, a Spanish law was passed prohibiting Indian slavery. This

did little to curb the trade, and pelts and slaves continued to be the major items of exchange with the Utes (Hafen and Hafen 1954:263-264).

In 1821, Spain was overthrown and Mexico gained its independence. Remaining restrictions on trade were terminated, and trade with the Ute expanded. Coincident with these events was expansion of the fur trade in the southern Rocky Mountains and the inclusion of numerous Americans in the fur trade. Before the opening of the Santa Fe Trail in the 1820s, New Mexico was rather poor in manufactured items; the items the Spanish and Mexicans had to trade with the Utes were not particularly varied, largely consisting of agricultural products. Consequently, the Utes eagerly welcomed American traders, who had superior trade goods (Weber 1971:27-28).

Americans attempted to trap in Spanish territory prior to Mexican Independence, but the number of Americans trapping in the region was certainly small and they were always in danger of arrest. Fur trade posts that supplied trappers and traded directly with the Indians for hides and furs were set up at Fort Uncompahgre near present Delta and in northeastern Utah. The Utes were regular participants at the annual trapper rendezvous that began in 1825 and continued for 16 years (Hafen and Hafen 1954:86). As a result of their close association with fur trappers and traders, the Utes became particularly well armed. Fusils, or smoothbore muskets, were the standard trade gun of the major fur trading companies. They decreased in popularity only in the 1860s with the increased sale of shotguns, cheap muzzle-loading rifles, and breech-loading carbines (Malouf and Findlay 1986:505).

The increased contact and fur trade was probably the cause of remarkable culture change amount the Ute. According to Malouf and Findlay (1986:504):

> …mountain men commonly engaged in trade with Indians, usually for beaver pelts but sometimes for food as well. This doubtless had a profound effect on traditional economies. Goods acquired from Anglo-American fur companies in some cases supplanted elements of aboriginal material culture. Trade also exposed Indians to liquor, which was used by traders to facilitate deals, as well as to firearms. Acquisition of such items probably had an impact akin to that of the horse by helping to undermine ancient patterns of subsistence, social organization, and social control.

During the fur trade period, the Spanish Trail was extended to California. Once the connection was made, annual trade caravans traveled between New Mexico and California. Although the trade caravans seem to have ended with the Mexican-American War, travel on portions of the Spanish Trail continued into the 1850s. The annual trade caravans facilitated trade of sheep, horses, textiles, foodstuffs, and slaves between the two areas. The highly mobile Utes were able to provide both horses and slaves to the Spanish by raiding widely from the eastern plains to California and into New Mexico and Arizona. Intertwined with raiding, Ute prosperity was tied to control of the Utah-Colorado portion of the Spanish Trail (Sprague 1957:68).

The slave trade continued after Mexican independence, mainly by New Mexican traders who would set out with some trade goods, trade these with Utes or Navajos for horses, then trade the horses for slaves as far as California. These slaves would be traded to the Mexican Californians for horses, goods, or cash. Slaves obtained on the way back would be sold in New Mexico (Hafen and Hafen 1954:268). Horse-mounted Utes took an active role in the slave trade and were depended upon as sources of slaves by traders. These Utes raided adjacent Indian groups that did not have horses, such as the Southern Paiute and Gosiute of Utah and Nevada (Callaway et al. 1986:354; Malouf and Findlay 1986:503). Women and children were sold to the Spanish in New Mexico for use as domestic servants and shepherds. Occasionally, fur trappers would engage in the slave trade as well. Antoine Robidoux took several Indian women and young Indians from Utah to New Mexico as slaves in 1842; he also kept several for his own use (Hafen and Hafen 1954:270).

The discovery of gold at Cherry Creek near Denver in 1858 resulted in a rush to Colorado that brought miners and other settlers into conflict with the Ute. Miners entered the San Juan Mountains at Bakers Park (Silverton) in 1860, but it was not until the early 1870s that a real mining presence was made in southwestern Colorado. The Treaty of 1868 between the Utes and the federal government reserved all of western Colorado for the Ute as their reservation, but did not anticipate the expansion of mining in the following years. Trespasses onto the Ute Reservation were made by miners in the San Juan and La Plata Mountains in the early 1870s that caused considerable conflict with the Ute. To alleviate the problem, the Brunot Treaty of 1873 was negotiated which resulted in the ceding of the San Juan and La Plata Mountains by the Ute. Further encroachment on the reservation and the culmination of hostilities with the Meeker Massacre at the White River Agency in 1879 led to the removal of the Northern Utes to reservations in Utah and restriction of the Southern Utes on a narrow strip of reservation land along the southern border of Colorado.

The Meeker Massacre resulted in the negotiation of the 1880 treaty with all of the Ute bands in Colorado because the political climate in Colorado was such that the removal of all Utes from the state was desired (Kappler 1904:180-186). The removal of the White River Utes from Colorado as punishment for their involvement in the Meeker Massacre was a given. Ouray realized that treaty negotiations would diminish the size of the reservation of the Uncompahgre Utes, but he did not believe they would result in the removal of the band from Colorado. After negotiating the treaty in 1880, Ouray died, leaving the conditions of the treaty open to interpretation by the commission designated to define where the new reservation for the Uncompahgre band would be. It was expected that the new reservation for the Uncompahgre Utes would be at the confluence of the Grand and Gunnison Rivers (present day Grand Junction), but at the suggestion of Otto Mears, and without the strong presence of Ouray to say otherwise, this location was bypassed and reservation lands were selected in northeastern Utah at what became the Ouray Reservation, adjacent to the Uintah Reservation. The Uncompahgre band was removed to the reservation in Utah in 1881, and their vacated lands were made available to settlement in 1882 (Kappler 1904:205).

Transportation

Indian Trails

Initial travel into and through the UFO area was by trails used through the millennia by Native Americans. Several of these trails are noted on GLO maps in the region and it is probable that trails shown on maps prepared in the 1880s, particularly those dating to 1881 and 1882, were Indian trails, even though they may not be specifically identified as such. GLO plats prepared as late as 1892 include routes designated as Indian trails. It is very probable that many of the early travel routes utilized in the UFO originated as Indian Trails.

An Indian Trail is shown on GLO maps crossing the Uncompahgre Plateau that follows the West Fork of Horsefly Creek above the Uncompahgre Valley and crossing the divide of the Uncompahgre Plateau south of Paxton Reservoir, and then branching west of the crossing of the Dave Wood Road (Figure 52). The eastern portion of this route to the Uncompahgre River is shown as a wagon road on the 1884 and 1885 GLO maps, showing the transition that many Indian trails probably took as more formal travel routes during the 1880s and 1890s. One of the branches west of the Dave Wood Road continues westward into the headwaters of Clay Creek. It is possible that the trail continued into the San Miguel Canyon along Clay Creek or followed what is now the course of the Sanborn Park Road to the San Miguel River. The second branch continued northwestward across the upper reaches of Horsefly Creek and its northern tributaries as far as the crossing of the road between Pinon and the Paradox Road.

Trails on the western side of the Uncompahgre Plateau in the vicinity of the San Miguel River show Wright's Spring, southeast of present Norwood, as being a place of convergence (Figure 53). This includes an Indian trail that passes Wright's Spring to Pinion Spring, about 1 mile

northwest of Norwood, and continues north of Naturita Canyon. The eastern portion of this route is noted as the Placerville to Naturita Trail on an 1886 GLO. The trail to Placerville may have entered the San Miguel River canyon by way of Beaver Canyon. From the vicinity of Wright's Spring, trails ran southward on routes similar to the route later taken by the Dolores-Norwood Road. Greager (1990:164-165) notes that an Indian Trail crossed Naturita Canyon in the Shenandoah/Redvale area.

An early trail from the Upper North Fork Valley from Bardine, below Paonia Reservoir, to Crested Butte was known as the Old Crested Butte Trail. This was reportedly part of the Old White River Trail used by the Utes (Clock 2002:279). It is possible that the trail continued northward across the Grand Mesa and joined with the trail across the Colorado River that continued to the White River.

The trail across Black Mesa to the Maher/Crawford area used by Sam Hartman to bring cattle into the North Fork Valley from Sapinero was a Ute trail. The route was subsequently known as the Hartman Trail (Rockwell 1945:25).

A Ute Indian Trail led onto Kelso Point probably from the head of Kelso Creek in the Escalante Creek drainage system. A well-defined Ute trail ran across Long Point in the headwaters of Escalante Creek on the Uncompahgre Plateau (Musser 1986:131).

Dominguez and Escalante Route

Initial exploration of southwestern Colorado was by Juan de Rivera, who reached the confluence of the Gunnison and Uncompahgre Rivers in 1765. Information from Rivera's explorations facilitated the Escalante-Dominguez Expedition in 1775, which followed the easternmost portion of what was later to be known as the Old Spanish Trail from Santa Fe, through Abiquiu, and northwestward into southwestern Colorado to the Dolores River. Later, the route continued into the Spanish Valley to a crossing of the Colorado River, near present Moab, to the Green River and over the Wasatch Mountains to Utah Lake, then turned southwestward toward St. George, across the desert to Las Vegas, and into southern California. The route was not fully explored until 1829, after Mexico gained independence from Spain, and it was not until the early 1830s that commerce by the route between Santa Fe and Los Angeles commenced. Dominguez and Escalante's route was different from that of the later Spanish Trail in that they did not head into Utah from the Dolores River. The following description is summarized from Sanchez (1997). The Dominguez-Escalante Expedition entered what is the UFO by way of the Dolores River East of Steamboat Hill into the Little Gypsum Valley. They continued northward toward Andys Mesa and then turned eastward into Dry Creek Basin entering the West Fork of Dry Creek southeast of Spectacle Reservoir. The followed Dry Creek to the San Miguel River and crossed the river northwest of present day Naturita. It is possible that the expedition made a foray northwestward through the Paradox Valley toward the La Sal Mountains, but their route to the Uncompahgre Valley continued up the San Miguel River to Pinon, and then either followed Cottonwood Creek along the route of Old Highway 90 through Ute or continued along the San Miguel River to Horsefly Creek to the vicnity of the confluence of Red Canyon and Horsefly Creek. They then followed Horsefly Creek onto the Uncompahgre Plateau west of Paxton Reservoir and then continued over the divide to the West Fork of Horsefly Creek, which they followed to the Uncompahgre River about 6 miles south of Montrose. The expedition followed the Uncompahgre River northwestward to the confluence of the Gunnison at present Delta. They then turned northeastward and followed the Gunnison River and the North Fork of the Gunnison River to Leroux Creek at present day Hotchkiss. Continuing up the North Fork of the Gunnison, the expedition turned northward up Hubbard Creek, which they followed past the confluence of Willow Creek onto the Grand Mesa on their way to the Colorado River and beyond into Utah.

Northern Branch of the Spanish Trail/Salt Lake Wagon Road

A variant of the Spanish Trail route, known as the Northern Branch of the Spanish Trail began at Taos and traveled northward through the San Luis Valley, over the Rocky Mountains by way of Cochetopa Pass, into the Uncompahgre Valley by way of Cerro Summit (Figure 52), then followed the Uncompahgre and Gunnison Rivers to the Colorado River near present Grand Junction and continued northwestward to its junction with the main Spanish Trail before it crossed the Green River. The trail crossed to the western side of the Uncompahgre River between Montrose and Olathe and crossed to the eastern side of the Gunnison River at a ford just west of the confluence Roubideau Creek near the conjectured location of Fort Uncompahgre, whereupon the route continued northwestward on the uplands above the river on a course nearly identical to that of U. S. Highway 50 (Figure 50). The Northern Branch of the Spanish Trail was likely a primary route used during the fur trade. The first known use of the route by trappers was by a large combined party led by Thomas "Peg Leg" Smith, which probably included groups led by William Huddart, Etienne Provost, Francois Leclerc, and Antoine Roubidoux that headed north from Taos and spread out over western Colorado and explored the Green River drainage in Utah (Weber 1971). Antoine Robidoux built a trading post, Fort Uncompahgre, near the confluence of the Gunnison and Uncompahgre Rivers, in 1828. He used the route to supply Fort Uncompahgre and Fort Uintah in the Uintah Basin of Utah. His importance to the trail is underscored by Cochetopa Pass also being known as Roubidoux's Pass. Whereas the main Spanish Trail was used by annual trade caravans of pack animals between Santa Fe and Los Angeles and was never passable by wagon, the Northern Branch may have allowed wagon traffic by Roubidoux for supplying his forts. The Northern Branch of the Spanish Trail probably was also important as a more direct route to the eastern plains of Colorado from Western Colorado and Utah and may have facilitated more direct travel to Bent's Fort and St. Louis. As Roubidoux had important family and business connections in both St. Louis and New Mexico, the Northern Branch of the Spanish Trail was of utmost importance to his successful trading operations from the late 1820s to 1844. Use of the route was also very important for the trade relations of the Ute, who actively raided and traded from California to the Colorado's eastern plains.

The first use of the Northern Branch of the Spanish Trail for immigrant travel to California was by former trappers William Pope and Isaac Slover and their families who traveled by wagon over the route in 1837 (O'Rourke 1992:30). Marcus Whitman traveled the portion of the trail through Colorado on a return trip from his mission in Walla Walla, Washington to the east in 1842, stopping at Fort Uncompahgre along the way (Mowry 1901).

With the end of the fur trade and destruction of Fort Uncompahgre in 1844, the trail saw little use in the late 1840s and 1850s. The Gunnison Expedition followed the route in 1853 during their survey of the region to determine if a feasible route for a railroad could be found. They were guided by Antoine Leroux, who was familiar with the route as a result of having trapped in the region. After passing through Colorado into Utah, the expedition was attached by Paiute Indians in the Sevier River Valley and Gunnison and several other of his party were killed (O'Rourke 1992:37). Following on the heels of the Gunnison Expedition were two parties of California immigrants that took advantage of the Gunnison Expedition leading the way, confirming that the route could be traversed with wagons. Close behind and following the same route as the Gunnison Expedition was John C. Fremont on a privately funded expedition also to find a central railroad route. Lt. Edward Beale traveled along the route, also in 1853, on his way to serve as the Superintendent of Indian Affairs for California and Nevada (O'Rourke 1992:39). In 1857, the route was used by military troops reconnoitering the region during the period of conflict with the Mormons, known as the Mormon War, in the event that a military invasion of Utah was necessary. A military force under the command of Captain Randolph B. Marcy and led by scout Jim Baker used the route heading east in late 1857. Intent on resupplying themselves from Fort Union, New Mexico, the group was caught in the snow near Cochetopa Pass and barely survived (O'Rourke 1992:39). An immigrant party of 50 wagons traversed the route on their way to California in 1858, accompanied by a military escort led by Colonel William W. Loring (O'Rourke 1992:39). It was during this time that the trail may have become known as the Salt Lake Road.

The extent to which the trail saw use 1859 through the 1870s is not known, but was probably minimal. With the discovery of rich mineral bodies in the San Juan Mountains in the early 1870s, some travel by miners from Salt Lake probably took place. With the growth of mining in the San Juan Mountains, particularly after the Brunot Agreement in 1873 that removed the San Juans from the Ute Reservation and opened them to mining, use probably increased. The most notable group of these travelers was led by O. D. Loutsenhizer in 1874 that included Alfred Packer. Although Loutsenhizer and others stayed the winter in the Uncompahgre Valley at the behest of the Utes, a small group that included Packer continued into the mountains, became waylaid in the deep snow, and was cannibalized by Packer, the lone survivor. When the Los Pinos Indian Agency was moved from the Cochetopa Pass area to the Uncompahgre Valley in 1875, the trail, referred to as the "Old Salt Lake Road" had evidently deteriorated significantly and considerable work was necessary to enable wagons to traverse the route (Bond 1875a).

With the growth of mining in the San Juan Mountains, in the middle 1870s, supplying the camps became a major concern. The new camp of Ouray was particularly isolated. The first miners appeared in the Ouray area in 1875, and by 1876, a thriving town was in existence. To supply the new town, citizens looked to Salt Lake City for their supplies. This resulted in the establishment of the Salt Lake Wagon Road, which incorporated a new section of road from Ouray northward to an intersection with the Northern Branch of the Spanish Trail in the Montrose area (Figure 52) to the railroad at Salina, Utah and the Salt Lake Valley.

The only newspaper item found referring to the Salt Lake Wagon Road was from the *Ouray Times* on July 28, 1877. Del Hardy had arrived from Salt Lake City after having used the route and reported that it was 560 miles long and very difficult, having numerous steep hills and long distances where it was not possible to get good water. In many places, water could only be obtained by digging for it and then it was quite alkaline. He reported that eight wagons filled with flour had left Salt Lake City in mid March and were expected to arrive in Ouray in early August (*Ouray Times*, July 28, 1877). The hardships endured in supplying Ouray by the Salt Lake Wagon Road only had to be endured for a short time as railroads in Eastern Colorado were quickly extended southward and, in 1878, the D&RG reached Alamosa, which became the main shipping point for supplies to the mining communities of the San Juan Mountains. Still, the route of the Salt Lake Wagon Road was the primary local travel route in the Uncompahgre Valley as the region became settled following the removal of the Utes from Western Colorado in late 1881 and the towns of Montrose, Delta, and Grand Junction were established in 1882. Although the D&RG extended their tracks from Gunnison to Montrose, Delta, and Grand Junction in 1882, quickly pushing on to Salt Lake City, local travel was by wagon utilizing the existing Salt Lake Wagon Road in many places for travel between towns. It was not until construction of improved roads for automobile traffic in the 1910s that much of the old wagon road route was finally abandoned.

Government Road

The Government Road was reportedly built by U. S. military troops to connect the Los Pinos Agency to the White River Agency. It is uncertain when it was constructed, but it was after the 1873 Brunot Agreement. A portion of this road is shown on the GLO map north of Montrose (Figure 52) as though it was coming from Cerro Summit, probably coinciding with the Northern Branch of the Spanish Trail and the Salt Lake Road, so may have been built prior to the removal of the Los Pinos Agency to the Uncompahgre Valley. The portion of the road north of present Delta traveled up the Gunnison River to the vicinity of present Austin, where it crossed the river then followed Surface Creek and Milk Creek to Military Park on the Grand Mesa (Austin 1988:13) (Figure 51). Another portion of the road north of the Colorado River is known to have traveled up Rifle Creek on its way to the White River Agency near Meeker (Mehls 1982). The Government Road was probably the route taken during the 1879 Meeker Massacre when negotiators were sent from the Los Pinos Agency to rescue the hostages taken onto the Grand Mesa by the White River Utes. Military Park on the Grand Mesa probably takes its name because of the road. The GLO maps show that by 1883 or

1884, a road branched off of the Government Road north of Delta into the North Fork Valley to Paonia and into the Muddy Creek area. This connected with what was known as the Hartman Trail, by which Sam Hartman brought cattle into the Crawford and Maher area from Gunnison by way of Sapinero (Figure 51 and Figure 52). The trail crossed Black Mesa from Sapinero along the general route followed by State Highway 92. Sam Hartman's Ranch was just west of Maher.

Trails and Roads over Dallas Divide to the Telluride and Naturita Areas

Early road building in the region focused upon reaching newly established mining communities in the San Juan Mountains. In 1873, the Del Norte and San Juan Toll road was built from Del Norte up the Rio Grande River through Antelope Park and over Stony Pass into Cunningham Gulch to Silverton. The next year, in 1874, Enos Hotchkiss and Otto Mears built the Saguache and San Juan Toll Road from Saguache to Lake City and then to Silverton by way of Cinnamon Pass. Neither of these roads actually entered the project area, but they served as a catalyst for additional road building in the area. In 1875, rich silver deposits were discovered on the upper Uncompahgre River at Ouray. To provide access to the new town, the Ouray and Lake Fork Wagon Road Company was founded to build a road from Ouray to the Lake Fork of the Gunnison River and onward to connect to the Saguache and San Juan Toll Road. The company was purchased by Otto Mears, and the road was built northward several miles down the Uncompahgre River toward the present town of Montrose. To complete the connection with the Saguache and San Juan Toll Road, Mears built the Lake Fork and Uncompahgre Toll Road from Barnum, near present Gateview, on the Lake Fork of the Gunnison across the headwaters of Pine Creek, Blue Creek, and the Cimarron River to the Uncompahgre Valley near the present location of Colona (O'Rourke 1992:69). The actual route of this road is difficult to ascertain but may have run up Veo Creek and over the divide to Onion Creek and down to the Uncompahgre River in the vicinity of the present Buckhorn Road near Colona where the Los Pinos Agency was situated.

The first mention of a road in the Dallas Divide area was in the Articles of Incorporation for the San Miguel Toll Road Company on June 18, 1877. (Ouray County Courthouse, County Clerk's Office, Deed Book 1, Pages 62-63). The San Miguel Toll Road was described as beginning at or near the Ute trail on Alder Creek. It crossed the San Miguel Range, Deep Creek Canyon above the Ute Trail crossing, and then the mesa to Navik Gulch near Remine's Cabin at the foot of San Miguel Park near present Telluride.

The Certificate of Incorporation for the Ouray and Utah Toll Road Company on May 3, 1878 (Ouray County Courthouse, County Clerk's Office, Book C-1, Page 4) says they planned a road from a point on the divide between Dallas and Leopard Creeks that crossed the San Miguel River and headed northwest to the Paradox Valley area. They described their point of beginning as being where the Ouray and San Miguel County Road crosses what is now called Dallas Divide. The route of the Ouray and San Miguel County Road is not known. The Dallas and Alder Creek Toll Road Company was incorporated on April 8, 1879 to build a road from the forks of Dallas Creek, west of present Ridgway, over Dallas Divide to Hastings Ranch on Alder Creek, then down Alder Creek to Leopard Creek, which it followed to the San Miguel River (Ouray County Courthouse, County Clerk's Office, Book C-1, Page 32) (Figure 53). The New Boston and Placerville Toll Road Company was incorporated July 6, 1880 to build a road from the head of Leopard Creek down Leopard Creek to the San Miguel River, then up the San Miguel River, the South Fork of the San Miguel, and the Howard's Fork of the San Miguel River through the town of Ophir toward Silverton to the top of Ophir Pass. They also planned to extend a road to present Telluride (Ouray County Courthouse, County Clerk's Office, Book C-1, Pages 105-106). Portions of these earlier routes seem to have been made part of the road of the Dallas and San Miguel Toll Road Company, incorporated May 31, 1881 by Otto Mears, Ira Y. Munn, and Charles Munn. The road was described as beginning at the confluence of Dallas Creek and the Uncompahgre Rivers at the town of Dallas just above present Ridgway Reservoir. It crossed Dallas Divide to the head of Leopard Creek, then ran down Leopard Creek to the San Miguel River, then went up the San Miguel River to the town of San Miguel near

present Telluride (Ouray County Courthouse, County Clerk's Office, Book C-1, Page 160) (Figure 52 and Figure 53). A road up Fall Creek is shown on the 1882 GLO map of the area branching off of the road up the San Miguel River to Telluride with a trail continuing onto Wilson Mesa.

The routes described agree fairly well with what is shown on the GLO maps of the area from 1881 and 1882. These show a road beginning in the vicinity of Dallas on the Uncompahgre River up Dallas Creek and then the East Fork of Dallas Creek past the cabins of Fred Mayol and Charles and L. S. Trenchard. The road then turned west across the East Fork of Dallas Creek and ran up the northern side of Cottonwood Creek and over Dallas Creek to a stage station at Noel. The 1881 GLO does not show the later road down Leopard Creek, but does show the road continuing to the Hasting's Ranch (Alder Creek Post Office) along Alder Creek on Hastings Mesa along the general route currently followed by the Last Dollar Road. From Hasting's Ranch, a trail continued down Alder Creek, but the road continued southward running on the eastern sides of Last Dollar Mountain, Whipple Mountain, and Hawn Mountain and crossed Deep Creek where it coincided again with the current route of the Last Dollar Road down Remine Creek to the San Miguel Valley about 2 miles west of San Miguel and 4 miles west of Telluride. This route was difficult and poorly maintained, particularly after the route down Leopard Creek was built to Placerville. From Placerville, the main road followed the San Miguel River to Telluride, but a route downstream along the San Miguel River was also in place by 1881, according to the GLO maps of the area (Figure 53). This road ran along the eastern side of the river past Specie Creek, where a trail joined the road, toward Saltado Creek. Beyond this point, the route was a trail in 1881 that exited the San Miguel Canyon in several places. The first, and probably the most important part of departure from the canyon was at the mouth of Beaver Creek. Once exiting the canyon to the west, the trail branched with the western branch going to Wright's Spring and continuing westward above the north rim of Naturita Creek to present Naturita, and the southwestern branch joining another trail running south from Wright's Spring along the general route of the present Dolores-Norwood Road into the Lone Cone area and probably extended as far south as the Big Bend of the Dolores River at present Dolores (Figure 53). The second exit from the San Miguel Canyon was from the southwestern side of the canyon toward Norwood about 1 mile northwest of Clay Creek. Once out of the canyon, the trail headed south to Wright's Spring. The junction of trails at Wright's Spring indicates that it was a very important place during early travel in the area. Indications are that the trails exiting the San Miguel Canyon and dispersing in different directions from Wright Springs originated as Indian trails. A trail continued up the San Miguel River beyond the exit near Clay Creek and probably ran past the later site of Pinon and reached Naturita.

Dave Wood Road

When the Denver & Rio Grande (D&RG) railroad built its line to the Uncompahgre Valley in 1882, Dave Wood moved his freighting operation to the new town of Montrose, which he used as his base of operations for shipping to and from the towns and mines around Ouray and Telluride and into the Paradox Valley area. To provide better access to Telluride and the west ends of Montrose and San Miguel counties, he constructed a wagon road west from Montrose from Spring Creek Mesa branching from the Paradox Road (present State Highway 90) just east of the present Oak Grove School (Figure 52). The road ran southwest along Tappan Gulch past the Eckerly Sawmill on what is now the Uncompahgre National Forest. It continued northwest of Paxton Reservoir on Horsefly Mesa and ran southward into Gutshall Gulch to Haskill on Leopard Creek, whereupon the road joined the toll road to Placerville west of Dallas Divide (Figure 50 and Figure 52). From this point, Wood was able to continue to Placerville where he could continue south to Telluride and other points in the San Juan Mounains or west to Norwood, Naturita, and Paradox. The Dave Wood Road continued to serve as a major travel route even after Dave Wood moved his freighting operation to the town of Dallas in 1887, when the D&RG constructed a branch line to Ouray.

Paradox Road

The Paradox Road was one of the earliest roads in Montrose and Ouray Counties. It appearance on GLO plats show that it was in existence by 1884. The road connected the Paradox Valley to the town of Montrose and was probably built to get Paradox Valley cattle to the nearest railhead for export (Mehls 1982:111-112). The removal of the Utes from western Colorado opened large tracts of land to grazing. The rush for grazing land in the San Miguel and Dolores River drainages, Paradox Valley, Lone Cone area, and Horsefly area of the Uncompahgre Plateau appears to have been quite intense. The impetus for the cattle industry was the rise of mining in the San Juan Mountains. Cattle exports by rail from Montrose were substantial into the early 1890s and the Paradox Road was a vital link between the grazing areas west of the Uncompahgre Plateau and the railroad (McDonald and Horn 1987:140). The western portion of the Paradox Road generally followed the route of present State Highway 90 through Naturita but then headed northward through the later town of Nucla (Figure 53). Beyond Nucla, the route continued northeastward along the route of present County Road 25, which becomes Forest Road 503 and then turned eastward on the general route of what is now Forest Road 603 to the Antone Spring/Iron Spring area in the vicinity of the present Divide Road. Continuing eastward, the route crosses present Highway 90 and joins Forest Road 402 for a southern dip and then departs the road to the northeast across the head of Pryor Creek then down Devinny Canyon and over Beaver Hill to Montrose (Figure 50 and Figure 52). The eastern portion of the road between Antone Springs and Montrose was surveyed in 1884 as the Montrose & Tabeguache Road.

Montrose to Cameville Road

A road to Cameville branched off of the Paradox Road west-northwest from Nucla through Second and Third Parks and down Tabeguache Creek to the San Miguel River where Cameville was situated (Figure 53). GLO maps of the area show the road to have been in existence by 1886, but the route was probably in existence by 1883 when the mining claims along the river at Cameville were being worked and when the Club Ranch established its headquarters there.

Other Roads

Travel south of Montrose along the Uncompahgre River was rather treacherous, particularly during spring runoff, and several rather poor routes existed in the 1880s. The most formal of these routes left Montrose along the route of current Chipeta Road and stayed on the western side of the Uncompahgre River, bearing slightly westward up Horsefly Creek and over Log Hill, and joining the road over Dallas Divide near the junction of Pleasant Valley Creek and Dallas Creek. A branch of the road continued along the Uncompahgre River from the division point on Horsefly Creek to Colona. The route from Montrose to Colona was surveyed as the Southern side Road on March 27 and 28, 1884. A feeder road from the Los Pinos Agency onto Log Hill followed the general route of present Ouray County Road 1.

Sawmills on the Uncompahgre Plateau resulted in the construction of two important roads on the eastern side of the plateau. A road following the general route of the Transfer Road (Forest Road 508) was in place by 1884. It connected Olathe to the Antone Spring/Iron Spring area on the Divide where the Darling Sawmill operation was situated. The Wagner Sawmill was situated on the Uncompahgre Plateau between the Dry Fork of Escalante Creek and Cottonwood Creek. A road from the sawmill ran down Sawmill Mesa above the Dry Fork of Escalante Creek and then branched in two directions. One branch dropped into Escalante Canyon 3 miles above Escalante on the D&RG along the Gunnison River. The second branch led to Roubideau and, eventually, to Delta.

Construction of the Hanging Flume resulted in the construction of two roads in the late 1880s. One was a road constructed from the sawmill on Carpenter Ridge to the flume that was built down Red Canyon and crossed the Dolores River at a natural ford near the northern end of the Hanging Flume (Peterson 1963:131). The road is still evident as a narrow, cut-and-fill route in Red

Canyon with iron wagon parts, pieces of large chain links, and lumber with cut nails present in places (Pfertsh 2005). The second road was constructed by Buddecke & Diehl of Montrose to get lumber and supplies to the flume. The route is not exactly known, but is known to have begun off of a road past Elisha Darling's sawmill on the Uncompahgre Plateau, that reportedly crossed the divide at Cold Springs, north of what is now Columbine Pass, wound through the pine timber, crossed Spadlin and Tabaguache Parks, then dropped down the Dolores River" (Peterson 1963:128). The portion of the road from Montrose over the divide to present-day Nucla was likely the same as the Paradox Road and its continuation westward toward the flume was likely along the route that first reached Cameville and was known as the Montrose and Cameville Road. Beyond that point, toward Atkinson and Mesa Creeks, the route is not known. The end of the flume, known as Hydraulic, was also reached by trails and a road down the North Fork of Mesa Creek from the Divide of the Uncompahgre Plateau by 1903. This road connected to Whitewater along the route of the current Divide Road that drops into Unaweep Canyon. Also connecting to the Paradox Road, was a road from the vicinity of Antone Spring on the divide of the Uncompahgre Plateau to Pinon by way of the community of Ute.

A wagon road between Naturita and Lavender is noted on an 1892 GLO running southwestward along Long Draw into Dry Creek Basin (Figure 53). Lavender was a post office in Dolores County along Disappointment Creek.

Railroads

By the late 1870s, railroads had reached deep into Colorado's Rocky Mountains to tap the mineral wealth of the region. The D&RG and Denver, South Park & Pacific railroads had reached Leadville and both railroads decided to extend their lines to Gunnison. The D&RG crossed the Continental Divide over Marshall Pass and reached Gunnison in 1881. The DSP&P decided to tunnel through the Continental Divide. The construction of the Alpine Tunnel was costly and time consuming, resulting in the DSP&P not arriving in Gunnison until 1882. By that time, the Ute had been removed from western Colorado, opening the way for the D&RG to extend their line to the new towns of Montrose, Delta, and Grand Junction in the Uncompahgre and Grand valleys in 1882. Not stopping there, the D&RG extended their lines west from Grand Junction to Salt Lake City, thereby connecting Denver to Salt Lake City. Stations or sidings within the project area between Montrose and Gunnison were Cimarron, Cerro Summit, Cedar Creek, and Fairview (Figure 52). North of Montrose stations or sidings were Mead, Menoken, Roe, Frost, Olathe, Chipeta, Watsons, Beet Spur, Delta, Campbell, Roubideau, Stratter, Escalante, Huff, Dominguez, Broughton, Peeples (Peoples), Lehritter, and Bridgeport (Figure 50). The line west from Grand Junction was converted to standard gauge in 1891, when Grand Junction was connected by a standard gauge line coming down the Colorado River that year. The section of line from Gunnison through the Uncompahgre Valley to Grand Junction remained narrow gauge until 1906. The Gunnison to Montrose portion of the line was abandoned and removed in 1949.

Mining in the San Juan Mountains in the late 1870s stimulated the D&RG to extend their service in that direction. A line was built from Pueblo over La Veta Pass to Alamosa in 1878. For a short time, Alamosa became the closest point of supply to the mines of the San Juan Mountains. Continuing southward, the railroad was extended to Antonito in 1880 and then through Chama and Pagosa Springs to the new railroad town of Durango in 1881. The following year, the line was extended to Silverton. Mining communities on the northern side of the San Juan Mountains were still without rail service and depended upon wagon roads for supplies and ore transport. In 1887, the D&RG constructed the Ouray Extension from Montrose (Figure 52). Stations or sidings between Montrose and Ouray were Vernal, Colona, Eldredge Dallas, Ridgway, Portland, and Lotus. The section of line from Ridgway to Ouray was abandoned in 1950. The portion of the line from Montrose to Ridgway was made standard gauge in 1953. Most of this line was abandoned and removed in 1972.

The fertile North Fork of the Gunnison valley rapidly developed as an important fruit-growing region in the late 1880s and early 1890s and was known to have extensive coal deposits. To tap these resources, the D&RG constructed the North Fork Branch in 1902, with the line extended to coal mines above Somerset in 1903 (Figure 51). Stations or sidings between Delta and end of line past Somerset were Saunders, Read, Saxton, Austin, Cory, Payne, Rogers Mesa, Lazear, Hotchkiss, Bell Creek, Elberta, Gibson, Coburn, Paonia, Apple Spur/Roberts/Ted's Place, Bowie, Juanita Junction, Somerset, Hawksnest Mine, and Bardine.

To further tap the mineral resources of the San Juan Mountains, Otto Mears constructed the Rio Grande Southern (RGS) Railroad between Ridgway and Durango in 1890 and 1891, with a spur into Telluride (Figure 52 and Figure 53). The route of the Rio Grand Southern Railroad, constructed in 1890 and 1891, was first described in the Articles of Incorporation for the San Juan Railroad Company on April 13, 1887. The company was formed by Edward R. Murphy, Joseph W. Gilluly, Robert F. Weitbrec, Andrew S. Hughes, William R. Marshall—all of Denver and several of whom were closely associated with the D&RG. The planned main route described for the railroad is identical to that taken by the RGS. It was described to begin in Durango at the D&RG, to head west to a point in the Dolores River Valley near Big Bend (present Dolores), then up the Dolores River to Rico. From Rico, the route would continue over the divide between the Dolores and South Fork of the San Miguel Rivers (present Lizard Head Pass) and continue past Trout Lake, after which it would follow the South Fork of the San Miguel to its junction with the San Miguel River. From there, it would follow the San Miguel River to a point near Leopard Creek (present Placerville), then follow Leopard Creek to the summit of the divide between Leopard Creek and Dallas Creek (Dallas Divide). From this point, the route would follow the valley and slopes of Dallas Creek to a connection with the (then) proposed route of the D&RG in the Uncompahgre Valley (present Ridgway). Several other branches were proposed at the time, including a line from a point near the mouth of the South Fork of the San Miguel east to Telluride (Ouray County Courthouse, County Clerk's Office, Book C-1, Pages 321-323). Stations and sidings along the RGS from Ridgway to Vance Junction within the project area are Jay, Hagen, Deti, Hillside Spur, Pleasant Valley, Valley View, Dallas Divide, Noel, Leopard (Leopard Creek), Sams, Leonard (Haskell's Spur), Brown, Omega, Placerville Spur, Placerville, Fall Creek (Seymore, Silver Pick, Primos, Sawpit, Wilson, Vanadium (Newmire), Deep Creek (Tank Creek), and Lime (Collman 1990).

Government

Exploration

The Gunnison Expedition, in 1853, was the first government exploration and survey expedition to enter western Colorado. The expedition was one of several sent out throughout the west intent on identifying a feasible railroad routes through the mountains. The Gunnison Expedition followed the Northern Branch of the Spanish Trail into the Uncompahgre Valley and northward across the Colorado River near present Grand Junction and into Utah (O'Rourke 1992:37). Following the same route as the Gunnison Expedition a short time later in 1853, John C. Fremont passed through western Colorado on a privately funded expedition also intent on finding a central railroad route. Although not on a formal exploration expedition, Lt. Edward Beale traveled to California along the route, also in 1853, to serve as Superintendent of Indian Affairs for California and Nevada (O'Rourke 1992:39). Military troops passed through western Colorado along the same route in 1857, during the Mormon War. Their intent was to familiarize themselves with the area in the event an invasion of Utah was necessary. As part of this mission, Captain Radolph B. Marcy led troops eastward over the route in late 1857 to obtain needed supplies from Fort Union, New Mexico (O'Rourke 1992:39). In 1858, troops led by Colonel William W. Loring accompanied a California-bound immigrant party of 50 wagons over the route through western Colorado (O'Rourke 1992:39).

More than 15 years passed before another government-sponsored survey expedition entered the region. In 1874 and 1875, a government expedition of topographers and scientists examined and mapped western Colorado under the direction of Ferdinand V. Hayden. A team led by Henry Gannett surveyed the Uncompahgre and Gunnison drainage areas, producing the most comprehensive maps of the region up to that time (O'Rourke 1992:62).

Land Survey and Distribution

The Ute Indians were removed from Western Colorado in September 1881, resulting in an immediate rush for prime agricultural lands. In order for lands to be officially entered upon for acquisition from the public domain, surveys were quickly conducted by the General Land Office, dividing the land along township and range lines and then surveying the section subdivisions. Areas most conducive to settlement were surveyed first, with several GLO plats completed in 1881 and 1882. Surveying continued as additional lands became settled with most areas within the UFO area being surveyed by 1892. To facilitate land acquisitions from the public domain under the several entry options available, a federal land office was established in Montrose on September 1, 1888. Prior to that date, entries in the region were handled by the land offices in Lake City or Gunnison. The Gunnison Land Office was merged with the Montrose Land Office in 1907.

Indian Agencies

The Los Pinos Indian Agency, established in the Cochetopa area south of Gunnison in 1869, was moved to the Uncompahgre Valley in 1875. The location that was chosen was on the western side of the Uncompahgre River just north of the present town of Colona (Figure 52). A farm was established for Ouray several miles north on the southern edge of what is now Montrose. In addition to being compensation for the services of Ouray, the farm was intended to encourage other Utes to take up an agricultural lifestyle. The agency personnel included the agent, a blacksmith, a farmer, a carpenter, and a physician. A sawmill was established to cut lumber for the agency buildings, which included residences for the employees, a school, hospital, cook house, a storehouse for goods and supplies, and a blacksmith shop. A corral and stable were also built. With the removal of the Utes to a reservation in Utah, the agency was closed in late 1881.

U. S. and State Military

Military forays into the region were infrequent, but occasionally troops were present in the Uncompahgre Valley to assist in affairs at the Los Pinos Indian Agency. A greater military presence followed the Meeker Massacre in late 1879. Up until that time, the nearest military installation was at Fort Garland in the San Luis Valley, and troops were dispatched from there onto the reservation when necessary. Military troops were sent to the Uncompahgre Valley when word of the Meeker Massacre was heard to keep order and to rescue the captives taken from the White River Agency onto the Grand Mesa. Troops remained in the Uncompahgre Valley and a permanent military installation, the Cantonment on the Uncompahgre, was established a few miles north of the agency in May 1880. Troops were initially stationed in the area to act as a deterrent to additional uprisings and participated in the removal of the Ute from western Colorado in late 1881 under the direction of General Ranald MacKenzie. Although no longer really needed, the military post remained in place and was renamed Fort Crawford in 1886. It was not until 1890 that Fort Crawford was abandoned (Hart 1965).

During World War II, German and Italian prisoners of war were used for farm labor throughout the state. Camp Carson was the main Prisoner of War Camp in the state and prisoners were sent from there to branch camps, including camps in Montrose and Delta. When and for how long these camps were occupied is not known. The Prisoner of War labor camp in Montrose was in the old CCC camp buildings about 1 mile north of town. It is not known where the prisoners were housed in Delta.

Land Management

Overuse of the public domain for grazing and logging and a need to protect watersheds led to the establishment of Forest Reserves in heavily timbered areas. The Battlement Mesa Forest Reserve was established in 1892 and included much of the Grand Mesa. Land was withdrawn for the Gunnison and Uncompahgre National Forests in 1905, and a portion of the former Battlement Mesa Forest Reserve became the Grand Mesa National Forest. The three forests have been managed as a single unit, the Grand Mesa, Uncompahgre, and Gunnison National Forest since 1973. Lands in the public domain not included in the National Forests continued to be available for settlement through the General Land Office. In 1934, enactment of the Taylor Grazing Act further regulated grazing on the public domain under the jurisdiction of the Grazing Service. In 1946, the General Land Office was merged with the Grazing Service to form the Bureau of Land Management.

Public Works

Uncompahgre Project – Gunnison Tunnel

The removal of the Utes from most of western Colorado in late 1881 led to immediate settlement of the Uncompahgre Valley and expansion of the D&RG line from Gunnison through the newly founded towns of Montrose, Delta, and Grand Junction in 1882. Farming and ranching quickly took hold. The use of irrigation in the Uncompahgre Valley was vital to increase the fertility of the semiarid valley, but the water that could be obtained was limited. Locally financed irrigation companies constructed several large canals and about 30,000 acres of land were irrigated, but water shortages during the summer months severely impacted agricultural production. A possible solution to the problem came in 1890, when F. C. Lauzon proposed that water be diverted from the Gunnison River. It was not until 1894 that money was allocated to have the U. S. Geological Survey investigate the possibility of diverting the river, resulting in the conclusion that that a tunnel would have to be constructed through the geologic uplift of the Black Canyon. Although a formidable task, it was not thought impossible, but beyond the capabilities of local entities. In 1900, William W. Torrence led a survey into the Black Canyon to determine a location for the tunnel and the feasibility of its construction. Spurred by the findings, the Colorado Legislature passed the Gunnison Tunnel Bill in 1901 and appropriated $25,000 for tunnel construction. Within a year, only 900 ft of the tunnel was completed, and the project was abandoned due to lack of funds. The project received new life in 1902, when President Roosevelt signed the Reclamation Act into law, and the Gunnison Tunnel project was transferred from state to federal hands in 1903. With the transfer, the project became known as the Uncompahgre Project and was one of the first five projects of the fledgling Reclamation Service. The project was considered important because it was estimated that nearly 171,000 acres could be made agriculturally productive with water from the project. Work resumed on the project in July 1904, but after four months, the contractor for the tunnel went bankrupt. It was determined that the tunnel was situated poorly, so a new location was selected 5 miles farther upstream. Even with the new location, tunnel construction was plagued with difficulties and was not completed until 1909. Upon completion, the Gunnison Tunnel was 30,650 ft. long and capable of carrying 1,300 cubic ft. per second (cfs) of water. The total cost for the tunnel was nearly 3 million dollars. The opening of the Gunnison Tunnel was presided over by President William H. Taft on September 23, 1909, indicating its importance to both the Uncompahgre Valley and the nation as an example of a federal improvement project opening new land for agricultural settlement (Collins et al. 1981; Dudley 2001).

While the tunnel was under construction, the Reclamation Service began to build large-volume canals to transport water from the tunnel throughout the Uncompahgre Valley. The first of the large-volume canals to be built was the South Canal. The South Canal and the Gunnison Tunnel were constructed concurrently and were both completed in 1909. The South Canal is 11.4 miles long and carries up to 1,010 cfs of water directly from the opening of the Gunnison Tunnel to a point on the Uncompahgre River about 9 miles southeast of Montrose. The canal provides water to lateral canals near the outlet of the tunnel, directly supplies up to 172 cfs of water to the West Canal, and

increases the volume of the Uncompahgre River from which additional canals were supplied. Taking water from the Uncompahgre River downstream of the South Canal as part of the Uncompahgre Project system are the Montrose and Delta Canal, the Loutsenhizer Canal, Selig Canal, Ironstone Canal, East Canal, and the Garnet Canal. A system of 438 miles of lateral canals and ditches has been constructed off of these canals that distributes water to about 73,600 acres of agricultural land for a distance of 34 miles on both sides of the Uncompahgre River from south of Montrose to just north of Delta. Although the acreage brought under cultivation was more than twice what was possible before the project was built, it was considerably less than estimates at the time the project was initiated.

The Reclamation Service also acquired 110 existing private canals and ditches throughout the Uncompahgre Valley. Once purchased, the Reclamation Service began to upgrade and reengineer the ditches and canals to improve their efficiency and incorporate them into the expanded irrigation system. This included replacing and standardizing water control features and extending and interconnecting existing canals and ditches with several new canals and laterals to irrigate previously unirrigated areas of the Uncompahgre Valley.

As required by the Reclamation Act, an association of landowners who would benefit from the irrigation project was formed in 1903. This association was required reimburse the government for the cost of the irrigation system. In addition, the association was also responsible for the operation and maintenance of the system. The newly formed organization met on May 5, 1903, referring to itself as the Uncompahgre Valley Water Users Association (UVWUA). By 1925, the Uncompahgre Project was nearly completed; it was transferred to the UVWUA for operation and maintenance in 1932 (Clark and Simonds 1994). Since then, the organization has maintained and operated the system under the oversight of the Bureau of Reclamation.

The building of the Uncompahgre Project is recognized as the key historical event in the rise of agricultural development of the Uncompahgre Valley. The Uncompahgre Project is a massive water distribution system comprising many parts. The Project consists of the diversion on the Gunnison River, the Gunnison Tunnel, and major and minor canals and ditches for distribution of irrigation water. When the tunnel was first constructed, enough water was diverted to irrigate 73,600 acres of arable land on both sides of the Uncompahgre River in the Uncompahgre Valley (Collins et al. 1981). The canals and ditches of the Uncompahgre Project shaped the landscape through which they were built, resulting in a settlement pattern and agricultural landscape dating to the 1903 to 1932 period of significance for the project that is the dominant characteristic of the Uncompahgre Valley at the present time.

Smith Fork Project – Crawford Reservoir

The Crawford area was served by small ditches and reservoirs, but suffered from late-season water shortages. Initial surveys for the feasibility of a federal Reclamation project for the Crawford area took place from 1936 to 1938; further studies were done in 1947. The project was included as part of the Colorado River Storage Project in 1956, but funding for Crawford Dam was not appropriated until 1960. The dam was completed in 1962 and included a diversion on the Smith Fork of the Gunnison River to supply the reservoir. The main distribution canal from the reservoir was the Aspen Canal, also completed in 1962, and its lateral the Clipper Canal (Latousek 1995). The reservoir also supplies the Grand View Canal, originally constructed in 1895 to transport water from the Smith Fork (Omvig 2009).

Fruitgrowers Project – Fruitgrowers Reservoir

Fruitgrowers Reservoir began as a small dam constructed by the Fruit Growers Ditch and Reservoir Company in 1898 and gradually increased in size through 1936. In 1937, the dam failed, flooding the town of Austin and damaging portion of the North Fork Branch of the D&RG and

Highway 92. Assistance for rebuilding the dam was sought from the Bureau of Reclamation and funds were obtained from the Emergency Relief Appropriation Act of 1937. Work on the new dam was started in 1938 and completed in 1939 as the Fruitgrowers Project. Labor for the project was from the Works Progress Administration and the Civilian Conservation Corps (Simonds 1994).

Dallas Creek Project – Ridgway Reservoir

The Dallas Creek Project had its origins following World War II when expansion of the Uncompahgre Project was contemplated. By 1951, the Dallas Creek Unit of the Gunnison River Project was proposed and became a part of the Colorado River Storage Project in 1956. The Dallas Creek Project was authorized in 1968 and environmental studies were completed in 1976. Bids for construction were awarded in late 1979 and work began in 1980. Ridgway Dam was completed in 1986 and the reservoir began filling in 1987, with it reaching full capacity in 1990. Water from the project augments that from the Uncompahgre Project and supplies municipal and industrial water for Montrose, Olathe, and Delta (Simonds 1999).

Paonia Project – Paonia Reservoir

Water storage in the North Fork of the Gunnison River watershed was first investigated by the State of Colorado in 1934; this was taken up by the Bureau of Reclamation in 1936. The need for additional water storage was because of frequent late-season water shortages. A variety of dam sites were identified through the 1930s and 1940s, with the Paonia Dam site settled upon in 1951 to enable enlargement of the Fire Mountain and Overaland canal systems. The project was initially authorized in 1939 and then reauthorized in 1947 when plans were revised. After further revisions, the project was reauthorized in 1956 as part of the Colorado River Storage Project. Paonia Dam was constructed between 1959 and 1962, and modifications of the Fire Mountain Canal, originally built from 1949-1953, were also completed between 1959 and 1962 (Simonds 1995).

Bostwick Park Project – Silverjack Reservoir

The Bostwick Park Project was undertaken to provide reliable late-season irrigation to Bostwick Park. The project was first considered in 1951, and a feasibility study for the project was submitted in 1961. The project was authorized as part of the Colorado River Storage Project in 1964. Construction of Silverjack Reservoir was begun in 1966 and completed in 1971. Water stored in the reservoir is released into Cimarron Creek and diverted into the Cimarron Canal 2.5 miles below the dam. The Cimarron Canal carries the water to Cerro Summit where it continues in the Hairpin and Vernal Mesa ditches. The Cimarron Canal and Hairpin and Vernal Mesa ditches were existing irrigation canals incorporated into the project. Water from the Vernal Mesa Ditch is then diverted into the 3.6-mile-long Bostwick Lateral to take water to Bostwick Park by way of an 18-in.-diameter siphon. The Bostwick Lateral was constructed in 1974 and 1975. Water from the project irrigates 5,608 acres of land (Linenberger 1999).

Aspinall Unit, Colorado River Storage Project – Crystal Reservoir

The Colorado River Storage Project was authorized in 1956 with the Aspinall Unit as one of its constituent parts. Construction of Morrow Point and Blue Mesa Dams were approved in 1959, and work on both dams was initiated in 1961. Blue Mesa Dam was completed in 1966 and Morrow Point Dam was completed in 1968. The power plants for each dam were put on line in 1971. Crystal Dam was approved in 1962. Initial work for Crystal Dam took place between 1964 and 1966, but actual dam construction did not begin until 1972. The dam was completed in 1977 and its 28,000-kW generating plant was put on line in 1978 (Redmond 2000).

Public Service: Civilian Conservation Corps Camps and Projects

During the Depression of the 1930s, numerous Civilian Conservation Corps camps were established in the region to do public works projects. The Bureau of Reclamation established Camp BR-23 to assist in making improvements to the Uncompahgre Project irrigation system in the Uncompahgre Valley, including clearing silted canals, replacing wooden water control structures with concrete structures, reinforcing canal banks with riprap, lining canals with concrete, and exterminating rodents. The camp was initially established 0.5 mile east of Montrose in June 1935. It was moved to a location 1 mile north of Montrose in 1941 and closed in May 1942. A side camp from the Montrose Camp was assigned temporarily to the Black Canyon of the Gunnison in 1936 to work on the road to the East Portal on the Gunnison River (Pfaff 2001). In addition to its work on the Uncompahgre Project, members of this camp provided assistance to the town of Austin when it was flooded by the breaking of the dam on Fruitgrowers Reservoir on June 13, 1937. Additional crews from Division of Grazing camp DG-10 helped restore sanitation facilities and cleaning and repairing irrigation ditches (Marshall 1981:108). In 1940, Camp BR-71 moved to Montrose from Oklahoma to work with Camp BR-23.

The Division of Grazing established three camps for the purpose of doing range improvements, building reservoirs and developing springs for stock water, building fences, doing flood-control work, building livestock and truck trail, controlling rodents, and surveying and posting stock driveways. Camp DG-10 shared facilities with Camp BR-23 0.5 mile east of Montrose beginning in 1935 and lasted through at least 1937. In addition to their regular projects, crews from Camp DG-10 worked on constructing the road, stone retaining walls, culverts, and overlook on the northern side of the newly designated Black Canyon of the Gunnison National Monument. They also constructed a dormitory in conjunction with the WPA to house workers on the road. Additional work was conducted at the Monument in 1938 by CCC workers on loan from the Bureau of Reclamation Camp BR-23. Other Division of Grazing camps in the region were Camp DG-11 near Redvale, which operated from 1935 to 1941, and Camp DG-125 at Paradox, which operated from 1938 to at least 1941. In 1940, Camp DG-125 worked on the Carpenter Ridge and Spring Creek Truck Trails, the Uravan Road, the Ketchemup Stock Trail, Monogram Reservoir, other stock reservoirs, and drift fences.

The U. S. Forest Service operated several camps on the Uncompahgre and Grand Mesa National Forests. These camps constructed roads, built Ranger and Guard Stations, built recreational facilities, and conducted other forestry work. On the Grand Mesa, Camp F-16 was located at Skyway and Trickle Park from 1934 to at least 1937; Camp F-17 was at Lands End in at least 1933; and Camp F-67 was at Coon Creek in 1940 and 1941. On the Uncompahgre National Forest, Camp F-27 was initially at Whitewater in 1933 and moved onto the Uncompahgre Plateau in 1934 and Camp F-48 was based from Norwood beginning in 1934.

Transportation

The increase in automobile use prompted road improvements. The call for improved roads first came from bicyclists and was later taken up by motorists. In 1902, the Colorado Auto Club was formed. They and the Colorado Chapter of the Good Roads Movement, formed in 1905, convinced the Colorado legislature to establish the Colorado Highway Commission in 1909 (Salek 2004). The Commission had counties submit maps of their most traveled roads. The commission would then view the routes and designate certain ones as being part of the state highway system. The federal government became involved in developing an interconnected highway system in 1916 and began providing funding to states. The Colorado Highway Department was established in 1917 to be the recipient of those funds and to allocate their use. The road between Placerville and Norwood was one of the first roads in the state to receive federal money for improvement. Early major travel routes were named. The Rainbow Route ran from Pueblo to Montrose, then to Delta and Grand Junction, where it terminated at the Midland Trail, which was a transcontinental route that passed

east to west through Colorado. The Pikes Peak Ocean to Ocean Highway was another transcontinental route that followed basically the same route as the Midland Trail through western Colorado. The San Juan Way was the name given the route from Montrose south through Ouray, Silverton, and Durango and continuing to New Mexico (Salek 2004).

A 1916 State Highway map shows that the San Juan Way was called State Highway 13; it is currently US Highway 550. The continuation of the route from Montrose to Grand Junction, formerly part of the Rainbow Route, was called State Highway 12. The portion of the Rainbow Route from Gunnison to Montrose was designated State Highway 20. Both of these former Rainbow Route sections are now part of US Highway 50. State Highway 20 continued westward over what was later named State Highway 90 through Pinon, Naturita, Bedrock and Paradox, and onward to the Utah border. State Highway 44 ran from Naturita through Norwood and Placerville to Telluride; a spur of State Highway 44 went over Dallas Divide from Placerville to Ridgway. State Highway 46 ran from Sapinero through Crawford and Hotchkiss to Delta. By 1919, this route had changed and State Highway 63 was designated from Hotchkiss to Somerset and over Kebler Pass to Crested Butte and Gunnison. Another route, State Highway 64 ran from Bardine, near Somerset, over McClure Pass to Carbondale (Salek 2004).

Road numbers were redesignated in 1923 to the system currently used. Highway 62 from between Placerville and Ridgway was originally the spur of State Highway 44. It was paved by 1949, except for a section over Dallas Divide, which was paved in 1954. Highway 145, from Cortez to Naturita by way of Lizard Head Pass, Placerville, and Norwood, was originally part of State Highway 44. The section between Pacerville and Norwood was paved by 1947 and the remainder was paved by 1964. Highway 90 was the western portion of the original State Highway 20 from Montrose to Naturita and onward to the Utah state line through Bedrock and Paradox. Certain portions of this road still exist as paved roads west of Naturita and in the Montrose area. The portion of the route over the Uncompahgre Plateau to Naturita is no longer part of the state highway system and is a seasonal dirt road. Highway 141 northward from Naturita to Whitewater was part of the state highway system in the 1920s; it was paved in 1965. The route southwestward from Naturita to Dove Creek was designated State Highway 80 in the 1920s; it was made an extension of Highway 141 in 1968. It had been paved in the Slickrock area in 1961 and was paved in its entirety by 1965. Highway 133 from Hotchkiss through Paonia and over McClure Pass to Carbondale was originally part of State Highway 46. By 1964, the only portion of the route that was not paved was over the pass; the pass was paved in 1978. The Bowie by-pass was built in 1991. The route currently known as Highway 65, leaving Highway 92 and crossing the Grand Mesa by way of Cedaredge and Mesa, had been designated as a state highway by 1919. It was paved to Cedaredge in 1947 and from Cedaredge to Mesa in the mid-1960s. Highway 92 from Delta through Orchard City and Crawford to Blue Mesa Dam was originally designated State Highway 46. It was paved half way to Hotchkiss in 1939. Paving was completed to Hotchkiss in 1946, then extended to Crawford in 1956, and to Maher in 1965. The highway was realigned around Blue Mesa Reservoir in 1966 and its final section paved in 1975. Two additional State Highways were added to the system in the area beginning in 1939. Highway 347 to the Black Canyon of the Gunnison National Park was paved by 1960 and Highway 348 between Delta and Olathe, passing through Pea Green, was changed to its current route in 1954 and paved in 1963 (Salek 2004).

Settlements

Following are brief histories of communities or settlements in the UFO area that had post offices. Some of these have grown into sizable and lasting towns of residential and economic importance. Others were rural post offices or small communities that have ceased to exist or have retained small populations. The summaries are arranged alphabetically by county. The locations of the historic settlements in the study area are shown in Figure 50-Figure 53.

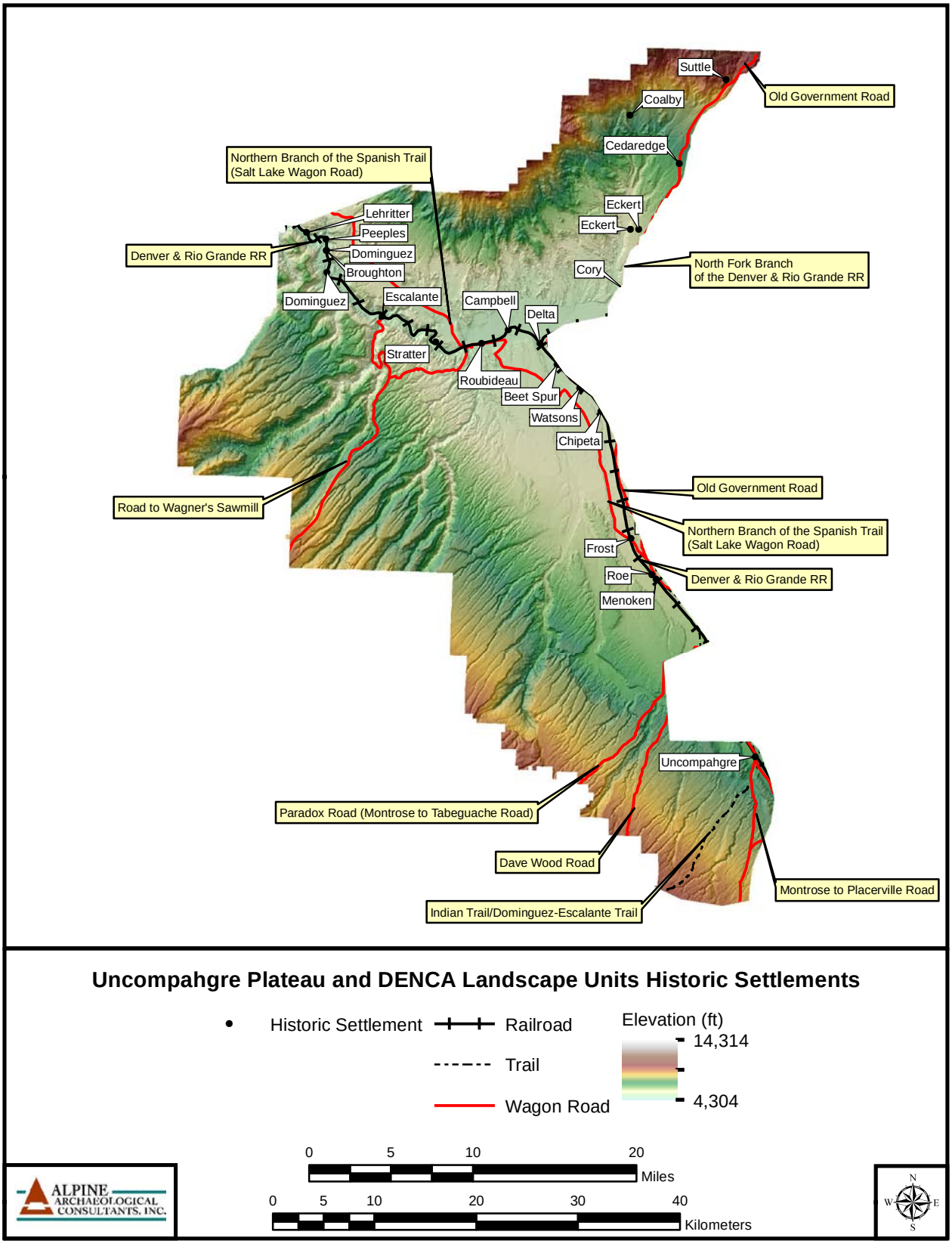


Figure 50. Historic settlements, railroads, roads, and trails in the DENCA and Uncompahgre Plateau LUs.

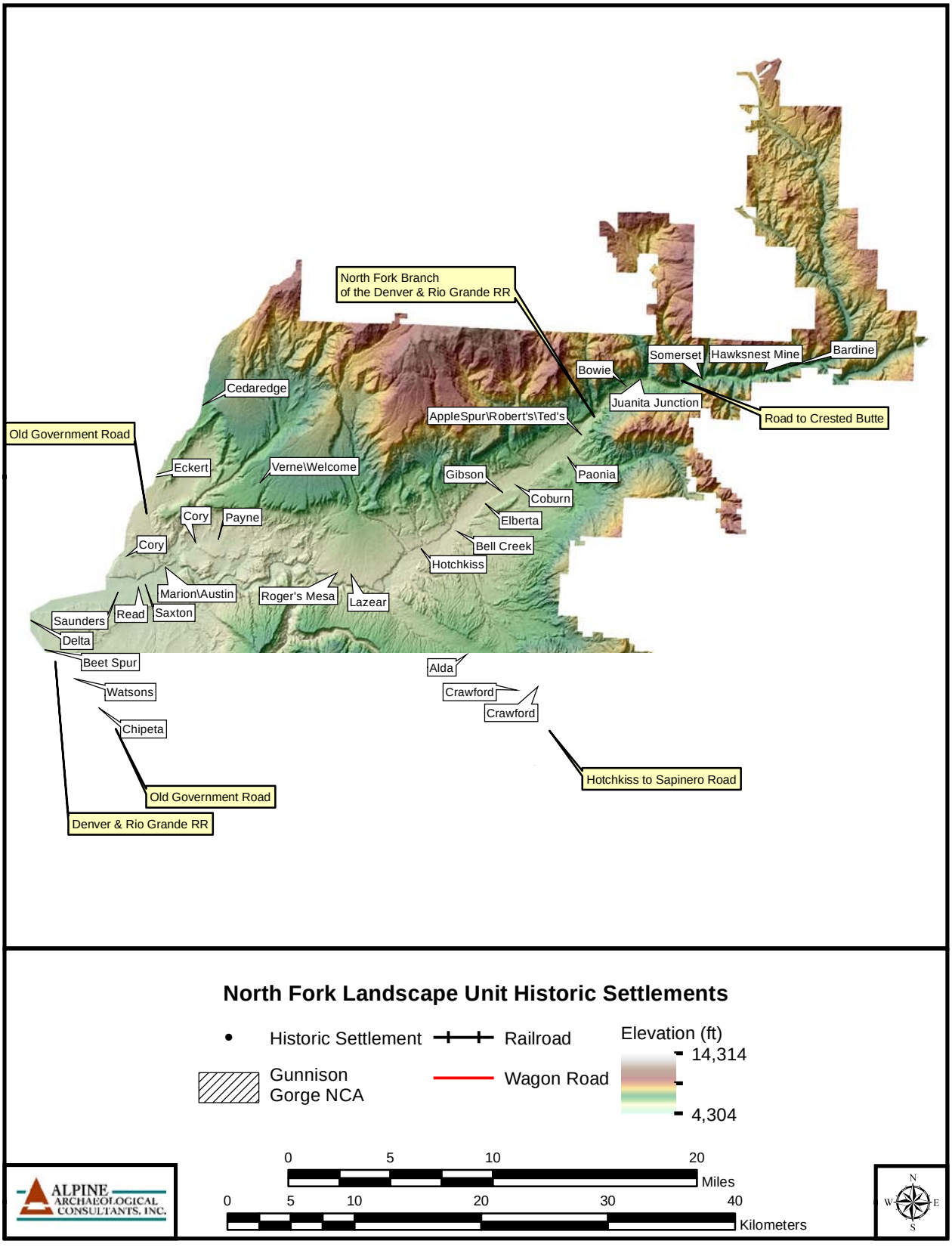


Figure 51. Historic settlements, railroads, roads, and trails in the North Fork LU.

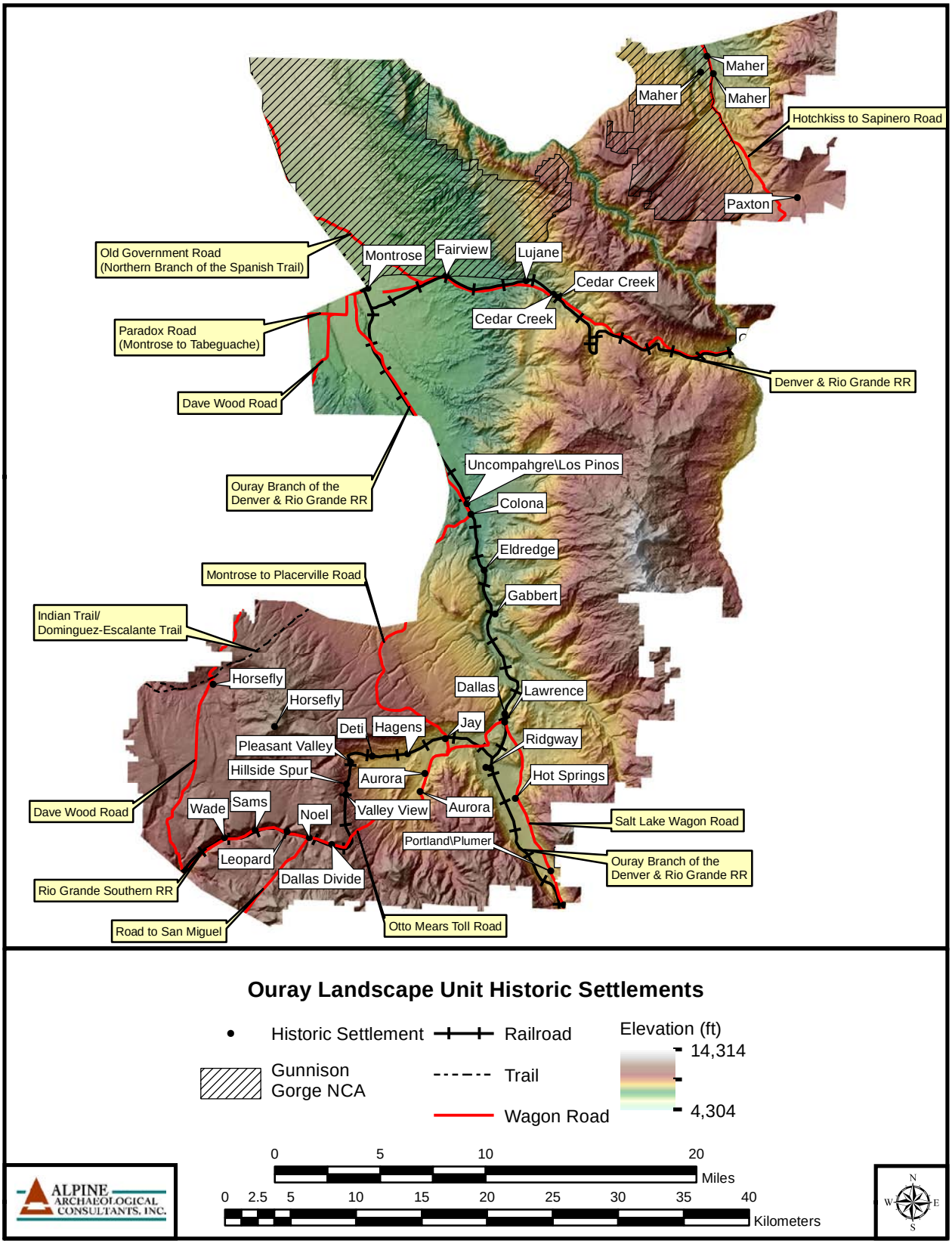


Figure 52. Historic settlements, railroads, roads, and trails in the Ouray Area LU.

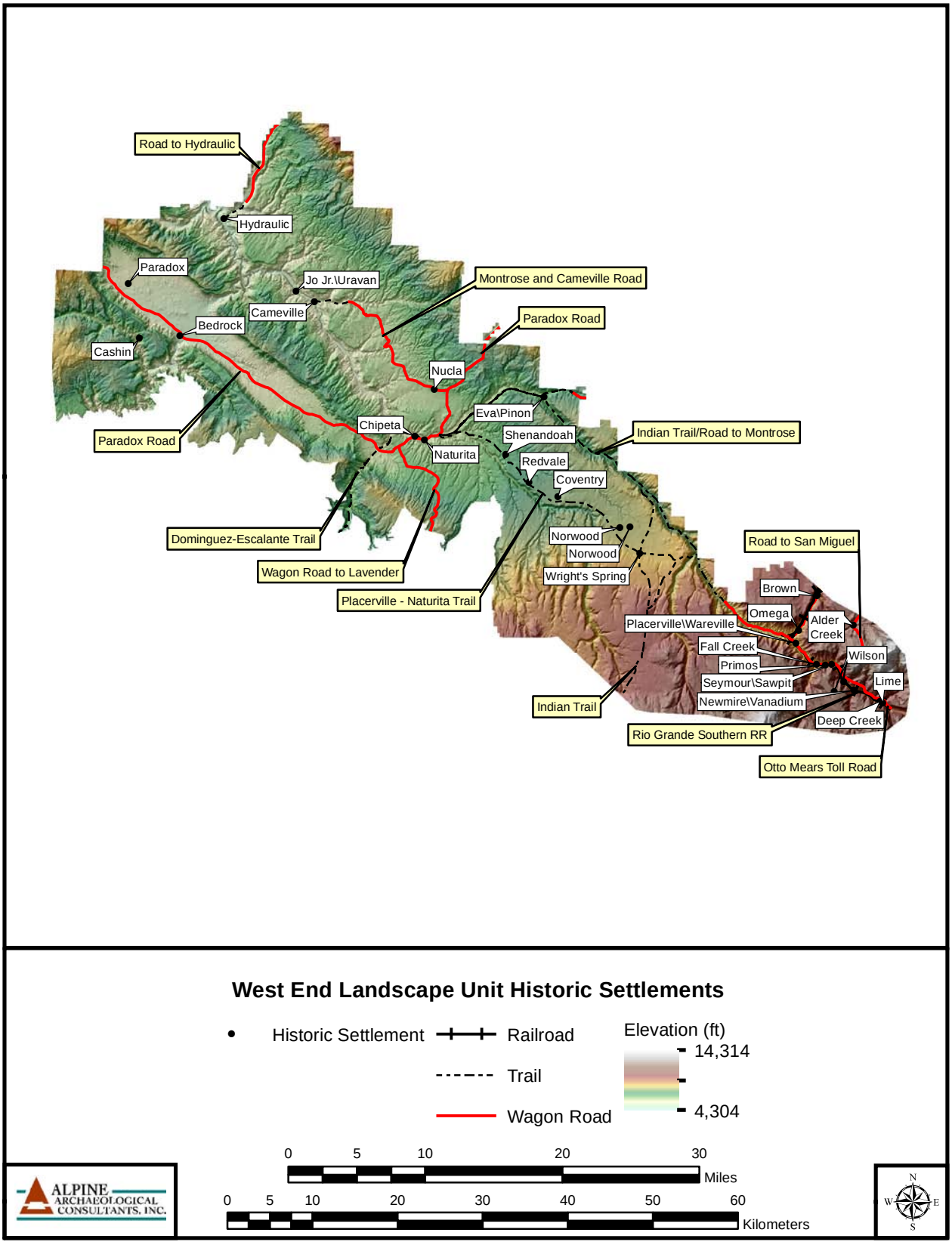


Figure 53. Historic settlements, railroads, roads, and trails in the West End LU.

Delta County

Alda – The Alda post office operated from May 2, 1913 to December 15, 1914 with Albert Ferrier as postmaster. The name originally requested for the post office was Grandview (Bauer 2003a:130-131). The post office was likely at the Ferrier Ranch, acquired as a Cash Entry Patent on October 12, 1900, on Grand View Mesa in an area served by the Grand View Canal. The Grand View Canal was established in 1895 and greatly enlarged in 1909, resulting in increased settlement that was served by the post office (Omvig 2009).

Marion/Austin – The Marion post office operated only from February 6, 1885 to August 27, 1886. It was located in a log building at the base of Cory grade built by W. K. "Ark" Hall (Bauer 2003a:160-161). Several years later, the community of Austin was founded by Dr. Austin E. Miller in 1900 along the route of the North Fork Branch of the D&RG. The Austin post office was established on May 19, 1905 (Bauer 2003a:131). Austin is in an agricultural area known for its fruit production.

Bowie – The Juanita Coal & Coke Company established mines along the North Fork of the Gunnison River northeast of Paonia. Alexander Bowie became part owner and manager of the mines in about 1906. The mine and the community that grew up near the mine became known as Bowie after having originally been known as Reading. The Bowie post office was established on February 5, 1907 with Alexander Bowie as the first postmaster. The post office was closed in 1967 (Bauer 2003a:133-134). Alexander Bowie died in 1917, but his descendants continued to operate the mine until it and the town were sold to Coors in 1974 (Bright 2004:23).

Cedaredge – The Cedaredge post office was established on December 5, 1894. It served the town of Cedaredge, and took its name from the ranch of Henry Kohler known as Cedar Edge, just southeast of the townsite. The town was laid out in 1890 and incorporated in March 1907. The post office seems to have moved from place to place within the town (Bauer 2003a:135-136).

Chipeta – Chipeta was a stop on the D&RG between Delta and Montrose. The Chipeta post office operated briefly between June 14 and September 7, 1895 with Mary C. Lauzon as postmaster (Bauer 2003a:139). The post office is on land acquired as part of a Cash Entry Patent by Francois C. Lauzon on November 3, 1891. Lauzon was the originator of the idea to bring Gunnison River water to the Uncompahgre Valley by way of a tunnel. He promoted the idea throughout the area in the 1890s. Lauzon came to Colorado as a miner in the 1880s and the family settled on the homestead in the Uncompahgre Valley in the 1890s. Lauzon left the area to mine in Alaska in 1898. He returned to the Uncompahgre Valley in 1900, but left for Arizona in 1904, so was not present when the Gunnison Tunnel was finally built (Corbell 2009; Northern Arizona University 2009).

Coalby – The Coalby post office was established on April 11, 1906 and was closed on August 15, 1912. It was named for the nearby Coalby coal mine (Bauer 2003a:139). Just east and southeast of the former Coalby post office are Brimstone Corner and Colby.

Cory – The Cory post office was established on March 12, 1895 (Bauer 2003a:140-141). The post office was initially on land acquired as part of a Cash Entry Patent by George O. Harshman on June 17, 1891, probably the husband of Cora Harshman, the second postmaster.

Crawford – The Crawford post office was established on April 14, 1883 with Joel L. Preston as postmaster. The town was named for George Crawford, who had assisted with the removal of the Ute from Western Colorado while in the military and was reportedly instrumental in the development of the towns of Grand Junction and Delta (Bauer 2003a:142-144)

Delta – The Delta post office was established on January 5, 1882 (Bauer 2003a:145). The town was platted by Samuel Wade in December 1881. Wade settled on a ranch farther up the North Fork of the Gunnison where he established the town of Paonia in 1882 (O'Rourke 1992:82-83). To facilitate

travel in the valley, Herbert and Newton Castle established a ferry across the Gunnison River on the northern end of Delta in 1883 (Austin 1988:4). Delta was the primary shipping point for fruit produced in the North Fork Valley until the North Fork Branch of the D&RG was constructed in 1902. It was also a primary cattle-shipping point for ranchers on the Grand Mesa (O'Rourke 1992:83).

Dominguez – The Dominguez post office was established on August 17, 1907 along the D&RG between Delta and Grand Junction. The Dominguez signal station was established by 1887 2 miles southeast of the post office along the railroad. The post office was closed on October 31, 1913. The location is also noted as Broughton on maps of the area (Bauer 2003a:149-150). The post office was likely established to serve local settlers within the canyon of the Gunnison River. It is unknown where the Broughton name originated. A pipeline was built in Dominguez Canyon for a water tank for the D&RG in 1913 (Porter 1994:132).

Eckert – The Eckert post office was established on October 27, 1891 (Bauer 2003a:150-151).

Hotchkiss – The Hotchkiss post office was established on October 3, 1882; George H. Duke was the first postmaster. It was named for Enos Hotchkiss, who had settled in the area in 1881, prior to the removal of the Ute Indians from Western Colorado (Bauer 2003a:156). The town is on land originally acquired as parts of several acquisitions from the public domain. George H. Duke obtained the southern portion of the townsite as a Cash Entry Patent on December 8, 1888 and the western portion of the townsite was obtained by William F. Duke as a Cash Entry Patent on the same date. William F. Duke was appointed postmaster on December 23, 1885. The Duke brothers had accompanied Enos Hotchkiss from Lake City into the North Fork Valley in 1881 to establish land claims for ranches in the area.

Lazear – The Lazear post office was established on January 29, 1912 along the route of the North Fork Branch of the D&RG Railroad. It was reportedly named for J. B. Lazear, an early settler of the area (Bauer 2003a:159).

Paonia – The Paonia post office was established on June 7, 1882 at the general merchandise store of rancher Samuel Wade. Wade was the first postmaster (Bauer 2003a:161-162). Wade obtained the land on which the post office was situated as a Cash Entry Patent on December 3, 1890. He had accompanied Enos Hotchkiss from Lake City into the area in 1881, prior to the removal of the Ute from Western Colorado, to establish land claims for ranches in the area. In December 1881, Wade platted the Delta townsite, but established a ranch farther up the North Fork of the Gunnison at Paonia. In 1882, he and Enos Hotchkiss brought the first fruit trees into the valley, which was the initiation of the fruit industry of the region (O'Rourke 1992:82-83).

Read – The Read post office was established on April 22, 1898. It closed on January 31, 1934. The community was reportedly named for John Read, a nearby settler who was a Civil War veteran. It served as a station on the North Fork Branch of the D&RG when the railroad was constructed through the area in 1902 (Bauer 2003a:164-165). The 1900 Delta County census shows that John Read was born about 1844 in West Virginia. He and his wife, Sophia, were living with their sons Charles F. and Joseph V. Read. Charles F. Read obtained an 80-acre Cash Entry Patent for land immediately south of the Read post office on May 26, 1896.

Roubideau – The Roubideau post office was established along the D&RG about 4 miles west of Delta and 0.75 miles east of Roubideau Creek on February 27, 1909. A siding called Roubideau had been established along the rail line by 1887, and Charles and Fred Blumberg were nearby settlers. The post office closed on July 15, 1918 with Charles Blumberg as its last postmaster (Bauer 2003a:166).

Verne/Welcome – The Verne post office operated only from October 12 to December 30, 1903 with George Eavenson as postmaster (Bauer 2003a:168). The post office was probably located on the Eavenson's ranch, which he obtained through a Desert Land Entry Patent on August 27, 1908. He probably attempted to open a post office to serve settlers moving into the area. This was the same location as the Welcome post office that operated from June 22, 1910 to August 31, 1912, also with George Eavenson as postmaster (Bauer 2003a:168).

Gunnison County

Bardine – The Bardine post office was established on March 11, 1903 on the northern side of the North Fork of the Gunnison River. Joseph and Anna M. Bardine served as postmasters. The post office closed on October 15, 1918 with mail going to Somerset (Bauer 2003b:96). The post office was evidently along the road along the northern side of the North Fork of the Gunnison on land that never went out of the public domain. Joseph Bardine obtained an 80-acre Cash Entry Patent for land immediately south of the post office on August 3, 1904. Bardine had run a hotel/boarding house in Leadville in the late 1870s and early 1880s and was admitted to the Colorado Bar in 1880. It is possible that the post office was associated with a boarding house when the D&RG was extended from Somerset to Bardine in 1903.

Somerset – The Somerset post office was established on March 19, 1903 (Bauer 2004:194). Somerset was the primary destination of the D&RG's North Fork Branch, constructed from Delta in 1902.

Mesa County

Escalante Forks – The Escalante Forks post office was established on October 16, 1916 with Zora L. Ward as postmaster (Bauer 2008b:21). This was likely at the ranch house of the Ward Ranch. Isaac A. Ward obtained a Cash Entry Patent for the land on which the post office was situated on November 24, 1899. On January 7, 1921, the post office was moved about 1 mile west to the Musser Ranch, where Shaw K. Musser was the postmaster (Bauer 2008b:21). This was on land obtained by John W. Musser as part of a Cash Entry Patent, also on November 24, 1899.

Montrose County

Bedrock – The Bedrock post office was established on November 8, 1883 with Alva W. Galloway as postmaster; it was on land acquired as a Cash Entry Patent by Lee W. Galloway on January 27, 1888. It was on the western side of the Dolores River about 1 mile east of its current location. A store was built in 1898 by Milton Fraides and the town of Bedrock was platted on May 31, 1899. A hotel, two saloons and two hotels soon followed (Rockwell 1999:135). The town was on land acquired as a Cash Entry Patent by James P. Galloway on August 27, 1895; he served as postmaster from 1901-1903 (Bauer 2008a:5-6). Bedrock was a supply point for the Cashin Mine, a copper mine a few miles to the west on the southern side of the Paradox Valley. The post office was closed from August 17, 1903 to October 12, 1911; it has operated continuously since then (Bauer 2008a:5-6).

Brown/Olathe – The Brown post office was established on April 2, 1883 in the railroad section house of Colorow along the route of the D&RG between Montrose and Delta. Harlan Brown, who acquired a nearby Cash Entry patent in 1889, was the first postmaster and the post office was named for him. Between October 1, 1891 and June 2, 1892, the post office was at Menoken. It returned to Brown, but was renamed Olathe on June 4, 1896 (Bauer 2008a:8, 41). The town of Olathe was originally known as Colorow and the core of the town was platted under that name by the Colorow Town Company, with J. B. Killian, as president on January 10, 1896. An expanded plat of the town under the Olathe name was made on May 31, 1906, also by the Colorow Town Company. Olathe was incorporated in 1907.

Cameville – The Cameville post office was established near the mouth of Tabeguache Creek along the San Miguel River on October 24, 1882; it was closed on August 20, 1890. The post office was on Spear placer mining claim, patented by Virgil M. Came and Charles S. Davis on June 25, 1887. The first postmaster was Edward A. Came and the last was George G. Davis (Bauer 2008a:9); they were probably related to the two claim owners. Virgil Came was an investment broker in Denver and enticed wealthy investors from the east to buy the claims and establish what became known as the Club Ranch in the area with their headquarters on the claims.

Cashin – The Cashin post office was established on September 14, 1898 at the Cashin copper mine on La Sal Creek. It was discontinued on April 30, 1904, but briefly reopened from January 4, 1905 to April 29, 1905 (Bauer 2008a:10-11). The Cashin claim was patented on July 10, 1900 by the La Sal Copper Mining Company.

Cedar Creek – The Cedar Creek post office was established along the D&RG east of Montrose on October 18, 1904. Anna Maid served as postmaster until the post office was closed on October 31, 1912 (Bauer 2008a:12). The post office was probably on the homestead of Adam F. Maid, who acquired a 160-acre Homestead Entry Patent on December 27, 1909. The post office reopened a short distance east on June 24, 1915, but closed on January 15, 1924 (Bauer 2008a:12). The rail stop on Cedar Creek was established by 1885.

Chipeta/Naturita – The Chipeta post office was established on October 21, 1881 and operated until September 15, 1882, when the name was changed to Naturita. The first post office may have been on land later homesteaded by Rockwood H. Blake, the second postmaster. He obtained a Cash Entry Patent for the land on January 11, 1892. On November 6, 1903, the post office was moved slightly southwest until April 28, 1914, when it was moved back to the northeastern part of town. The first settlers at Naturita were Rockwood H. Blake and Amon R. Payson; the name Naturita was given to the area by Blake's wife, Guadalupe. Blake and Payson formed a cattle ranching partnership. When Rockwood died in 1909, his son, John, continued the partnership. John C. Blake and Payson platted the town on June 30, 1914. The townsite included Payson's home, which featured the Blake and Payson store (Locke n.d.). By that time, Naturita had become a regular stopping place for freight between the Placerville and the Cashin Mine and radium/vanadium/uranium mines to the west. In 1927, a vanadium concentrating mill was constructed at Naturita, but was not highly utilized. The mill was rehabilitated by the Vanadium Corporation of America and put into production in 1939. To provide uranium ore for the Manhattan Project in World War II, a uranium circuit was added to the mill. The uranium boom in Western Colorado caused Naturita's population to explode to 1,200 by 1954. With the end of government purchase of ore in 1958, the mill at Naturita closed. The mill reopened using an innovative uranium recovery process in 1960, but the mill closed for good in 1963 (McWilliams and Schoch-Roberts 1994).

Cimarron – The Cimarron post office was established on August 18, 1883 along the D&RG line along the Cimarron River about 1 mile before the it enters the Gunnison River. The location was that of the Cline Ranch, established by Captain W. M. Cline in about 1875. Cline sold his ranch to the D&RG in 1881. It was renamed Cimarron and served as the supply station during construction of the line over Cerro Summit into the Uncompahgre Valley (Bauer 2008a:13-14).

Coventry – The Coventry post office was established on December 26, 1894; it was discontinued on December 15, 1917 (Bauer 2008a:16). In 1888, Roger Williams was the first settler at what would later become Coventry (Porter 1994:8). The Coventry Townsite Company was formed by E. B. Adams, W. L. Hogg, and Greg Hansen in 1909; Bulkeley Wells was the President when the town was platted in 1913. The community was a land speculation scheme that included a sizable irrigation project that resulted in the construction of Gurley Reservoir. The community served freighters of the Standard Chemical Company on their way to the railhead at Placerville. At one time, Coventry had a hardware store, hotel, blacksmith shop, mercantile store, and the office of the land company (Porter 1994:75-76).

Eva/Pinon – The Eva post office was at the confluence of Cottonwood Creek and the San Miguel River near the later community of Pinon. It operated only between June 14 and November 20, 1889 (Bauer 2008a:17-18). The post office was on either the Wall Street or Lauer placer claims, both patented on June 4, 1889. The Eva post office evidently served a community of placer miners. The site was resettled in 1896 by the Colorado Cooperative Company while they prepared their planned town of Nucla. The Pinon post office was established on February 21, 1896. The colony established a sawmill in Cottonwood Canyon to provide lumber for building construction and irrigation flumes. Irrigation water was brought to Tabeguache Park from the San Miguel River by an irrigation ditch that crossed Cottonwood Creek in a flume on an 840-long, 180-ft.-tall trestle. The trestle was built in 1903 and the irrigation system was completed the next year, enabling the colony to establish itself at its planned community of Nucla (O'Rourke 1992:87). The post office closed on June 15, 1905, following the resettlement of colony members to Nucla beginning in 1904 (Bauer 2008a:47-48).

Horsefly – The first Horsefly post office operated between May 1, 1886 and February 18, 1888 under postmasters Ella and Theophilus Neathery (Bauer 2008a:18). Neathery was an early rancher in the area and was also a miner in the Ouray area. The second Horsefly post office operated from June 1, 1912 to December 31, 1915; Mary Ann Cox was the first postmaster (Bauer 2008a:18-19). The post office was situated on land acquired as part of a Homestead Entry Patent by Ira Cox on February 13, 1913.

Hydraulic – The Hydraulic post office was established on July 25, 1888 on the northwestern side of Mesa Creek, about 0.25 miles east of the Dolores River. Nathaniel Parker Turner was the first postmaster (Bauer 2008a:19). The post office was near the terminus of the Hanging Flume on the Index placer claim patented to W. H. Remington on October 12, 1889. Remington was the principal owner of the Lone Tree Mining Company, which operated a large hydraulic mining venture on several claims in the area from 1885 to 1888. They sold their claims to the Montrose Placer Mining Company in 1887, headed by Turner. Turner was the driving force behind the construction of the Hanging Flume between 1889 and 1891, which brought water to the claims for hydraulic placer mining. The Hydraulic post office served the construction crews and miners at the terminus of the flume. Despite the monumental construction of the flume, the hydraulic mining operation did not succeed as planned and failed in 1892 (Pfertsh 2005). The post office was discontinued on May 24, 1893, but was reestablished on August 15, 1901 and operated until May 12, 1905 (Bauer 2008a:19-20). Attempts at reopening the claims using the flume were made by the Vixen Alluvial Gold Mining Company from 1897 to 1900 and by the Montrose Mining Company from 1900 to 1904 (Pfertsh 2005). The second opening of the post office was associated with the last mining attempt using the flume

Jojunior/Uravan – The first post office at what was to become Uravan was named Jojunior and was to be at the Joe Jr. Mill along the San Miguel River. The Standard Chemical Company built the Joe Jr. mill at their camp along the San Miguel River in 1912 to process carnotite ore for its radium and vanadium (Bean and Bell 1994; Twitty 2008a). The post office was established on December 16, 1914, but the postmaster, Albert E. Schade, refused the appointment and the post office never operated (Bauer 2008a:20). The post office of Uravan was established on August 27, 1936 when the Joe Junior camp of the Standard Chemical Company was acquired by the United States Vanadium Corporation. The post office ceased operation on December 1, 1986 (Bauer 2008a:58-60).

Uncapahgre/Uncompahgre/Los Pinos – The Uncapahgre/Uncompahgre/Los Pinos post office was at the Ute Indian agency just north of the Ouray County line just west of the Uncompahgre River. The Uncapahgre post office was established on December 20, 1875 upon the Los Pinos agency's move to the Uncompahgre Valley from its previous location on Cochetopa Creek near Saguache. The postmaster was Charles E. Bond, the agent (Bauer 2008a:55-56). The name was changed to Uncompahgre on March 20, 1876, and may have moved to a slightly different location, as the postmaster was no longer the agent (Bauer 2008a:56). On February 23, 1877, the post office was renamed Los Pinos. It may have again moved slightly as the postmaster was once again the Indian Agent, Charles D. Wheeler (Bauer 2008a:20-21). The Los Pinos post office closed on January 13,

1881, having been replaced by a new Uncompahgre post office a few miles north at the military post established on July 21, 1880 known as the Cantonment on the Uncompahgre. The new Uncompahgre post office was established at the new post on October 14, 1880 (Bauer 2008a:56-57). At the time of the closure of the Los Pinos post office, the Ute Indians were on the verge of being removed from the Uncompahgre Valley to a reservation in Utah. With preparations for removal and closure of the agency later in 1881, the military post north of the agency was the hub of activity. The cantonment was renamed Fort Crawford in 1886 and continued to be occupied by military personnel until 1890; buildings from the post were sold in 1895. James A Fenlon, formerly the sutler at the post and postmaster beginning in 1880, obtained a Cash Entry Patent for the land on which the post had been situated on April 3, 1896 (Hart 1965). The post office, run by Fenlon, continued to serve the local area until November 30, 1906 (Bauer 2008a:56-57).

Lujane – The Lujane post office was established on July 29, 1905 along the D&RG line east of Montrose on the northern side of Cedar Creek. It served the construction camp for the West Portal of the Gunnison Tunnel. Robert E. McCollum served as postmaster until its closure on July 15, 1910 (Bauer 2008a:22).

Maher – Maher is on the mesa between Iron Creek and Alkali Creek; a post office was established there on April 7, 1884 with Caleb Maher as postmaster. The post office moved from ranch to ranch through its period of existence and was finally discontinued on February 26, 1988 (Bauer 2008a:23-24).

Menoken – Menoken served as a post office only between October 1, 1891 and June 2, 1892, with Katie DeSilva serving as postmaster. It was moved from and back to Brown, which later became Olathe (Bauer 2008a:25). It is uncertain where the Menoken post office was situated. The current location of Menoken is about 5 miles south of Olathe; however, Charles L. DeSilva had acquired a Cash Entry Patent for land about 2 miles north of Olathe. If Katie DeSilva was the wife of Charles DeSilva, a move to their homestead for the short life of the post office may have taken place.

Montrose – Joseph Selig, O. D. Loutsenhizer, S. A. Culbertson, A. Pumphrey, and John Baird laid out the Montrose townsite in January 1882. Originally situated just south of its current location and known as Pamona, the town's location was moved to the alignment of the D&RG when it was built through the area. The Montrose post office was established on February 14, 1882 (Bauer 2008a:26-27). With the completion of the D&RG from Gunnison to Montrose in 1882, Montrose became a supply center for the region. Dave Wood established his freighting headquarters in Montrose in 1882, having followed the railroad down from Gunnison where he had started in the freighting business in 1881. He transported goods to Ouray and constructed Dave Wood Road across Horsefly Mesa to Haskill on Leopard Creek that intersected Otto Mears toll road over Dallas Divide at that point. From there, goods were transported primarily to Telluride, but also to other points in western Montrose and San Miguel counties (Rockwell 1999:79-81, 274). Buddecke & Diehl also were major freighters based in Montrose. Also established at Montrose was the Barlow & Sanderson stage line that provided passenger service to the mining towns of the San Juan Mountains (O'Rourke 1992:97-98).

Nucla – The Nucla post office was established on December 12, 1904. The Colorado Cooperative Colony was formed in 1894 and established the town as a planned community. While the town was being laid out, the colony resided nearby at Pinon. It was not until 1904 that the town was ready for residents to move in (Bauer 2008a:37-38). The town was platted by the Nucla Town Improvement Company on April 3, 1912.

Paradox – The first settlers in the Paradox Valley were Thomas Goshorn and Riley Watson, who arrived from Utah in 1877 when the area was still part of the Ute Reservation. Cattlemen arrived soon thereafter, also trespassing on the reservation. With the removal of the Ute from western Colorado in late 1881, a legitimate community grew up, with cattle ranching as its main emphasis (O'Rourke 1992:86). The Paradox post office was established on January 9, 1882 on the northeastern

end of the Paradox Valley (Bauer 2008a:43-45). Thomas Septimus Swain, discoverer of the Cashin Mine, started the first store in Paradox in 1895. Amon Payson, cattle rancher and a founder of Naturita, ran the Paradox store sometime after 1913. The Paradox townsite was platted on July 4, 1917 by Mary E. Reynolds, on whose property the town was situated. Irrigation from Buckeye Reservoir, built in 1922, enabled more diversified agriculture to take place in the valley.

Paxton – The Paxton post office operated briefly from November 3, 1905 to April 15, 1907. It is on the Gunnison County Line about 8 miles southeast of Maher (Bauer 2008a:46-47). The post office was on land obtained as a Cash Entry Patent by Oscar Flanary on February 27, 1901; it was probably situated at his house and served local settlers.

Redvale – The Redlands Townsite Company was formed in 1907 by A. E. Guy, Isaac. H. Gibson, and Oscar Lampman. They bought the 160-acre Homestead of John D. Gore and platted the Redlands townsite on August 31, 1907. It was a speculative land venture coupled to irrigation on Wright's Mesa. The Redvale post office was established on December 1, 1909, the name Redlands having been disallowed to avoid confusion with Redlands, California (Bauer 2008a:48-49). As a result, the town was replatted as Redvale on July 20, 1912. At one time the town had two stores, hotel, two churches, and a flour mill was nearby ((Porter 1994:113).

River Portal – The River Portal post office was established on January 9, 1906 to serve the construction camp at the East Portal of the Gunnison Tunnel. With completion of the tunnel, the post office was closed on May 14, 1910 (Bauer 2008a:50-51).

Shenandoah – The Shenandoah post office operated from April 29, 1892 to July 17, 1896 with James H. and Sarah L. Brandebury as postmasters (Bauer 2008a:52-53); it was on land acquired as part of a Cash Entry Patent by James H. Brandebury on June 27, 1895. Shenandoah was a real estate venture of Charles D. and Roderick A. Gurley, who had arrived in the area in 1884. They formed the Gurley Investment Company, which controlled the Naturita Canal and Reservoir Company and Shenandoah Irrigation and Land Company and acquired most of the land around Shenandoah. They packaged land and irrigation water for sale to settlers. Land in the area was promoted to immigrants to Colorado through the D&RG. A newspaper was started in 1891 and, by 1893, the community had 50 residents. Beginning in 1896, large numbers of Croatian settlers moved to the Shenandoah area under the direction of the Croatian Society of America with Charles Kukarich as the secretary (Porter 1994:12-16).

Ouray County

Ash – The Ash post office was established on October 11, 1899 to serve the Bachelor and Calliope mines on Dexter Creek. The name was made by using the last name initials of Charles Armstrong, Frank Sanders, and George Hurlburt, the three owners of the Bachelor Mine. The post office was closed on December 31, 1905 (Bauer 2009:3)

Aurora – The Aurora post office was established on May 10, 1880 with Joshua Trenchard as postmaster. Burr Culver was postmaster beginning October 17, 1881. Post office discontinued on February 19, 1884, with mail sent to Lawrence (Bauer 2009:3). The Trenchard family obtained a large quantity of land along the East Fork of Dallas Creek in 1883 as Homestead Patents. The post office may have first been established in that area. Burr Culver obtained a Homestead Patent about 1.5 miles farther north on the main part of Dallas Creek about 0.5 miles below the junction of the East and West Forks. This may have been a more convenient location for a post office, as it would have been on the main road over Dallas Divide. Probably associated with this location is a place on early maps designated Mayol's Trenchard, which probably designates a stopping place along the road over Dallas Divide at or near the junction of the East Fork of Dallas Creek with Dallas Creek. Fredrick Mayol obtained a Homestead Entry Patent near the Trenchards on March 10, 1883. Mayol was a French immigrant enumerated in the 1889 Ouray County census as a 38-year-old stock raiser

and farmer. He reportedly brought the first cattle into the Paradox Valley in 1878, while it was still Ute reservation land. He was caught by the Ute moving his cattle to the Lone Cone area the next year, was whipped, made to eat grass, and ordered to leave the area, abandoning his cattle (Rockwell 1999:123).

Campbird – The Campbird post office was established at the Camp Bird Mine along Imogene Creek on April 28, 1898. The Camp Bird Mine was the most productive gold mine in the Ouray area. Initially operated by Thomas Walsh, it was operated by an English syndicate until 1916. With a downturn in mining during World War I, the mine entered a period of inactivity and the post office closed on March 15, 1918. The mine began productive mining again in the 1930s, which continued until 1978 (Bauer 2009:3).

Colona – The Colona post office was established October 19, 1891. The community was evidently first known as Hotchkiss, but the name of Colona was adopted in 1882. The post office moved around from residence to residence in a variety of locations through the years and finally closed March 31, 1943 (Bauer 2009:6).

Dallas – The first community at Dallas was established at a placer gold discovery made in about 1879; the community was known variably as Unaweep or Gold City. When mining resumed in 1880, the name Dallas was selected. The most extensive mining at Dallas was by the Dallas Placer Company that did hydraulic mining of gravel deposits in about 1884 and 1885. Coinciding with this mining activity, the Dallas post office was established on January 16, 1884. Although placer mining was not productive, the town was along the route of the D&RG built south from Montrose to Ouray in 1887. As a result, Dave Wood moved his freighting business from Montrose to Dallas and the town became an important livestock shipping point for a time. Nearly all of the buildings in Dallas were destroyed by fire on September 10, 1888. Wood transported goods to Telluride and Norwood from his Dallas headquarters until the RGS was constructed through the San Juan Mountains from the new town of Ridgway in 1890. With Ridgway as the principal town of the area, Dallas declined and nearly all of the businesses moved to the new town. Another fire, probably in winter 1891-1892 destroyed much of what was left of Dallas and little rebuilding took place. The post office closed on October 31, 1899 (Bauer 2009:7-8; Gregory 1991:11-13; Rockwell 1999:81)

Dallasville – The Dallasville post office was along the wagon road between Dallas and Dallas Divide, but its exact location is not known. It may have moved to a more convenient location at Aurora. It was established on December 21, 1877 with Return Thompson as postmaster. James Kerr became postmaster on October 17, 1878 and Mrs. Emaline Thompson was postmaster beginning on June 21, 1879. The post office was discontinued on July 9, 1879 (Bauer 2009:9).

Gabbert – Gabbert was on the D&RG line to along the Uncomphagre River 14 miles north of Cow Creek. This is just north of Pa-Co-Chu-Puk state park on land first obtained as a Cash Entry Patent by C. S. T. Chaffee on February 1, 1890. The post office was established on April 22, 1898 and closed on September 24, 1903 (Bauer 2009:11).

Guston – The Guston post office was opened at the Guston Mine on January 26, 1892. The Guston was one of several rich silver mines in the Red Mountain Mining District that was served by the Silverton Railroad; it was initially discovered in 1881 and other rich mines in the area included the Yankee Girl and Orphan Boy. By the time the Guston post office was established, the heyday of silver mining in the area was nearing an end. The crash of silver prices associated with the Panic of 1893 resulted in the closing of many of the mines in the area. The post office was closed on November 16, 1898 (Bauer 2009:3).

Hot Springs – The Hot Springs post office was established on May 4, 1877 0.5 miles east of the Uncompahgre River. This was in the general area of Orvis Hot Springs. At the time of its establishment, the post office was on Ute Reservation land and occupation of the hot springs was hotly contested by the Ute. The post office was discontinued on August 28, 1879 (Bauer 2009:12-13).

Ironton – The Ironton post office was established on May 2, 1883 and a plat for the town was prepared in 1884. Ironton was the end of the line for the Silverton Railroad, constructed over Red Mountain Pass in 1889. It became the largest town in the Red Mountain Mining District and was at the head of the trail to Ouray. Mines in the Red Mountain Mining District were mainly silver producers that were hit hard during the Panic of 1893. The few gold-producing mines in the region enabled Ironton to remain active through World War I. The post office closed on November 29, 1919 (Bauer 2009:3).

Lawrence – Lawrence was established on February 5, 1883 on the eastern side of the Uncompahgre River just north of Dry Creek, which is probably Dry Cedar Creek, just south of Dallas. The post office was moved to Dallas on February 11, 1884 (Bauer 2009:16).

Mount Sneffels/Sneffels – The Mount Sneffles post office was established in Yankee Boy Basin on October 25, 1875. It was in the center of the rich Mount Sneffels Mining District that initially produced large quantities of silver, but also had mines that produced good quantities of gold, enabling it to survive the crash of silver prices associated with the Panic of 1893. The post office name was changed to Sneffels in 1895; it continued to operate until October 6, 1930 (Bauer 2009:16).

Ouray – With the San Juan Mountains legally opened to prospecting in 1873, a mining rush occurred focusing on the Silverton area in 1874. Spreading out from Silverton, Augustis Begole and John Eckles discovered gold and silver deposits along the upper Uncompahgre River. Later in 1874, A. J. Staley and Logan Whitlock staked the Trout Lode and Fisherman Lode on the western side of present-day Ouray. Subsequent discoveries at the "Mineral Farm," just south of Ouray, resulted in a rush to the area in 1875. The town of Ouray was laid out the following year, initially known as Uncompahgre or Uncompahgre City. The Ouray post office was established on October 28, 1875. A toll road was constructed by Otto Mears between Ouray and Silverton in 1884 and the town was connected by railroad from Montrose in 1887. The crash of silver prices associated with the Panic of 1893 hit the mines of the region very hard, but the few gold-producing mines in the area, particularly the Camp Bird Mine, kept Ouray prosperous. A brief resurgence in mineral prices resulted in increased mining during World War I. Mining continued sporadically for the next several years, only to come to a virtual standstill during the Depression (Henderson 1926; O'Rourke 1992). Ouray has always been a tourist destination. Its scenic beauty and hot springs continue to draw large numbers of tourists.

Portland/Plumer – A community was established at what later became Portland on the eastern side of the Uncompahgre River north of Ouray by Preston and Enos Hotchkiss in 1877. This was on the southern end of Uncompahgre Park and was the closest place to Ouray where agriculture could be practiced. The land on which the community was established was on land in dispute with the Ute because it had been intended to be kept as reservation land as a result of the Brunot Agreement of 1873, but was not included when the reservation was surveyed. A post office named Portland was established on January 11, 1878. The D&RG envisioned Portland as the end of their line south from Montrose and formally laid out the townsite of Portland in 1886; the town was incorporated on March 16, 1886. An attempt was made to establish a town to compete with Ouray to be the end of the extension of the D&RG south from Montrose. David F. Day, Otto Mears, and David Moffat formed the Ramona Town Company on December 18, 1886 with a proposed townsite adjacent to Portland. Proposed names for the community were Dayton (Day's Town), Helena (for Helena Moffat), Ramona (for a popular book), and Chipeta. Plans for the new town failed when Ouray was selected as the end of the rail line. Ouray businessmen raised money to entice the railroad to build

the line into Ouray. When the line was constructed, it was built on the western side of the Uncompahgre River and Portland was left without being the terminus and also not being along the route. The post office closed on April 24, 1896 (Bauer 2009:26). The Plumer post office was established at the old townsite of Portland on May 28, 1900. It was closed on December 14, 1901 (Bauer 2009:24).

Red Mountain – Just north of Red Mountain Pass, Red Mountain Town was situated at the immensely rich National Belle silver mine. A post office was situated there beginning on January 11, 1878. The town was incorporated in 1883 and the Silverton Railroad served the town beginning in 1888. Fires devastated the town in 1892 and 1895. The town briefly survived the crash of silver prices associated with the Panic of 1893, but when the National Belle Mine closed in 1897, the town had little reason to exist. Attempts at reopening the mines in the area were largely failures, resulting in the post office closing on February 28, 1913 (Bauer 2009:16).

Ridgway – The Ridgway post office was established October 1, 1890. Ridgway was established as the beginning point of the RGS along the D&RG line south from Montrose (Bauer 2009:30-31). Ridgway was a full service town, but depended mainly on the railroad. A flour mill was constructed in Ridgway in 1893 that utilized water power from a penstock leading from the Uncompahgre River (Gregory 1991:31-32). A creamery was established in 1905 (Gregory 1991:33-36). The largest other business in town was the Western Slope Box Company. A mill and box factory was built on West Dallas Creek in 1908. Boxes were stored in a warehouse in Ridgway and shipped for fruit packers in the Uncompahgre Valley. Larger sawmill equipment was installed so that logs cut be cut into lumber, and a lumber yard and planing mill was established in town. In 1912, the company bought the sawmill of John Rice at Leonard and moved it to Ridgway. From that time on, lumber was the primary concern of the company and boxes may not have been manufactured (Gregory 1991:36-37). Ridgway and the surrounding area were made famous as a result of its use in several major motion pictures. The first was "A Tribute to a Bad Man," filmed in 1958 at the A. E. Walther Ranch on Miller Mesa and east of Montrose. In 1961, portions of "How the West Was Won" was filmed in Ridgway and on Hastings Mesa and Cow Creek. The most famous film made in the area was "True Grit," filmed in 1968 in Ridgway and numerous other nearby locations (Gregory 1991:72-75).

Rodgersville – Rodgersville was a small mining community that was eclipsed by the growth of Red Mountain Town. Its post office operated only from March 19, 1883 to June 15, 1883 (Bauer 2009:16).

Ruby City – The Ruby City post office was established at the Ruby Trust Mine in Imogene Basin on May 4, 1878. It operated only until July 31, 1879 (Bauer 2009:16).

Virginius – The Virginius post office was situated near Sneffles at the Virginius Mine in Governor Basin. The post office was established on August 16, 1884 and closed on April 24, 1894 (Bauer 2009:16).

Windham – The Windham post office was established December 9, 1878 and was discontinued on June 20, 1881. The post office was on the eastern side of the Uncompahgre River about 2 miles south of Portland and 2½ miles north of Ouray; Mrs. Sarah C. Woodward was the postmaster (Bauer 2009:38). P. H. and R. W. Woodward and the Windbaur Silver Mining Company patented a 40.38-acre placer claim on June 30, 1880. It is possible that the post office was established on or near this claim.

San Miguel County

Alder Creek – The Alder Creek post office was established on December 31, 1878 and was closed on September 6, 1880. George Edward Hastings was the first postmaster (Bauer 2006:2-3). The post office was at the ranch established by Hastings on land obtained by a Homestead Entry Patent on August 8, 1890 The Hastings Ranch was a stop along the wagon road from Dallas Divide to Telluride that generally followed the route of the present Last Dollar Road.

Ames – Ames was a small placer mining community established on the South Fork of the San Miguel River in 1878. A post office was established at Ames on December 20, 1880 and between 1882 and 1884, a smelter was in operation there. By 1883, Ames had a small business district along its single main street and had a sawmill and stamp mill close by. Placer mining stagnated and the town largely ceased to exist after 1887. On February 15, 1892, the post office was moved to the Ophir Loop along the RGS where it was in Alvin Skillen's store. It was moved again to the town of Ophir on June 3, 1922, and the post office name was changed to Ophir (Bauer 2006:9; Horn 2009).

Dallas Divide – The Dallas Divide post office was established along the RGS on the Ouray County line. It operated from March 24, 1894 to July 23, 1909, when it was moved to Noel, with Charles Patrick Gallagher as postmaster (Bauer 2006:9). It was on land later acquired by Gallagher as a Homestead Entry Patent in 1919.

Fall Creek – The Fall Creek post office was established on June 22, 1933 and operated until November 13, 1943. It was originally along the southern side of the RGS line on the northern side of the San Miguel River across from the confluence of Fall Creek. In 1941, it was moved slightly to the northern side of the highway (Bauer 2006:13).

Haskill/Leonard – The Haskill post office was established on February 10, 1888 where Dave Wood Road joined the toll road built by Otto Mears down Leopard Creek from Dallas Divide to Telluride. Allen Curtis Haskill was the first postmaster. The post office was discontinued on February 28, 1907 and mail was sent to Leonard. It is possible that the post office ceased actual operation in 1900, when the Leonard post office was established at essentially the same location (Bauer 2006:15-16). The post office was on a portion of a 120-acre Homestead Entry Patent obtained by Haskill on April 27, 1891. The Leonard post office was initially established along the RGS near the original Haskill post office on March 23, 1900. It was reportedly named for the Leonard Cattle Company, which used the Uncompahgre Plateau as its summer range (Greager 1990:97). In 1930, the post office was moved about ½ mile northeast and to the eastern side of the line, but was moved again about 1.5 miles southwest in 1932. The post office was closed on December 31, 1940 (Bauer 2006:18-19).

Ilium/Vance – Ilium was a post office along the RGS line near its division point for the branch to Telluride established on February 10, 1891. The post office was discontinued on June 20, 1894. Soon thereafter, on October 26, 1894, a post office named Vance was established nearby at a section house and coal bin on the RGS. That post office operated until September 30, 1909. In 1901, the Telluride Power Company began constructing the Ilium Power Plant along the South Fork of the San Miguel River below the Ames Power Plant. The Ilium plant was completed in 1902, but was destroyed by a flood from the breaching of the Trout Lake Dam in 1909. The plant was then rebuilt in 1910. Coincident with the rebuilding of the power plant, the Ilium Post Office was reestablished, probably at the power plant, on June 15, 1910. The power plant continued operations into the 1960s and its buildings have been used as a summer camp since that time. The post office was discontinued on November 30, 1917 (Bauer 2006:40-42).

Leopard – The Leopard post office was established on the northern side of Leopard Creek about 2 miles west of Dallas Divide on October 6, 1890; Samuel D. Batchelder was the postmaster. The post office was closed on April 6, 1892 (Bauer 2006:19-20). The post office was at the Batchelder ranch house on land he acquired as part of a Cash Entry Patent on October 23, 1891.

Lizard Head – The Lizard Head post office was in existence from only March 1, 1898 to Novem ber 3, 1898 at the RGS railroad station on the summit of Lizard Head Pass (Bauer 2006:23-24).

Newmire/Vanadium – Newmire was a mining community established at the junction of Big Bear Creek and the San Miguel River. The townsite is situated on both the Red Cross Placer located on January 1, 1892 and the First National Placer located on January 7, 1899. Newmire began as a small community of placer miners and included several log cabins, wood frame houses, a stable, and a store that contained the post office. The post office was established on April 4, 1895 (Bauer 2006:21-22). When the United States Vanadium Company began staking and mining their vanadium claims along Big Bear Creek in 1901, their headquarters was at Newmire. In 1905, the first vanadium mill in the U. S. was built at Newmire. It was constructed on the northern side of the San Miguel River, was subsequently added to by the Primos Chemical Company after its arrival in 1911, and a new mill was built on the location in 1919 when the original mill burned; the mill site foundations are still visible along Highway 145. Probably as a result of the vanadium mill, the population of Newmire grew to 70 people by 1912 and had jumped to 200 by 1915. When the Vanadium Corporation of America arrived in 1920, the population reached its peak of 350. The town may have become company owned; the Vanadium Corporation of America ran the general store. In 1925, the town's population plummeted to 20 when a new vanadium mill was built in Rifle and, locally, vanadium recovery became tied to radium and uranium extraction from carnotite ore at Uravan. By 1930, the population was only three persons, apparently comprised only of J. H. Hughes and his family. Hughes seems to have resided at the townsite, running the store, serving as postmaster, and acting as the representative of the Vanadium Corporation of America until July 31, 1942, when the post office was terminated (Bauer 2006:54-55).

Noel – The Noel post office was established on July 23, 1909 along the RGS when the Dallas Divide post office was moved there. The postmaster was Frank P. Batchelder, who had been the postmaster at Leopard from 1890 to 1892. The post office was closed on April 30, 1919, with mail sent to Sams (Bauer 2006:22). The post office was on land obtained by Sophia Noel as part of a Cash Entry Patent on September 27, 1892. Her husband, Simeon Noel, acquired additional land in the area in 1893.

Norwood – The Norwood post office was established on December 22, 1887 on the east end of the current town of Norwood. The original post office was run from a store operated by Henry Copp. In 1914, the post office was moved about 0.5 miles west, more into the center of the town (Bauer 2006:23-24). Norwood is on Wright's Mesa, named for an early settler by the name of Wright from Norwood, Missouri. Wright sold his preemption to Z. Edwin Joseph in 1884, who reportedly had been in the area as early as 1879 (Porter 1994:3-4).

Ophir – The Ames post office had been moved to the Ophir Loop along the RGS by 1889; the move was made official in 1922 with the change of the post office name to Ophir. Sometime after the RGS was abandoned in 1952, the post office was moved to the town of Ophir, about 2 miles east of the Ophir Loop (Bauer 2006:23-24). Ophir was a mining community around the Suffolk Mill and other mines. It had declined drastically beginning in the 1930s, but has revived as a residential enclave with the growth of Telluride nearby as a resort destination.

Pandora – Just west of Telluride, a group of miners established a community called Newport near the Pandora Mine, which was discovered in 1875. A mill for the Pandora Mine was built in 1881 and a post office was established for the community, known as Pandora, on August 5, 1881. The post office closed on October 15, 1902, but the area has continued to be known as Pandora (Bauer 2006:23-24).

Placerville/Wareville – The Placerville post office was established on April 22, 1878 to serve a placer mining community at the junction of Leopard Creek with the San Miguel River. The first post office was reported to be 1 mile northeast of the San Miguel River, probably along Leopard Creek (Bauer 2006:33-34). This location seems to correspond well with the earlier post office of Wareville, which was established on May 16, 1877 on the western side of Leopard Creek near its confluence with the San Miguel River (Bauer 2006:56-57). It is probably not a coincidence that the Ware Bar placer mining claim was patented at the confluence of the creek and river, though at a considerably later date (June 19, 1894). By 1883, when Eliza E. Elliot was postmaster, the post office was clearly in the vicinity of the confluence of the two streams. Elliot obtained a patent on the Homestead Placer claim on October 6, 1891. With the arrival of the RGS in 1891, Placerville became a major shipping point for livestock and ore from uranium/vanadium/radium and copper mines from western Montrose and San Miguel counties. The post office was moved to the current location of Placerville along the San Miguel River about 1 mile upstream of the confluence of Leopard Creek on September 4, 1906 (Bauer 2006:33-34). A spur running downstream of the Leopard Creek confluence served stockyards and warehouses, including bulk-oil depots for Conoco and Texaco. The new townsite had a depot and warehouses served by the railroad. It also included a general store, post office, garage, hotel, school, and numerous residences.

Sams – The Sams post office was established along the RGS on the western side of Dallas Divide on April 6, 1903 with Jacob Impson as postmaster. It was situated on land obtained as part of a Homestead Entry Patent by Donna Impson on June 12, 1911. The community at Sams began with the construction of the RGS in 1890-1891; it was a siding where lumber was shipped. The post office was discontinued on December 31, 1919, but the post office was reestablished on July 27, 1927. With the dismantling of the RGS, the post office closed on August 24, 1950 (Bauer 2006:36).

San Bernardo/Trout Lake – Mining along the Lake Fork of the San Miguel River between Ames and Trout Lake and a small amount of homesteading around Trout Lake resulted in the establishment of a small community initially known as Trout Lake and later known as San Bernardo and Matterhorn. A post office initially known as Trout beginning on June 9, 1881 and then known as Trout Lake from June 14, 1882 to November 12, 1885 and from April 8, 1890 to June 29, 1892 was clearly not situated at Trout Lake, but was near the San Bernardo Mine. The post office was renamed San Bernardo on June 29, 1892 and was along the RGS line until it closed on April 7, 1907 (Bauer 2006:36; Horn 2007).

San Miguel – San Miguel was the first town established on the upper San Miguel River on the Ohio Placer just west of present Telluride. A post office was established there on June 25, 1877 and the town was platted later that year. Telluride was closer to the productive hard-rock mines of the area and quickly eclipsed San Miguel. The town continued to serve as a residential base and dairying center for the area into the 1890s. The post office was closed on September 19, 1895 (Bauer 2006:36).

Seymour/Sawpit – The Seymour post office was established in the vicinity of current Sawpit on July 13, 1892. It served a placer mining community along the San Miguel River. On February 8, 1896, the name was changed to Sawpit. Sawpit got its name from the creek that enters the river near the community where boards were hand-sawn for placer mining sluice boxes. The post office was closed on March 31, 1926 (Bauer 2006:40-42).

Smuggler – The Smuggler post office was established on March 22, 1895 at the newly opened lower entrance to the Smuggler-Union Mine at the Bullion Tunnel. Once the Bullion Tunnel was opened, it became the primary residence for miners who had previously resided farther up the mountain in Marshall Basin. With the closure of the Smuggler-Union Mining Company, the post office closed on December 5, 1928 (Bauer 2006:23-24; Horn 2002).

Sultana – The Sultana post office was established on January 25, 1899 and was closed on October 14, 1903. It seems to have served the community of miners at Alta (Bauer 2006:23-24). Alto grew up around the mine processing facilities for the Alta and St. Louis mines. The post office seems to date to the period of time that the San Juan Gold Mining Company built a large mill at the opening of the Black Hawk Tunnel, which intersected the Alta vein. The post office closed at the same time that the Alta Mine and the Bessie Mine was closed as a result of the Telluride miners strike. Although the mines and the mill opened again several years later, the post office never did (Horn 2002).

Telluride/Columbia/Folsom – When mining the San Juan Mountains was legally opened to mining in 1873 with removal of the San Juans from the Ute Reservation, mining first centered on Silverton in 1874. By 1875, miners had stepped over the divide into the San Miguel River drainage and began placer mining, soon discovering lode deposits in the surrounding mountains. San Miguel was the first community of miners in the area, but a competing town of Columbia was established a short distance to the west in 1878. The Columbia post office was established on July 26, 1880. The name was changed to Folsom on August 17, 1880, but was quickly renamed Telluride on December 13, 1880 (Bauer 2006:40-42). Telluride quickly became the business and supply center for mining in the region. Although the area had incredibly rich silver and gold mines, it was not until a branch line of the RGS was built to the town in 1890 that the mines could be worked to their full potential. Although the silver crash associated with the Panic of 1893 caused some economic problems, many of the mines around Telluride were good gold producers and the town continued to prosper into the late 1920s. Although mining continued into the early 1970s, the town saw considerable decline. In 1972, the Telluride Ski Area was established and Telluride is now a destination for year-round recreational activities.

Wilson – The Wilson post office was situated on the north edge of Wilson Mesa west of Big Bear Creek where it probably served ranchers of the area. It was in operation from only February 7, 1895 to November 15, 1901 (Bauer 2006:23-24).

Rural Agriculture

Farming

Following the removal of the Ute, agricultural settlement was initially focused along the low-lying areas of the Uncompahgre and Gunnison river valleys where diversions from the rivers and their tributaries enabled irrigated farming to take place. Less well watered areas were quickly taken up as grazing lands for livestock and the uplands were used for summer range. Almost immediately it was realized that the climate of the Uncompahgre Valley and the North Fork of the Gunnison River were particularly well suited to fruit growing. However, it was quickly learned that the amount of area that could be put into productive agriculture was limited by the availability of water. Water shortages during the late summer were particularly acute and resulted in diminished crop production. In the Uncompahgre Valley, this condition was not alleviated until water was brought to the valley from the Gunnison River through the Gunnison Tunnel in 1909 as part of the Uncompahgre Project, which was constructed by the Reclamation Department as one of the first projects under the Newlands Act of 1902.

When Enos Hotchkiss and Samuel Wade visited the North Fork Valley in 1881, prior to the land being opened for settlement, they realized the area had good potential for fruit production. Wade returned in 1882 and settled at what would become Paonia, brining with him apple, pear, apricot, peach, and cherry trees, grape vines, and blackberry plants. Hotchkiss also returned in 1882 and planted fruit trees where he settled near the present town of Hotchkiss. The success of these early plantings stimulated farmers to plant orchards elsewhere in Delta and Montrose counties (O'Rourke 1992:129-130). The Uncompahgre Valley was found to be very productive for the growth of potatoes. By the 1920s, the potato industry had declined and the Colorado Potato Growers Exchange was formed in 1921 to market potatoes. Warehouses and offices were built in Montrose, Delta, and Olathe, but the Depression of the 1930s limited its success. Sugar beets were first grown

in Mesa County in 1887 and a sugar beet factory was constructed in Grand Junction in 1899. Beginning in 1904, sugar beets were grown in the Uncompahgre Valley and shipped to Grand Junction for processing. A sugar beet factory was built in Delta by the Holly Sugar Corporation in 1920, providing a local market for the crop (O'Rourke 1992:132). Attempting to combat low prices for agricultural products during the Depression, the Delta Cooperative was organized in 1934. A cannery was established to provide a market for local fruit, but quickly failed (O'Rourke 1992:155). Following the Depression, improved prices for crops resulted in recovery of the agricultural industry and an increase in production through the 1950s (O'Rourke 1992:156).

Ranching

Frederick Mayol was the first to bring cattle into the Paradox Valley in 1878 when the area was still part of the Ute Indian Reservation. While attempting to drive his cattle to Ouray, he was stopped by the Ute near present Norwood, made to eat grass and abandon his cattle, and warned not to return (Rockwell 1999:123). Mayol continued in the cattle business, later settling on upper Dallas Creek near Ridgway. Other well known ranchers in the Ridgway and Dallas Divide area were Otto von Hagen, who founded the Von Hagen Land and Livestock Company and Harry McClure, and Marie Scott, who was one of the largest landowner in the region. Another early rancher on the southern end of the Uncompahgre Plateau was Sam Maupin, who arrived in the area in 1878 and later settled at Oak Grove, just west of Montrose (Musser 1986:51). Robert F. and George F. Roberts established a ranch on what became known as 25 Mesa in 1881. They used the upper Uncompahgre Plateau as summer range. 25 Mesa was named for their brand (Musser 1986:80). Soon thereafter, in 1886, Russell Davis ranched on California and 25 mesas and used the upper Roubideau Creek area as his summer range (Musser 1986:107).

In 1879, Frank Steele began cattle ranching in Paradox Valley and was joined by Prescott Stevens the next year, forming the Stevens and Steel Cattle Company. Other important ranchers in the Paradox area were Lee W. And James P. Galloway, Fred N. Prewer [Pruer], who later was part owner of the Pittsburgh Cattle Company, and James Charles Huff.

One of the first and largest cattle companies in the western portion of Montrose and San Miguel Counties was the San Miguel Cattle Company, more popularly known as the Club Ranch. The company's founder was Dr. Dick Derbon. Virgil M. Came interested Derbon in establishing a cattle company in the area in about 1881. Came had located several placer mining claims along the San Miguel River above what later became Uravan and was an investment broker in Denver. The claims—the Wiswell, Pratt, McIntyre, and Spear Placers—ran for about 7 miles along the river and were patented by Came and Charles S. Davis in 1887. The town of Cameville was established on the Spear Claim. Derbon interested several investors in the East and obtained Came's mining claims for the base of the cattle operation and established the headquarters at the mouth of Spring Creek at Cameville by 1882. S. E. Land was the foreman of the ranch and a summer headquarters, the Club Cabin, was built on the Uncompahgre Plateau on the upper reaches of Shavano Creek near Spruce Mountain. Upon Derbon's death in 1884, Robert Wood Johnson, president of Johnson & Johnson became president of the company. He hired Charles Edward Wetzel as ranch manager; Andy Middlemist was the range boss until 1895 and he was replaced by Jefferson Davis Dillard, who served as range boss until 1898 when he went into the cattle business on his own. In addition to the Club Cabin, Wetzel established a second summer headquarters farther northwest on the Uncompahgre Plateau on the upper reaches of Mesa Creek. From there, cattle were driven to Whitewater where they were put on the railroad for shipment to market. In 1899, the company was sold to Wetzel. Cattle were later shipped from Roubideau and Delta. Wetzel sold the ranch to Alexander Calhoun and Bill Selby in 1906 and the headquarters of the operation was moved slightly to what later became Uravan. Calhoun became the sole owner in 1911, then sold the ranch to Rolla Butterfield and Frank Christy in 1915. Ed Lavender bought the ranch in 1922 and later the ranch holdings were sold to the Redd family (Anonymous n.d.; Musser 1986:212-213; Rockwell 1999:150-158). Dillard established the XVT Ranch and had his summer headquarters on the Uncompahgre Plateau on land that he obtained as a Cash Entry in 1901. In the 1880s he had worked as a cowboy

driving cattle from Texas to Colorado and Wyoming. After settling in Delta and running his own ranch, he was instrumental in helping to develop the Taylor Grazing Act.

The Ashley Cattle Company was the first to graze cattle on the upper reaches of Roubideau Creek (Musser 1986:44). Early ranchers in Escalante Canyon were John W. Musser, Isaac A. Ward, Robert L. Barklay, Fred Blumberg, Robert Kelso, Oscar and Nelson Huffington, and the Shreeves family. All used the Uncompahgre Plateau as their summer range. The most well known event in Escalante Canyon was when Ben Lowe and Cash Sampson shot and killed each other in 1917 (Musser 1986:42-43, 57, 91, 109-122; Rockwell 1999:61-62).

John Wainwright Tripler and Lisle Wainwright arrived in Colorado in 1885 from Philadelphia and started the Philadelphia and Conejos Cattle Company. Their operation was based on the San Miguel River just east of Naturita and they ranged their cattle on forest land near Tabeguache Creek during the summers.

The Paradox Valley and lower San Miguel River area was prime cattle country. W. H. Nelson began grazing cattle on Iron Springs Mesa on the Uncompahgre Plateau and near Lone Cone during the summer, drove his cattle into Dry Creek Basin during the fall, and moved them to the junction of Gypsum Creek and the Dolores River for the winters beginning in the early 1880s. James P. Galloway established a large ranch in the Paradox Valley about 1883. The San Miguel Cattle Company and the Club Ranch had their headquarters along the San Miguel River near the later site of Uravan in the early 1880s. Soon, cattlemen, including Harry B. Adsit, began establishing their ranching headquarters on Wright's Mesa and established the town of Norwood. Cattle were initially driven to Montrose, Delta, and Whitewater for shipment on the railroad, but with the construction of the RGS in 1890, Placerville became a major livestock shipping point for the region (O'Rourke 1992:123).

From the 1880s to the 1910s, the North Fork of the Gunnison area was mainly occupied by cattle ranchers that used Black Mesa, the Grand Mesa, and other nearby uplands for summer range and wintered their animals in the valley. Cattle were shipped from Delta, Glenwood Springs, or Sapinero. Overgrazing, lower prices for cattle beginning in the 1890s, and rapid settlement of the area for farming considerably diminished cattle ranching in the North Fork Valley. Sam Hartman began grazing cattle in the North Fork of the Gunnison River Valley in 1881, bringing cattle from Denver by way of Gunnison. He was the brother of Alonzo Hartman, who had worked at the Gunnison cow camp of the Los Pinos Indian Agency and brought the Ute's cattle into the Uncompahgre Valley in 1875 (Rockwell 1945:69-71). The trail over Black Mesa to Sapinero was known as the Hartman Trail. Hartman's ranch was in the Maher area. Pierre Settle and Henry Kohler arrived in the area in 1881 and were important in the success of the Surface Creek Livestock and Land Company with its headquarters at present Cedaredge. The ranch was known informally as the Kohler Ranch or the Bar I Ranch, but Kohler called it Cedar Edge. S. S. Baldwin and A. C. Botsford brought cattle into the Cedaredge area by 1882. John and James Hart, Frank McKenzie settled in Harts Basin at the same time. They joined with Baldwin to form the Figure Four Cattle Company in 1883. Under manager A. C. Botsford, it became one of the largest ranches in the Surface Creek area (Musser 1986:86; Rockwell 1945:65). Russ Wilmott began cattle ranching on Rogers Mesa in 1882 (Musser 1986:41). George Rogers came to the area in 1883 as the foreman for the Diamond Joe Cattle Company, which was a large English syndicate with their operation centered on the Crawford and Maher area (Musser 1986:92). In 1883, Aaron Clough and Sam Angevine began grazing cattle in the Minnesota Creek area south of present Paonia and David and Solomon Stevens occupied the Terror Creek area north of present Paonia (Rockwell 1945:71-72). The IX Ranch at Hotchkiss was another early ranch in the area. Enos Hotchkiss and Samuel, Ezra, George, and Charles Wade began grazing in the Muddy Creek area on the headwaters of the North Fork of the Gunnison River near McClure Pass. Hotchkiss was the first to graze sheep in the region, beginning in 1890 (Rockwell 1945:72).

The end of the large cattle companies and unrestricted use of the public domain took place in 1893. The first large bands of sheep were brought into the area from Utah by Dave Clark in 1893. They were blamed for overgrazing the lowland areas in what the cattlemen had up until that time used as winter range. Thereafter, cattlemen violently opposed sheep being brought into the area for seasonal grazing and formed the Cattle Grower's Protective Association to prevent any attempts. Intimidation of sheepherders and driving of sheep from the range was commonly practiced by the in Delta and Gunnison counties. On the Uncompahgre Plateau near Dominguez, Howard Lathrop of Montrose lost over 200 sheep in an attack by local cattlemen intent on preventing him from bringing sheep onto what they considered strictly cattle range in 1916 (Musser 1986:303-308).

The establishment of the Battlement Mesa Forest Reserve in 1892 restricted grazing on the public domain, resulting in conflict between cattle ranchers and the federal government. Some measure of support came prior to 1900 when regulations were implemented to keep sheep off of the public range. The Gunnison River was established as an informal dividing line, with cattle grazing taking place north of the river and sheep grazing taking place to the south. However, beginning in 1900, the government planned a permit system whereby all livestock, including sheep, could be grazed on public lands, but negotiations formally disallowed grazing of sheep on the Battlement Mesa Forest Reserve. In 1905, additional forest lands were withdrawn for the Gunnison and Uncompahgre Forest Reserves and the sheep ban continued on the Gunnison National Forest. Following the withdrawals, grazing fees were implemented. With the decline of cattle ranching in the 1910s, new regulations were instituted that allowed sheep grazing on the Battlement Mesa and Gunnison National Forests.

Sheep grazing in the North Fork Valley regions was by local ranchers, such as the Hotchkisses and the McIntyres, until 1929, when Steve Chollas brought sheep to graze on the public domain from Price, Utah. Elsewhere, sheep grazing on the northern end of the Uncompahgre Plateau in the vicinity of Horsefly Creek began by at least 1898 by Vinton Bray and 1904 by Lawrence Finch (Lathrop 1972). Edwin E. Shinn was a major sheep rancher in the Montrose area beginning about 1887 and grazed his sheep in the Cimarron River drainage (Bowen 1905:705). His ranch headquarters was in Shinn Park, 10 miles east of Montrose. Shinn enabled Howard Lathrop of Montrose to succeed him as one of the largest sheep growers in the region, beginning in about 1909. Lathrop grazed his sheep in the Cimarron River drainage, on the northern Uncompahgre Plateau, and in the Cisco, Utah area into the 1940s (Rockwell 1945). By the 1910s, sheep grazing was also common on Specie Mesa.

Further regulation of grazing on the public domain took place with the enactment of the Taylor Grazing Act in 1934, which established the Grazing Service. To better control livestock movements on the public domain, stock driveways were often established. The only stock driveway known in the study area is the Lu Hall Stock Driveway, established to move animals between Lone Cone and Specie Mesa to Placerville. In 1946, the responsibilities of the Grazing Service were combined with the General Land Office, resulting in the establishment of the Bureau of Land Management (Austin 1988; Clock 2002:18-22; O'Rourke 1992:123-127).

Water Control and Distribution

The first irrigation ditch in the Uncompahgre Valley was constructed in 1880 by soldiers at the Cantonment on the Uncompahgre, later known as Fort Crawford, between Montrose and Colona. The water was used to irrigate gardens and trees along the parade ground (Collins et al. 1981:55). As soon as settlers entered the Uncompahgre Valley upon removal of the Ute in late 1881, canals and ditches began to be constructed to take water from the Uncompahgre River and other side drainages of the region. The first irrigation ditch built in the Uncompahgre Valley following the removal of the Ute Indians was the Garnet Mesa Ditch, constructed in late 1881 a few miles south of Delta. Drinking water for Delta was conveyed 3 miles in the Delta Ditch, built in March 1882. The primary ditches in the Montrose area were the Uncompahgre (Loutsenhizer) Ditch, the Selig Canal,

and the Montrose Canal. O.D. Loutsenhizer constructed the 4-mile-long Uncompahgre (Loutsenhizer) Ditch to Montrose from the eastern side of the Uncompahgre River in 1882; it provided both domestic water for the new town of Montrose and irrigation water for crops. The next year, the Uncompahgre Ditch and Land Company built the Montrose Canal, to take Uncompahgre River 7 miles south of Montrose over the mesas west of the river and northward toward Delta. The Selig Canal was built in 1883 with its head gate on the eastern side of the Uncompahgre River 3 miles south of town (Collins et al. 1981:53-54). In the Delta area additional water was sought from the Gunnison River, but its deep entrenchment except for a short distance above and below the confluence of the Uncompahgre Valley made diversion from the stream difficult. The Gunnison River was tapped by the Relief Ditch in 1889 and the North Delta Canal in 1901. These, also, were inadequate for the amount of potential irrigable land (Greubel and Firor 2007). Likewise, the settlers in the North Fork Valley made use of water from the North Fork of the Gunnison River and its tributary streams. In all instances, it was quickly realized that the water in the streams of the area was insufficient to irrigate the amount of land with potential to be productive crop land and that low water flows during the summer created critical water shortages when water was needed most. Small reservoirs were built on some of the tributary streams to store water in order to prolong the irrigation season, but most of these were of too small of a scale to make much of an improvement.

In the Uncompahgre Valley, farmers dreamed of ways to tap the waters of the Gunnison River deep within the Black Canyon. By the late 1890s, schemes of digging a tunnel through the Black Canyon uplift to the Uncompahgre Valley were being talked about and an appeal to the State of Colorado provided funding for the beginning of a tunnel in 1900. Inadequately funded and of a considerably larger scope than could be handled by state and local government, the building of the Gunnison Tunnel and its associated irrigation system became one of the first reclamation projects of the federal government under the Newlands Act of 1902. The Uncompahgre Project incorporated many of the existing canals and ditches in the Uncompahgre Valley, including the Loutsenhizer Ditch, Selig Canal, and the Montrose Canal (Montrose & Delta Canal), into the modernized irrigation system (Collins et al. 1981:53-54).

Farmers in the North Fork Valley had the advantage of the adjacent Grand Mesa where numerous lakes were enhanced to store water for late season release into the drainages. The Surface Creek Ditch & Reservoir Company was formed about 1887 to build dams in the Alexander Lake area and built ditches from Ward and Kiser Creeks to Surface Creek. The Cedar Mesa Ditch and Reservoir Company was formed in 1894 to bring water to Cedar Mesa. Fruit Growers Reservoir was built to serve farmers on the lower portion of the Surface Creek area and land in the vicinity of Orchard City was irrigated with water pumped from the Gunnison River (Austin 1988:18). Important irrigation systems in the North Fork Valley area were the Stewart Ditch, Fire Mountain Canal, the Overland ditch, and the Farmers Ditch. The Stewart Ditch initially took water from the North Fork of the Gunnison River 4 miles above Paonia beginning in 1882. It was enlarged 1892, 1895, 1901, and 1910, with largest enlargement in 1895. It took its name from George Stewart, who began making the most substantial enlargement of the canal in 1894, whereupon it enabled the irrigation of 2,200 acres of farmland (Rockwell 1945:99-100). The 32-mile-long Fire Mountain Canal took water from the North Fork of the Gunnison River 10 miles above Paonia for the irrigation on 10,000 acres of land on Rogers, Sunnyside, and Pitkin Mesas. The canal was begun in 1896 and completed in 1901 (Rockwell 1945:100-102). The 21-mile-long Overland Ditch took from Leroux Creek beginning in 1893. Enlargements in 1914 and 1935 enabled the irrigation of 9,000 acres (Rockwell 1945:102). The 12-mile-long Farmer's Ditch was financed by Edd Hanson in the late 1880s. It took water to Hanson Mesa and nearly as far as Hotchkiss (Rockwell 1945:99).

In the Norwood area, large irrigation projects were mostly tied to real estate schemes. The Naturita Cattle and Land Company, founded in 1884, was one of the first large cattle companies in the area and quickly began acquiring large holdings of land through possibly fraudulent land entry practices. The company also acquired water rights from the Beaver Creek drainage system and built

the forerunner of Gurley Reservoir in 1889 under their subsidiary company the Naturita Canal and Reservoir Company. The reservoir was enlarged in 1913, 1936, and 1963. Their primary canals, the Naturita Ditch and the Beaver Extension Canal, provided irrigation water for about half of Wright's Mesa. Settlers intent on irrigating the remaining 10,000 acres of land on Wright's Mesa acquired water rights from Naturita Creek, formed the Lone Cone Ditch and Reservoir Company in 1902, and built Lone Cone Reservoir. The reservoir was enlarged in 1911, 1928, and 1949. Another important irrigation system in the area was the Nelson Ditch, constructed by W. H. Nelson beginning in 1907 and using water from East Beaver Creek and its tributaries. The ditch was purchased by the San Miguel Development Company and extended to Mailbox Park (Greager 1990:120-131, 150). An attempt to bring water from Naturita Canyon to the Redvale area was attempted by A. E. Guy in 1913. Although the Redlands Ditch completed only as far as Guy's ranch, the canal is noteworthy because it was constructed using Japanese labor (Greager 1990:152-155; Porter 1994:12).

Industry

Fur and Hide Trade

The Northern Branch of the Spanish Trail was the primary travel route used by trappers heading north from Taos during the fur trade. It enabled access to the Rocky Mountains of Colorado, the Uintah Basin, and the upper reaches of the Colorado and Green Rivers. The first fur trappers known to have ventured into the Uncompahgre and Gunnison river valleys were from Taos in 1824. In that year, Thomas "Peg Leg" Smith led a large group of trappers over the Northern Branch of the Spanish Trail that included smaller parties of trappers headed by William Huddart, Etienne Provost, Francois Leclerc, and Antoine Roubidoux. These trappers spread throughout western Colorado and expanded westward to the Green River. In 1828, Antoine Roubidoux established a trading post near the confluence of the Uncompahgre and Gunnison rivers, near the present town of Delta. This served as a headquarters for trappers of the region, a center of trade with the Ute, and a place where furs were accumulated for transport to eastern markets. By the end of the 1830s, the region had been thoroughly trapped out, but the post remained until it was burned by the Ute in 1844.

Mining

Discovery of gold in Colorado brought a rapid influx of miners to the Front Range in 1859. By 1860, miners had expanded their explorations into the San Juan Mountains, but it was not until the early 1870s that their presence became more permanent. Because of the mineral wealth of the San Juan Mountains, the Brunot Agreement was negotiated with the Ute, whereby the San Juan Mountains were ceded by them from the reservation. Major mining communities were established almost immediately at Silverton, Lake City, Ouray, and San Miguel (the forerunner of Telluride) and trespasses on the Ute Reservation was rampant. The only known mining trespass on the reservation seems to have been a short-lived placer mining venture at the junction of Dallas Creek and the Uncompahgre River, which was the forerunner of later placer mining at the same place in the early 1880s resulting in the establishment of the town of Dallas. Other mining ventures down the San Miguel and Dolores Rivers seem likely, but no record of them has emerged. The most egregious trespass was in Uncompahgre Park, north of Ouray, which had been specifically identified as part of the Ute Reservation in the Brunot Agreement, but failed to be included in the survey of the reservation boundaries. Consequently, settlers from Ouray expanded into the park because it was the nearest arable land to the town. In addition, subsequent withdrawal of a block of land surrounding the Hot Springs (present Orvis Hot Springs), was ignored by settlers. Attempts at removing the settlers from Uncompahgre Park was met with considerable resistance, and through political maneuvering, the settlers were allowed to remain, much to the displeasure of the Ute. During the middle 1870s, travel across the reservation took place along the Salt Lake Road between the Salt Lake Valley and the mines in the San Juan Mountains, most notably by miners in Ouray supplying themselves from Utah and by miners traveling from Utah to the Colorado mines. The most famous of these travelers was a group of miners led by O. D. Loutsenhizer that included the

notorious Alfred Packer. A further consequence of the expansion of mining in the San Juan Mountains were trespasses on the reservation by early cattlemen intent on supplying the mines with beef who were enticed by the vast grazing lands on the reservation, particularly in the Paradox Valley region.

Mining Districts

Mining districts were established wherever mineral deposits were recognized in order to establish some control over the staking of claims and often included rules or by-laws that governed their operation. Mining districts were most applicable in areas that were unsurveyed early in Colorado's history. By the time mining took hold in western Colorado, the necessity of mining districts had declined and, in the official record, they were often used mainly as a general reference as to where a mining claim was situated. Boundaries of mining districts were undefined and often overlapped each other, perhaps reflecting new mining excitement in part of an area that had seen earlier activity. It also appears that the term "mining district" was loosely applied to areas where mining or prospecting was taking place and was not applied to areas in a legally definable way. According to Dunn (2003:i), "After World War II, 'district' sometimes referred to an area of economic mineralization (established or potential) rather than to actual mining activities."

Mining districts frequently appear to have been defined by the types of minerals being sought. Sub-districts were often referred to within a larger mining district or later districts were sometimes identified that appear to overlap earlier mining districts. For instance, mining districts established for the mining of placer deposits along a river were sometimes overlapped by later mining districts identified for the mining of vanadium or uranium. Mining districts associated with the mining of precious metals within the UFO were as follows:

- The Muddy Mining District may partially enter the northern portion of the UFO on the upper portion of Muddy Creek in eastern Delta County. The area produced a small amount of gold, silver, and lead, mostly in placer deposits (Dunn 2003:76).

- The Chipeta Mining District was probably situated along the San Miguel River between the Chipeta post office, which was renamed Naturita, and Cameville in western Montrose County. Gold and copper ore were evidently found within the district in the 1890s (Dunn 2003:229).

- La Sal Creek Mining District may partially or completely have been overlapped by the Paradox Valley Mining District. It included the Cashin and Cliff Dweller copper mines on the southwest side of the Paradox Valley and placer deposits along La Sal Creek in western Montrose County (Dunn 2003:230).

- The Naturita Mining District covered placer claims along the San Miguel River downstream of Cottonwood Creek at Pinon to its confluence with the Dolores River and northwestward along the Dolores River. Most of the mining was conducted in the 1880s and 1890s (Dunn 2003:230). The western portion of the Mining District would have overlapped with the Hydraulic Mining District, which was for radium and vanadium.

- The Oro Mining District was a designation probably used for placer mining claims along the San Miguel River at Pinon in central Montrose County (Dunn 2003:330).

- The Tabeguache Creek drainage from the confluence with the San Miguel River to its headwaters on the Uncompahgre Plateau in central Montrose County was designated the Tabeguache Basin Mining District. Prospecting for copper ore took place in the mining district with no production known (Dunn 2003:231).

- The Vixen Mining District was a portion of the Naturita Mining District that also overlapped the Hydraulic Mining District on the lower portion of the Dolores River in the vicinity of the Hydraulic post office on Mesa Creek in northwestern Montrose County (Dunn 2003:232).

- The Ouray Mining District was an informal way of referring to the mines surrounding the town of Ouray (Dunn 2003:234).

- The Paquin Mining District appears to have included the mines on upper Dexter Creek a few miles north of Ouray in Ouray County (Dunn 2003:234).

- The Ridgway Mining District extended along the Uncompahgre River from just north of Ridgway downstream for a distance of about 6 miles to a point beyond Cow Creek in northern Ouray County. It primarily included the placer deposits at Dallas (Dunn 2003:236).

- The Uncompahgre Mining District was initially used as a way to describe all of the area drained by the Uncompahgre River from its headwaters in southern Ouray County to the vicinity of Dallas north of Ridgway (Dunn 2003:238).

- The Lower San Miguel Mining District covered placer deposits along the San Miguel River below the confluence of the South Fork of the San Miguel River passing through Newmire (Vanadium), Sawpit, Fall Creek, and Placerville in northern San Miguel County. Smaller mining districts were referred to within this area including the Newmire, Sawpit, and Placerville mining districts (Dunn 2003:297-299). Vanadium claims along the river and its tributaries were also referred to as being within the mining district.

- The Telluride Mining District was used to refer to a large expanse of territory centered on the town of Telluride in San Miguel County that included portions of Ouray, San Juan, Dolores, and San Miguel counties. Through time, its extent shrunk to include the lode mines in the upper basins around Telluride, which were more commonly referred to as being in the Upper San Miguel Mining District (Dunn 2003:300-301).

- The Ophir Mining District included lands drained by the Howard's Fork, Lake Fork, and South Fork of the San Miguel River in San Miguel County. Many of the mines in the region were lode mines, but considerable placer mining took place along the drainages. The district included the Keystone placer deposits on the main stem of the San Miguel River below Telluride (Dunn 2003:297).

The four mining districts associated with radium, vanadium, or uranium within the UFO area were:

- The Rock Creek Mining District covered early radium and vanadium deposits in the vicinity of Roc Creek in western Montrose County. Mining was initiated in the district as early as 1898; it later produced uranium ore (Dunn 2003:231).

- The Hydraulic Mining District was situated along the San Miguel River downstream of Uravan and farther northwest along the Dolores River to cover areas where radium and vanadium prospecting and mining took place by about 1908 (Dunn 2003:229-230). This included the tributary streams Roc Creek, Mesa Creek, and Atkinson Creek.

- The Uravan Uranium Mining District is centered on the confluence of the San Miguel and Dolores Rivers in western Mesa and Montrose counties and northwestern San Miguel County and falls entirely within what has been termed the Uravan mineral belt. It includes the

mines at Roc Creek, the Joe Junior Camp – later renamed Uravan, and the claims in Long Park (Dunn 2003:214, 232).

- The Paradox Valley Mining District included radium/vanadium/uranium claims in and around the Paradox Valley in western Montrose County. It included the Payday Mine and overlapped the La Sal Creek Mining District, which was evidently established for the mining of precious metals (Dunn 2003:231).

A single mining district within the UFO area is associated with the possible extraction of feldspar. The loose use of the term "mining district" noted by Dunn (2003:i) for post-World War II mineral discoveries may apply in this instance:

- The Gunnison River Pegmatite Mining District was recognized because of feldspar deposits along the Gunnison River in western Gunnison and eastern Montrose counties. It is unknown if any commercial mining of feldspar took place; the district seems to have been first mentioned in 1960 (Dunn 2003:145, 229).

Placer Mining

The first placer mining in the Uncompahgre Valley was along the Uncompahgre River at Dallas Creek, perhaps as early as 1879. The most extensive mining effort was by the Dallas Placer Company in about 1884 and 1885. Hydraulic mining used water diverted from Dallas Creek into a penstock, but was not very profitable (Gregory 1991:11-13). A very small amount of placer mining was attempted on the Clear Fork and on East Muddy Creek in the upper North Fork of the Gunnison River from the 1890s through the 1920s. This mining was not very extensive and not commercially viable (Clock 2002:12-13).

In August 1875, the Remine brothers and eight others filed the first placer claim in the area, along the San Miguel River west of present-day Telluride. The Remine brothers reportedly had been prospecting in the area since 1873. Initially, gold was retrieved from the placer deposits through panning, and, by 1876, some 30 miles of the San Miguel River was being panned (Parker 1974:173). The gold found in the placer deposits along the San Miguel River was fine, due to the nature of its deposition, whereby the degradation and erosion of quartz veins released the gold (Wells 1969). Once gold particles were released from the parent rock, they were transported by glaciers or streams and eventually deposited along the edges of glacial valleys or within terrace gravels along the banks of rivers. Continual down-cutting of the rivers left gravel terraces isolated on benches and slopes above the river bed. The placer deposits on the slopes above the river were difficult to work, owing to their being located above the bed of the river where water was not readily available, being of a heavy nature, and requiring the movement of large boulders to gain access. It was also difficult to obtain sufficient water to work the claims above the river; because the deposits were above the level of the river, water from the few tributary streams were transported by ditch and flume to some of the claims. Compounding these problems, the placer deposits were of a low grade with the value coming largely from silver and lead (Henderson 1926). Historically, the most notable placer deposits along the San Miguel and Dolores rivers were found in three principal areas. Two of the areas were along the San Miguel River. These were a 9-mile-long section of river between Telluride and Sawpit and up the Lake Fork of the San Miguel River to Ames and a 22-mile-long stretch west-southwest of Cottonwood Creek that passes through the town of Naturita. The third area was a 6-mile-long section of the Dolores River southeast of Roc Creek (Parker 1974:172).

By the early 1880s, the San Miguel and Dolores Rivers and their tributaries had been prospected and numerous placer mining claims had been filed, but none were highly successful because the gravel deposits were difficult to work in sufficient volume to be profitable. In particular, side drainages did not provide sufficient water for more than a few months in the spring and the

ability to divert water from major water courses was difficult in the narrow valleys and required large amounts of capital to construct systems of sufficient size for hydraulic mining to be attempted.

Hard times in the mining industry began with the Panic of 1893 and continued into the new century with labor unrest that centered on the town of Telluride. Gold-producing mines in the region were not nearly so hard hit by the depression as those that produced mainly silver (Henderson 1926). The consistent price of gold stimulated a resurgence of placer mining in the project area from the early 1890s to about 1905. New mining claims were located and the earlier claims began to be worked again. A resurgence of placer mining interest seems to have taken place in the Lower San Miguel Mining District, centered on the camp of Saw Pit, which was established in 1895 (Wolle 1949). Another small community of miners known as Newmire was located at the junction of Big Bear Creek and the San Miguel River. A post office was established for Newmire in 1895, and in 1899 it was reported that about 20 people lived there (Carhart 1896; Gibbs 1899). The largest hydraulic mining operation in the upper San Miguel River area was that of the Keystone Hydraulic Mining Company, below Telluride just outside the current project area.

Hydraulic mining of the Keystone Hill area was first attempted by David T. Thompson in 1881 (Horn 2005). He constructed a dam across the San Miguel River where water was diverted into a flume and penstock system for the operation of giant nozzles. Legal challenges to his operation forced him to cease after only one season (Telluride *Daily Journal*, September 13, 1898; April 2, 1904). The hydraulic system remained abandoned until 1896 when the Keystone Placer and other mining claims encompassing about 600 acres of land extending 4½ miles along the San Miguel River from the top of Keystone Hill to Bear Creek were purchased by A. J. Clark, David Swickheimer, and Walter Beam. A court order in early 1898 prevented the company from appropriating water for their purpose, even though the hydraulic works had been abandoned for 15 years (Telluride *Daily Journal*, March 27, 1896; May 10, 1898). Soon thereafter, Robert Casey leased the property and began using the revamped flume and penstock system for hydraulic mining. He installed a Ludlum hydraulic elevator system that lifted gravel from a pit into sluice boxes. By late 1899, he had reached bedrock where the richest gravels were expected to exist. Plans were made to dam the river at a higher point than the existing dam and to construct a flume of double the capacity and twice the length of the one in use so that sufficient water and pressure could be obtained to operate two 6-in.-diameter Giant nozzles. Casey began seeking investors in the venture and incorporated the Keystone Hydraulic Mining Company in March 1901 with $5,000,000 in capital stock (Telluride *Daily Journal*, September 13, 1898; December 28, 1900:1; March 11, 1901). Work began immediately on improvements to the system with the construction of a 2,500-ft.-long 6 by 12-ft. wooden box flume and a 2,800-ft.-long penstock that had a drop of 550 feet. Loosened sediment was passed through sluice boxes built on bedrock (Telluride *Daily Journal*, October 11, 1901). The flume was constructed to take the entire flow of the river at its highest flow (Telluride *Daily Journal*, March 27, 1903; September 7, 1903; October 1, 1903). Difficulties with the water delivery system and a low return resulted in the company going bankrupt in 1906 (Telluride *Daily Journal*, May 2, 1906; July 28, 1906).

Operations farther down the San Miguel and Dolores Rivers were not of the same scale as the Keystone Hydraulic Mining Company except for that of the Montrose Placer Mining Company, which resulted in the construction of the Hanging Flume (Pfertsh 2005). The Lone Tree Mining Company located five placer mining claims along the gravel beds of the Dolores River approximately 4 miles north of the confluence of the Dolores and San Miguel rivers between 1883 and 1885. From south to north, these were the Bancroft Placer, the Little Louise Placer, the Index Placer, the Remington Placer, and the Lizzie F. Placer (Montrose County Recorders Office, Book 13, Pages 38, 87-89, 93, and 94). All but the Remington Placer were patented in May 1885. The company went to work washing gold from the gravels on their claims relying solely on water available from Mesa Creek until the latter part of 1888, following their sale to the Montrose Placer Mining Company in the fall of 1887. The company was incorporated in Illinois with capital stock of $5 million. The

company was managed by Nathaniel P. Turner, rumored to have been an experienced miner from California (Hall 1895:235). It was not long before the company was aware that the seasonal water from Mesa Creek was inadequate for the scale of mining that would be necessary to make the venture profitable. Plans were made to construct a flume from the San Miguel River to their claims. The company began construction of the flume in the spring of 1889 (Rockwell 1999; Silver 2003). Construction continued until May 1891 when the flume was completed to the Bancroft Claim, the southernmost of the claims held by the company. The completed flume was 10 miles long, though it was originally planned to be 13½ miles long. Evidently the company was financially unable to construct the final 3½ miles, which would have provided water to all of their claims, and planned to construct the remainder after they had profited from mining on the Bancroft (*Grand Junction News* May 16, 1891, July 4, 1891).

The flume construction financially drained the company and their holdings were sold by the County Sheriff in September 1893 to Nathaniel Turner. In an effort to protect the investors of the Montrose Placer Mining Company, Turner established the Vixen Alluvial Gold Mining Company which took over ownership of the property in 1897 (Turner 1899). The new company prepared to construct the remaining 3½ miles of the flume, but financial difficulties and recognition that the gold washed from the gravels was too fine to be collected efficiently in the sluice boxes resulted in failure of the company and their holdings were once more sold by the County Sheriff in 1899. The property was acquired by the Montrose Mining Company in 1900. The company seems to have used the flume for mining for a short time in 1903, but their mining quickly ceased when the flume suffered a catastrophic failure that the company was unable or unwilling to repair (Montrose Mining Company 1904:2).

Industrial Minerals: Potassium and Sodium

The Mineral Leasing Act of 1920 included potassium and sodium in addition to coal, oil, gas, and other hydrocarbons. Prior to the introduction of the act, these minerals could be acquired under the existing mining laws. The extent to which they were procured in the UFO was probably negligible, if at all. Potassium is used for many industrial applications as a chemical agent for dissolving precious metals and making glass, soap, fertilizer, and explosives. The earliest potassium leases in the UFO took place between 1927 and 1929 in the eastern Paradox Valley region. More extensive leasing took place west of Naturita to the Utah state line beginning in 1954. This was in much of the same area that oil and gas leasing was underway in and around the Paradox Valley. Most areas ceased to be leased in the late 1950s and early 1960s, but a few areas in the eastern Paradox Valley area continued to be leased until about 1970. It is unknown if any of these leases identified viable potassium deposits or if any mining of potassium took place as a result.

Beginning in 1930, a small area in the Paradox Valley near Bedrock has been leased for sodium. A salt evaporator is situated within the lease area on BLM land at a salt spring in the Paradox Valley. It was constructed in 1937 by the U. S. Vanadium Corporation for use in their mill at Uravan. To prevent salt from entering the Colorado River drainage system, the salt is currently pumped below ground (Templeton n.d.).

Uranium, Radium, and Vanadium

The following discussion of uranium, radium, and vanadium mining in western Colorado is based on a of guide for assessing these resources by Twitty (2008a) summarized by Moore (2009). The mining of the radioactive metals radium and uranium, has played a very important role in the industrial development of western San Miguel, Montrose, and Mesa counties, bringing these relatively remote areas onto the world stage as principal producers of radioactive materials. Vanadium is an industrial mineral, used primarily as an alloy in steel making, but has such an interrelated history with that of uranium and radium, that it will be included with the following discussion. From the last decades of the nineteenth century to the first decades of the twenty-first

century, changing prices for radioactive metals, as well as shifting industry regulation strategies put in place by the U. S. Government, have resulted in a series of mining booms and busts in the area, each of which has left a profound impact on the cultural landscape of the region. Recently, Twitty (2008a) has identified six periods of significance for radioactive metals mining in west-central Colorado.

The Radium Interest, 1898-1905

Uranium ore was first discovered in western Colorado around 1880, when Tom Talbert and his brother, who were prospecting for gold and silver in the area of Roc Creek between Paradox Valley and Sinbad Valley, encountered a bright yellow material embedded in a sandstone formation. Not knowing what sort of material was present but suspecting that they had happened upon potentially valuable ore, Talbert staked a claim, but an assayer in Leadville was unable to identify the ore (Chenoweth 1993; Twitty 2008a). In 1896, Tom Dullan relocated the claim and sent samples to the Smithsonian Institution, where it was determined to be a previously unknown type of uranium and vanadium ore. Dullan was unable to find an outlet for the ore immediately; however, in 1898, he leased the claim to Gordon Kimball, an ore buyer in Ouray. Through his acquaintance with French metallurgist Charles Poulot, Kimball sent samples of the material to the European scientific community. Kimball was informed that the yellow ore, named carnotite after French chemist Adolphe Carnot, was of exceptionally high quality, compared to other known uranium and vanadium ores, and, therefore, was of extraordinary economic and scientific value. A 10-ton shipment of ore sent to France yielded Kimball $26,000, which garnered worldwide attention (Chenoweth 1993; Twitty 2008a). Radium, found in association with uranium, was much sought after in the late 1890s for medical experiments, principally by French scientists Antoine Henri Becquerel and Pierre and Marie Curie, who also received samples of carnotite from Poulot (Twitty 2008a).

The high price of radium stimulated a mining boom in the Colorado Plateau region, focusing on carnotite ore that contained uranium, vanadium, and radium. Although ores were initially shipped to Europe for processing, the high price of raw material transportation soon resulted in attempts to refine uranium and vanadium ore in western Colorado. Charles Poulot and F. Voillesque began testing methods of carnotite processing at an experimental mill on La Sal Creek (Chenoweth 1993; Twitty 2008a). Based on knowledge gained during these experimental mill workings, Poulot and Voillesque, in association with a third partner named James McBride, organized the American Rare Metals Mining & Milling Company and constructed a more formal mill on the Dolores River at Camp Snyder (Chenoweth 1993; Twitty 2008a).

Although not an unbridled success, the American Rare Metals Mill was profitable for several years and enticed miners and prospectors to the area. The area around Slick Rock was particularly, productive, spurring a boom in claim staking between 1902 and 1905. Most mines from this period were relatively small and involved rim deposits that did not require extensive mine workings for extraction. Altogether, the American Rare Metals Mill turned out approximately 15,000 pounds of uranium and vanadium while under ownership of the American Rare Metals Mining & Milling Company (Chenoweth 1993). After Poulot returned to France in 1903, the mill was sold to the Western Refining Company and then the Dolores Refining Company in 1904, which constructed a new mill based on the operating processes used at the original mill. The carnotite industry in western Colorado declined by 1905 when European-produced pitchblende was found to be a more economical source of radium (Twitty 2008a).

The Radium and Vanadium Boom, 1906-1922

In 1901, a major source of vanadium was discovered by A. B. Frenzel along the San Miguel River near Newmire in the form of roscoelite, which was not associated with radium or uranium. Roscoelite occurs in sandy micaceous deposits in the Entrada and possibly Navajo sandstone along both

sides of the San Miguel River from Newmire (Vanadium) to Placerville and along Bear Creek, Fall Creek, and Leopard Creek, all tributaries of the San Miguel River (Colorado 1961). The addition of vanadium to steel increased its strength and was an important innovation in the use of steel for manufacturing and machinery. Vanadium gave steel higher tensile strength, greater elasticity, more torsional strength, and better wearing qualities at high speed and high temperatures. Vanadium alloyed steel began to be used extensively in automobile parts, springs, gun barrels, and high speed tools (Shumway 1970). The United States Vanadium Company located the first vanadium claims in the area along Big Bear Creek early in 1901. Their headquarters was at Newmire (Lay 1903). By 1906, the vanadium-bearing roscoelite deposits were fairly well developed at Newmire and were more productive than lower grade carnotite deposits found elsewhere on the Colorado Plateau (Shumway 1970). To take advantage of the roscoelite deposits, the Vanadium Alloys Company was formed about 1904. Other mining companies in operation during the vanadium boom along the San Miguel River in the vicinity of Newmire, which was recognized as the heart of vanadium mining in North America, included the General Vanadium Company, the Primos Chemical Company, Wolcott & Waltemeyer, the Colorado Vanadium Company, the United States Vanadium Company, the Rare Metals Mining and Milling Company, and the Crucible Steel Company of America (Horn 1993; Twitty 2008a).

Although roscoelite was known to contain vanadium, no means had yet been established by which to extract vanadium concentrate from the ore. The Vanadium Alloys Company constructed an experimental mill in 1905, using a salt roasting and lixiviation separation process. This was the first salt-roast plant on the Colorado Plateau. When the technique was found to be successful, a formal mill was built at Newmire by the Primos Chemical Company that began commercial production of vanadium in 1910. The mill was destroyed by fire in February 1919, but was rebuilt and in production in September of that year (Colorado 1920:11; 1961; Horn 1993; Twitty 2008a). The focus on vanadium mining and production prompted the community to change its name from Newmire to Vanadium in 1913. The mill at Vanadium was the only large vanadium processing mill in Colorado (O'Rourke 1992; Sanderson 1917; Simmons 1913).

The Primos Chemical Company holdings were purchased by the Vanadium Corporation of America, beginning in 1919. They also purchased the holdings of the other vanadium mining companies operating in the area at about the same time. Mining and processing of vanadium at Newmire/Vanadium seems to have continued intermittently through about 1924. New deposits of roscoelite found at Rifle, Colorado, became the focus of vanadium production by the U. S. Vanadium Company beginning in about 1924. The U. S. Vanadium Company was acquired by Union Carbide in 1926 and became the U. S. Vanadium Corporation. Production of vanadium shifted to a new mill built at Uravan by the U. S. Vanadium Corporation in 1936 that processed carnotite ore (Husband 1984; Shumway 1970).

Carnotite mining began to stage a comeback in western Colorado around 1910, based on increased recognition of radium as a medicinal tool and knowledge that carnotite ore yielded significant quantities of vanadium (Twitty 2008a). Founded in about 1910 by Joseph, James, and John Flannery, Standard Chemical Company of Pittsburgh, Pennsylvania, quickly established and leased a number of claims in the Paradox Valley area. Initially, Standard Chemical shipped carnotite ore to an experimental mill in Pennsylvania for processing; however, by 1912 a concentration mill, known as Joe Junior, was built in Paradox Valley to remove sand from the carnotite ore and thereby reduce the weight of the material that was shipped to their Pennsylvania mill (Chenoweth 1993; Twitty 2008a). During this period, the Colorado Carnotite Company and the Radium Company of America also played important roles in radium ore mining, purchasing, and refining. The Radium Company constructed another set of radium refineries in Pennsylvania. However, technological shortcomings at these refineries continued to have a negative affect on the profitability of radium ore mining and production, as the majority of western Colorado carnotite ore was still shipped to Europe for refining (Twitty 2008a).

The beginning of World War I in 1914 caused a decrease in demand for radium and vanadium by disrupting international markets and shipping. By 1917, with European radium refineries transformed into other types of production facilities for the war effort, the European radium supply had dwindled substantially, forcing European radium interests to turn to American refineries to fulfill their needs for the material. Demand for carnotite ore increased rapidly, as the production of radium-based luminous paint for war instrument dials reinvigorated the industry (Amundson 2002). The demand for vanadium-alloyed steel for the war effort, increased production briskly, encouraging American carnotite producers to develop efficient means of extracting vanadium from carnotite. In 1917, western Colorado became the world's leading radium production area. During the 1910s, drilling techniques improved sufficiently to enable identification of carnotite ore away from the rim exposures, substantially increasing the amount of ore available for mining and processing. The region retained the status of world leader in radium production until approximately 1922, soon after high-grade pitchblende ore from the Belgian Congo, first discovered in 1913, was introduced on the world market at a price intended to eliminate American producers. Because of the plummeting price for radium, most mining and milling of carnotite ceased on the Colorado Plateau by 1923; radioactive metals mining in Colorado was essentially dormant until economic conditions caused it to revive in 1935 (Chenoweth 1993; Hahne 1989; Twitty 2008a).

Depression-Era Revival, 1935-1940

Carnotite production in western Colorado was made profitable again around 1935, when economic recovery following the nadir of the Great Depression began to raise demand for American vanadium. Additionally, economic uses for uranium were becoming increasingly important, creating a developing demand for the material. Howard Balsley of Moab began buying uranium from various western Colorado sources in 1934, which he sold to the Vitro Chemical Company for use in ceramic and chemical manufacturing (Horn and Archimede 2003; Twitty 2008a).

In 1935, the United States Vanadium Corporation (USV), previously acquired by Union Carbide & Carbon Corporation in 1924, established a concentration mill facility and company town at the former location of the Joe Junior Camp. Through the USV, Union Carbide spent the years between 1923 and 1934 acquiring carnotite claims throughout western Colorado. They also purchased the Standard Chemical Company and its defunct mill and camp at the old Joe Junior site. The new mill produced vanadium, radium, and uranium concentrates from carnotite ore using newly developed, efficient technology. The concentrates were sent to a refinery in Denver owned by the Shattuck Chemical Company. Workers at the mill and mines lived in the company town of Uravan, the name being a combination of the words "uranium" and "vanadium." The town housed 250 people who benefited from a full range of medical, entertainment, and commercial facilities (Twitty 2008a).

Carnotite production in western Colorado began to soar, with western Colorado emerging again as a world leader in vanadium production in 1937 (Twitty 2008a). In addition to the mill at Uravan, North Continent Mining, Inc. operated a second mill at Slick Rock that had been purchased from the Shattuck Chemical Company in 1934 (U. S. Department of Energy 2009). In 1939, a third mill was constructed in Gateway by the newly organized Gateway Alloys, Inc. and, in 1940, the Vanadium Corporation of America (VCA) put another mill into operation at Vancorum near Naturita. Overall, the opening of these mills and the increased profitability of carnotite mining and prospecting drew flocks of workers to the area, with substantial increases in population observed between 1930 and 1940 in almost every town in the area (Twitty 2008a).

World War II, 1941-1945

The beginning of the involvement of the United States in World II, in 1941, brought in a new period of significance for radioactive metals mining in western Colorado. In 1941, vanadium was classified by the U. S. Government as a strategic metal because of its importance in the production of steel alloys. As part of this trend, the Metals Reserve Company was established, a base price was set

for vanadium, and buying stations were put in place at Moab, Thompson, and Monticello, Utah (Amundson 2002:7-8). In addition to its applications as a metal alloy, vanadium was also significant to the U. S. Government because of its association with uranium. In the late 1930s, the principles of radioactivity and the energy potential of nuclear chain reactions had begun to be understood, including its potential as a fission explosive device, and uranium was determined to be the radioactive material with the most potential for weapons development. Although other international sources of uranium were available, including mines in the Belgian Congo and Canada, the western Colorado sources remained extremely significant within world trade.

Because of their location within the United States, uranium resources in western Colorado were chosen for extensive utilization by the Manhattan Project, which was charged with secretly developing atomic bomb technology. Beginning in 1942, the Bureau of Mines and U. S. Geological Survey combined to conduct secret core-drilling programs at select locations in the Salt Wash Member of the Morrison Formation on the Colorado Plateau. To disguise these uranium procurement efforts, exploration was reported to be for vanadium. The increased interest resulted directly in the expansion of transportation and communication infrastructure in the area, which was crucial to increasing efficiency in both explorations for radioactive metals and in mining and milling of the metals (Twitty 2008a).

To maximize the uranium resources available in western Colorado, the U. S. Government hired the USV and the VCA to assist with uranium acquisition. For the initial phase of the project, between 1942 and 1944, uranium ore for the Manhattan Project was acquired as vanadium mill tailings from mills in Naturita, Durango, Slick Rock, Gateway, and Loma (Horn and Archimede 2003). By 1944, those supplies began to run out, and the mining and processing of crude carnotite ore began on a large scale with the ultimate intention of obtaining uranium. The deployment of the first atomic bomb over Hiroshima in 1945 ended the secrecy concerning uranium procurement in western Colorado, and the role of the radioactive metals produced there for the war effort was revealed. The mining economy of western Colorado collapsed in 1945 when the U. S. Government announced the previous year that its uranium and vanadium supplies were sufficient and no new purchases would be made. With fixed prices repealed, vanadium prices were determined by the free market and uranium had no genuine marketable purpose with the exception of nuclear weapons production. Consequently, by 1946, the mines and mills in western Colorado were closed, and miners and their families began to move elsewhere (Twitty 2008a).

The Atomic Era, 1946-1963

In 1946, the Atomic Energy Act was passed to promote the use of nuclear energy for both domestic and defense purposes. Under the act, fissionable materials were placed under the control of the federal government, though exploration and mining of uranium by the public was encouraged. The government established prices for uranium ore and was the sole buyer, refiner, and producer of uranium for atomic use (Amundson 2002:19-20). The act also created the Atomic Energy Commission (AEC), which was charged with developing the nation's nuclear technology and resources. Because of national security concerns, the AEC chose to emphasize uranium procurement in western Colorado over the purchase of supplies from outside the U. S. In 1947, the AEC contracted with the VCA to reopen the Vancorum mill. Subsequent contracts with the USV reopened the mills in Rifle, in 1947, and Uravan, in 1948, and contributed significantly to economic recovery in the region. A contract with the Climax Uranium Company, in 1948, resulted in the construction of a new uranium and vanadium concentration mill in Grand Junction (Chenoweth 1993).

The AEC joined with the U. S. Geological Survey to identify and withdraw public lands where uranium was known to exist and lease them for mining. The sedimentary geology of the area was intensively studied to find and quantify carnotite deposits. A massive drilling program was implemented to find buried ore deposits away from the canyon rims. Prominent publicity and guaranteed prices resulted in large numbers of citizen prospectors fanning out across the Colorado

Plateau in search of uranium deposits that would make them rich. The sudden influx of private prospectors created a region-wide economic and population boom. Following the original mining laws developed for hard-rock mining in the nineteenth century, prospectors with little or no capital employed Geiger counters or visual indicators to find ore deposits. Meanwhile, companies with more resources conducted drilling programs or excavated large areas with heavy machinery. Independent prospectors either developed their own claims or sold their claims to one of the larger companies, such as the USV, the VCA, or the Climax Uranium Company, who in turn leased the claims to smaller parties, often with some development assistance. By the early 1950s, in addition to the Vancorum, Uravan, Grand Junction, and Rifle mills already in operation, other mills were opened in Monticello and Moab, Utah (Twitty 2008a).

The boom in uranium mining continued through the 1950s, bringing miners from all over the area, including a substantial number of Navajo miners recruited from reservations in Arizona, New Mexico, and Utah. Populations soared within towns in the area, especially in Naturita, which became a central "hub" for the mining activity. Uravan, Gateway, and Nucla also boasted substantial populations during the Cold War era. In response to the population explosion, the U. S. Government sponsored significant improvements in transportation infrastructure, expanded the electrical grid throughout the area, and built schools, resulting in a transformation of the area that is still evident today. Less positive changes included substantial environmental pollution and degradation from unregulated industrial activities, the products of which are still undergoing remediation through reclamation activities (Twitty 2008a).

In 1958, the government announced that supplies of uranium had reached a point where unrestricted exploration and purchase was no longer necessary. Purchases after November 24, 1958, would only be for amounts deemed necessary, could come only from already developed reserves, and prices for uranium ore would no longer be guaranteed. Even with the new restrictions, the quantity of ore shipped to mills increased through the early 1960s. Apparently aware that another sudden purchasing halt, such as the one that occurred following World War II, would send the economy of western Colorado into a downward spiral, the U. S. Government retracted its buying programs gradually. Consequently, though production slowed during this period, many of the larger mining companies were able to remain in business. In 1963, the AEC determined that it would cease purchasing vanadium because of a decreased demand that began in 1961. Soon thereafter, mills in western Colorado began to close, and, although carnotite ore could still be shipped elsewhere for processing, the high associated costs ensured that the boom of the AEC exploration era was finished (Twitty 2008a).

The Last Boom, 1974-1980

During the 1970s, an increased focus on nuclear power as a potential domestic energy source revived the mining industry in western Colorado for a brief time. As demand increased, lower grades of uranium ore became marketable, resulting in an increase in mining. The mill at Uravan, still being operated by Union Carbide prior to 1974, quickly began to take ore from throughout western Colorado. The increase in activity was brief, as the price of uranium fell steeply between 1979 and 1981. Additionally, increased regulation on the mining industry, intended to combat environmental damage, raised the costs of production substantially. Also, by the late 1970s, the rich, high-grade ore reserves in western Colorado appeared to be nearly exhausted (Twitty 2008a). Together, these factors resulted in a near cessation of uranium mining in the area that lasted into the first decade of the twenty-first century.

Coal

Four coal fields have been identified within the UFO area. These are the Somerset, Grand Mesa, Tongue Mesa, and the Nucla-Naturita Coal Field. In 1909, certain lands classified as having merchantable coal deposits were reserved by the U. S. government as a subsurface mineral. Prior to

that date, lands that were obtained from the public domain did not reserve coal, if it was present, from private ownership. In 1920, the Mineral Leasing Act enabled the government to lease coal lands. Previously, it had been possible to obtain land with coal deposits from the public domain by Mineral Entry.

The Somerset Coal Field in the North Fork of the Gunnison River Valley in Delta County began to be mined in 1902 and resulted in the North Fork Branch of the D&RG being extended northeastward through Somerset in 1903. Coal mines in the Upper North Fork Valley are in the Mesaverde Formation from 8½ to 30 ft. thick. Major coal-producing mines in the coal field as of 2000 were the Somerset, Bowie No. 1, Sanborn Creek, West Elk, Bear, Hawks Nest Nos. 2 and 3, and the Orchard Valley (Kirschbaum and Biewick 2000:B-26-27). The coal mines in the Somerset Coal Field are the largest and most productive in the UFO area. Most have been geared toward commercial coal production for export outside of the area. The Somerset Mine opened about 1902 and was operated by the Utah Fuel Company, a subsidiary of the D&RG. This close association with the railroad company was key to having the rail line extended through the North Fork Valley. It was the largest coal mine in the area (Lee 1912:106; Rockwell 1945:112-113). The Bowie Mine was operated through the old opening of the King Mine. Mining started there prior to 1906 by the Juanita Coal & Coke company. The mine became known as the Bowie Mine after it was acquired by Alexander Bowie (Lee 1912:102-103; Lord 1913:400-401; Rockwell 1945:114). The Juanita Coal & Coke Company made a new opening into the King Mine in 1906 and connected it to the town of Bowie by an incline rail system (Dalrymple 1922; Lee 1912:103-105; Lord 1913:401-402). The Hawks Nest Mine opened sometime before 1907 and operated until 1986 (Lee 1912:107). The Gelwick Mine near Bowie was an early mine of the area that was abandoned in the early 1900s. A group of 25 coal mining claims, known as the Porter Claims, were present along Minnesota Creek, east of Paonia. S. G. Porter was in the process of developing the claims in 1907, but it is uncertain that any became productive mines (Lee 1912:105-107). The Oliver Coal Mine was in operation in the 1930s. It was a small local-production mine that included an electrical power plant powered by slack coal from the mine (Clock 2002:285).

The Grand Mesa Coal Field is near Cedaredge in Mesa and Delta counties. Coal is associated with the Mesaverde Formation, but is sufficiently thick to be mined in only a few locations. Ten large mines were in production near Cedaredge between 1914 and 1972 (Kirschbaum and Biewick 2000:B-20-21). Although some of the mines in the Grand Mesa Coal Field have been quite sizable, production has been almost exclusively for consumption in nearby communities for light commercial or residential use. Mines began being opened in the coal field in the 1880s, but the 1900s to 1920s was the period of greatest production. Fewer and fewer mines operated after the 1920s, but a few mines continued limited operation into modern times. The coal field is also known as the Rollins Coal Field, named for the Rollins Mine, which opened in 1889 10 miles north of Delta (Dalrymple 1922; Lee 1912:84-85; Lord 1913:405). Other mines in the vicinity of the Rollins Mine north of Delta were the Tomahawk, Kuhnley, and Fairview mines (Dalrymple 1922; Lee 1912:82-88; Lord 1913:405-406). The largest number of mines in the coal field was in the vicinity of Cedardge and Eckert. These included the old and new Coalby mines and the Winton, States, Green Valley, Red Mountain, Black Diamond, Davis, Ideal, Hall/Co-Op, Ideal, Old Church, Top, Red Canyon, Western Star, Independent, McGruder, Blossom, and Watson. In the vicinity of Hotchkess were the Bennett, DeGraffenried, Kurtzville, Newman, Burdick, Independent, Landerth, and Leroux Creek mines. Near Paonia were the Farmers/Cooperative, Converse, Conine, Stucker, Dorrance, May, Black Diamond, and Berry (Dalrymple 1922; Lee 1912; Lord 1913). Probably the most unusual mine in the coal field is an isolated coal mine in Wells Gulch west of U.S. Highway 50 above the Gunnison River that dates prior to 1907, but for which nothing more is known (Lee 1912:72; Lord 1913:408).

The Tongue Mesa Field extends northward into Montrose County from Gunnison and Ouray counties. Coal is associated with the Fruitland Formation and is 5 to 40 ft. thick, but little mining has taken place in the field because it is deeply buried in most places with up to 2,500 ft. of overlying

strata. Several small mines in the field supplied local demand in the Montrose area from the 1890s to 1940s (Dalrymple 1922; Kirschbaum and Biewick 2000:B-28-29). The only known mine in the Montrose vicinity, perhaps representing an extension of Tongue Mesa Field, was the Blixt Mine of Swan Blixt. It may have been in the uplift of the Black Canyon east of Olathe (Dalrymple 1922).

Nucla-Naturita Coal Field is mostly in western Montrose County, but extends slightly south into San Miguel County. The coal deposit is only 3-5 ft. thick in the Dakota sandstone. Early mines known to have been in operation in the region were the Cloverdale Mine operated by the Naturita Stores Company, the Liberty Bell Mine of John H. Drott about 1½ miles northwest of Naturita, and the Specht, Missouri, and Knauss mines near Nucla (Dalrymple 1922; Lee 1912; Lord 1913). The only mine that still produces coal from the field is the New Horizon mine, which supplies the nearby Nucla Power Plant (Kirschbaum and Biewick 2000:B-24-25). Coke Ovens were situated along Dry Creek, about 3 miles south along Highway 90 from its intersection with Highway 141 where Standard Chemical later established their headquarters and mill.

Limestone Quarrying

Limestone was evidently quarried in the vicinity of Bilk Creek along the San Miguel River, processed in a lime kiln, and loaded onto the RGS at the Lime siding. The deposit is in the Bilk Creek Sandstone and is known as the Pony Express member of the Morrison Formation, which overlies the Entrada sandstone. This formation of limestone also outcrops at Bridgeport, where limestone may have also been mined, processed in a kiln, and transported on the D&RG.

Timber

The first sawmill erected in the Uncompahgre Valley was set up for the construction for buildings at the Los Pinos Agency in 1875. It was brought into the valley from the original Los Pinos Agency near Chochetopa Dome (Bond 1875b). Settlers trespassing on the reservation in Uncompahgre Park west of Ouray established a sawmill in that vicinity in 1878 to facilitate building construction (Fogg 1878). Soon thereafter, in 1880, the military set up a sawmill on West Horsefly Creek to provide lumber for construction of the Cantonment on the Uncompahgre (Fort Crawford) (Marshall 1981:152).

The ponderosa pine belt of the Uncompahgre Plateau was the focus of logging interests soon after the removal of the Ute in 1881 and settlements emerged in the Uncompahgre Valley. Early, small-scale mills were operated in the woods to provide building materials for settlers. The output from these mills was transported by wagon from the plateau to lumberyards in the towns. It was not until the construction of the RGS between Ridgway and Durango that large-scale sawmilling took place in the region. The railroad created a demand for ties for its construction and maintenance that were supplied from nearby forests. In addition, sawmills increased in number in the woods and along the route of the railroad.

William A. Eckerly established a sawmill on the upper reaches of Happy Canyon Creek, 16 miles southwest of Montrose in April 1882. Eckerly was a partner of Joseph Selig's in the founding of Montrose. Lumber from the sawmill was used in the first wood-frame buildings in Montrose and facilitated the town's rapid growth. The land on which the sawmill was situated was later acquired by Cash Entry by Selig in 1886. It was along the route of Dave Wood Road. Eckerly had been in the sawmill business in Leadville, Gothic, Schofield, and Ruby between 1879 and 1881 (Hall 1895:232, 236, 434-435). GLO maps show that by 1884, Orton's Sawmill had been established along Fisher Creek on Log Hill Mesa. This appears to be the same location where Burton D. and James A. Danforth operated a sawmill by at least 1900. The N. Hotchkiss sawmill is also shown on an 1885 GLO map about 2.5 miles south of present-day Ridgway. Elisha Darling established the first sawmill on the Uncompahgre Plateau at Darling Lake on the Divide Road in the 1880s. Logs were transported off of the plateau along the Transfer Road and brought to the Darling Sawmill at Pea

Green (Marshall 1981:152, 162). Elisha, Esther, and Herman Darling obtained land around the present Iron Spring Campground on the Uncompahgre National Forest in the 1900-1906 period that probably centered on their logging operations. Farther north on the Uncompahgre Plateau was the Wagoner Sawmill, in operation by at least 1895. The mill may have been run by Daniel W. Wagoner. The road from the sawmill ran down Sawmill Mesa to Roubideau Station on the D&RG, but had a branch that also went to Escalante. By 1911, Wagoner was living in Delta and was the superintendent of the Delta Water Works and served as town marshal.

Two of the largest lumber producers on the southern end of the Uncompahgre Plateau were Frank W. Barnes and Samuel P. Gutshall. Barnes was in the lumber business of the area by 1890 (*Silverton Standard* May 24, 1890; *Telluride Journal* January 14, 1899). His sawmill on Iron Springs Mesa in Montrose County was in operation by 1898 and was considered the finest in the area in 1901 (*Durango Journal* October 21, 1901). Barnes had a ranch on land adjacent to the mill and cut timber from tracts of land in the Clay Creek drainage along the Sanborn Park Road. Barnes shipped lumber from Sam's spur, about 10 miles from the mill (*Durango Journal* April 20, 1905, May 15, 1905). Steve J. Adams was the manager of the mill from 1901 to 1907 (*Durango Journal* July 23, 1901, September 24, 1907). In 1908, Barnes was put on trial for illegally cutting timber from federal land. It was calculated that 2,780,548 feet of timber valued at $55,770 had been cut illegally (*Durango Journal* September 11, 1908). In 1908, the planning mill from Barnes sawmill was sold to Charles McKeever of Norwood (*Durango Journal* November 24, 1908). In preparation for closing his lumber operations in 1909, Barnes sold 25 carloads of lumber he had stockpiled at Sams to Thomas McMahon, a lumber dealer in Telluride (*Telluride Journal* June 24, 1909).

Samuel P. Gutshall began in the lumber business in Colorado Springs from 1874 to 1879, whereupon he move his operation to Leadville (Chapman Publishing Company 1899). By 1895, Gutshall had a sawmill in the Iron Springs Mesa/Horsefly area and shipped his output from Haskill/Leonard on the RGS, which was 6 or 8 miles from his mill (*Durango Journal* February 6, 1896). His mill was destroyed by a forest fire in 1898, but he rebuilt and continued producing lumber. Most of his lumber was marketed in Grand Junction, but also had lumber yards Pueblo, Colorado Springs, and Delta (*Silverite-Plaindealer* [Ouray] October 14, 1898; *Durango Journal* November 8, 1905; *Telluride Journal* January 21, 1909). Between 1899 and 1904, members of the Gutshall family (Samuel P., Esther A., Charles D., and Harry P. Gutshall) acquired land between McKenzie Creek and the San Miguel River, northwest of Placerville, which was probably the area they focused upon for their logging. When Gutshall died in 1909, the operation was taken over by his son, Harry P. Gutshall (*Telluride Journal* January 21, 1909). Soon after Samuel Gutshall's death, his estate was sued by the U. S. government for cutting 3,926,440 ft. of timber from federal land between 1902 and 1908, valued at $58,898.60 (*Durango Wage Earner* March 25, 1909). Despite this, Harry Gushall continued to operate the sawmill on Iron Springs Mesa through at least 1912.

The Rice Lumber Company, operated by John F. Rice, had a lumber yard and planning mill in Ouray from at least 1898 to 1911 and operated its own sawmill in Horsefly Park (*Silverite-Plaindealer* [Ouray] September 16, 1898). By 1903, E. E. Burge and a Mr. Dolphin operated the Rice sawmill, which October 11, 1906). George Ruffe purchased the sawmill in 1921 and operated it until at least 1922 (*Durango Journal* August 19, 1921, June 12, 1922, July 25, 1922). The Rice Lumber Company evidently also operated a sawmill at Leonard, which was sold to the Western Slope Box Company in 1912 and moved to Ridgway. The Western Slope Box Company logged on West Dallas Creek, beginning in 1908, for the production of fruit boxes, which they shipped from Ridgway. They installed a larger sawmill in 1909 and established a lumber yard and planing mill in Ridgway (Gregory 1991:36-37). Earlier, Samuel J. Couchman operated a sawmill in the upper Dallas Creek drainage by 1900.

Albert E. and Matt Dolphin, Louis C. Barth, and Charles A. Dollarhide were small lumber producers working in the same general areas as Frank Barnes and the Gutshalls. Dollarhide's sawmill was in operation from 1899 to 1902. Barth reportedly ran a sawmill from 1898 to 1903. The Dolphins seem to have operated from about 1900 into the early 1920s (*Durango Journal* April 16 1900, January 30, 1902). Dollarhide, Barth, and the Dolphins acquired land between McKenzie Creek and Horsefly Creek on present Uncompahgre National Forest land in Montrose and San Miguel counties, suggesting the areas in which they were operating. Matt Dolphin also had a sawmill in the Delta area by 1900, which may have preceded his operation in the Horsefly/Iron Springs area. Later, in 1923, the Dolphin brothers acquired land on the mesa west of Haskill/Leonard.

Local consumption sawmills were the primary type in the Norwood and Paradox areas. The first sawmill in the area was established to cut lumber for the Hanging Flume in 1889. The sawmill was installed by Buddecke & Diehl of Montrose. It was initially situated on Pine Flats in what is now the Manti-La Sal National Forest west of Buckeye Reservoir in 1890. When it was found to be a trespass on land in Utah, the mill was moved to Carpenter Ridge (Pfertsh 2005). The first commercial sawmill was established by Charles H. McKeever next to the town of Norwood in 1901; he had a second sawmill and planning mill near the base of Lone Cone, near Gurley Reservoir (*Durango Journal* March 9, 1901). He moved the sawmill near Gurley Reservoir to McKee Springs in 1915 (*Durango Journal* December 2, 1915). Roger Williams also set up a sawmill in 1901, on the east end of Wrights Mesa near Wrights Spring (*Durango Journal* March 9, 1901). He had earlier acquired land a few miles northwest of Norwood where Williams Reservoir probably marks the location of an earlier sawmill. In late 1908, McKeever bought planing mill equipment from F. W. Barnes to put in his mill at Norwood (*Durango Journal* November 24, 1908). Lumber from this mill was used to construct buildings at Redvale (*Durango Journal* May 9, 1911, May 11, 1911). In 1912, McKeever planned to install a sawmill on Pine Flats and establish a lumber yard at Redvale (*Durango Journal* November 11, 1912).

Charles McKeever may have set up the Telluride Land & Lumber Co. sawmill along the San Miguel River 9 miles below Placerville, just across the Montrose County line in late 1905. The mill began operation in early 1906 (*Durango Journal* December 12, 1905, December 15, 1905, April 23, 1906, November 18, 1909, May 9, 1910). Bulkeley Wells seems to have been one of the major owners of the mill (*Telluride Journal* June 28, 1906, January 26, 1911). In 1907, Steve J. Adams became manager of the company and may have acquired the sawmill by 1910 (*Durango Journal* September 24, 1907; *Telluride Journal* August 8, 1910, December 18, 1910). Adams may have moved the sawmill to the Paradox area, where it operated in 1911 and 1912 (*Telluride Journal* July 6, 1911, August 24, 1911). During this time, Adams was in charge of construction of the Nelson Ditch (*Durango Journal* December 20, 1910, June 9, 1915).

The Colorado Cooperative Company established a sawmill in Cottonwood Canyon near Pinon to supply lumber for construction of their buildings and irrigation flumes. This may have been the sawmill operated by George Doublass in 1900. Lumber from the sawmill was used to build the Cottonwood Trestle across Cottonwood Creek in 1903, which was the highest trestle in the world at the time of its completion (O'Rourke 1992:87). The sawmill equipment had earlier been used to cut the lumber for the Hanging Flume and was moved to the Pinon area by the Colorado Cooperative Company (Pfertsh 2005)

William H. Ray operated a sawmill along Tabeguache Creek above the forks of Bucktail Creek by 1909. He sold the mill to Bert Kenshall of Nucla in late 1909, who installed new equipment in 1911 (*Durango Journal* November 20, 1909, May 27, 1911, June 29, 1911). In 1911, C. O. Cooper established a sawmill in the Bucktail Creek drainage on land obtained from the Colorado Cooperative Colony to supply his lumber yard in Nucla. The lumber yard was destroyed later in the year and Cooper planned to build a new office and lumber shed at the same location (*Durango*

Journal March 2, 1911, June 3, 1911, June 8, 1911, September 16, 1911; *Telluride Journal* September 7, 1911).

The Hardman family of Redvale established a sawmill at Cedar in 1910 (*Telluride Journal* June 9, 1910). This was operated by Edgar J. Reed & Company for the San Miguel Development Company in 1911, who hauled the lumber to Placerville for shipment to Telluride (*Telluride Journal* February 23, 1911; January 26, 1911). George Ruffe and Bert Frazier operated the sawmill earlier in 1911 (*Telluride Journal* March 30, 1911). Wade Hardman took over the mill in 1914 (*Durango Journal* May 16, 1914).

A small amount of lumbering took place on Hastings Mesa in the 1890s. In 1897, it was reported that Lewis C. Barth and Franklin Schmeck had bought the old Brown sawmill on Alder Creek. Schmeck had land near Willow Creek along Last Dollar Road about 1.5 miles southwest of Noel that may have been suitable for logging. They evidently moved the mill to the Fall Creek area and hired Charles A. Dollarhide to operate it. The mill may have operated until about 1899 (*Durango Journal* July 29, 1897, December 18, 1897). Other small logging operations on Wilson and Specie Mesas soon followed. The first may have been a mill operated by Albert Hiett and a man named Anderson from 1903 to 1907. Frank and Albert Hiett owned land on Wilson Mesa 1.5 mile southeast of Fall Creek. Charles Anderson acquired adjacent land in 1922, so may have been the Anderson in partnership with Albert Hiett. Ed Woods, one of the owners of Woods Lake, opened a sawmill in 1907 to produce lumber for buildings Ed and A. T. Woods planned to build at Sawpit (*Durango Journal* June 17, 1907). Walter W. Brownlee, George Fairchild, and a man named Dillon bought a sawmill from Telluride lumber dealer Andy McMahon and moved it to the upper forks of Bear Creek on Wilson Mesa along the Silver Pick Road in August 1907 (*Durango Journal* August 5, 1907). The sawmill headquarters was at Newmire and probably provided lumber and timbers for the nearby vanadium mines. The sawmill operated until at least 1911. On Specie Mesa, rancher Charles A. Scott set up a sawmill December 5, 1914). The sawmill was probably Hughes Ditch near Specie Creek, north of Lone Cone and probably provided new settlers to the area with lumber for building construction.

Sawmills in the upper North Fork Valley region were generally for local consumption and of small size. Calvin Otis Rogers moved to what became known as Rogers Mesa. He had a sawmill, box factory, and planing mill on Leroux Creek, 16 miles from Hotchkiss. He had previously operated a sawmill near Beulah in 1880 (Moser 2001). His sawmill continued to be operated by his sons W. F. and George Rogers until at least 1900. Sawmills were operated by Frank Lambertson on the Dyer Fork above Crawford. Mills and box factories were operated on Terror and Hubbard Creeks for local consumption and to satisfy the fruit packing industry of the North Fork Valley (Rockwell 1945:91-92). The Endner sawmill on Kebler Pass was the first of any size in the upper North Fork Valley area. It was built to supply crested Butte with lumber in the early 1900s. The first sawmill on the Grand Mesa was established above Kiser Reservoir in 1909. It was operated by Orlen Kitch, who opened the first lumber yard in Cedaredge (Austin 1988:16).

Oil and Gas

Mineral leasing for oil and gas and for potassium and other minerals began on federal lands in 1920; it is possible that earlier oil and gas exploration took place in certain areas. The earliest oil and gas leasing in the region began in 1921 in two areas. The first was a small area west of the Gunnison River above Peach Valley southeast of Delta. The second was a larger area encompassing the eastern half of the Paradox Valley and extending as far east as Naturita. Leasing was infrequent from about 1930 to 1948. Beginning in the mid 1950s, more extensive oil and gas leasing took place in two areas. The first is north of Crawford and west of Paonia that extends west to the Gunnison River north of Delta. The second area is west of Naturita, including all of the Paradox Valley area to the Utah state line. No developed oil fields of historic age are known on BLM lands in the UFO.

Electrical Generation

The Montrose Electric Light Company was formed on February 8, 1889 by P. A. Hiebler, Alonzo Hiebler, J. E. McClure, Fred Hamlin, William A. Eckerly, and Charles E. McConnell to provide electrical power to the town of Montrose. The first power plant was a Direct Current unit in the Hiebler planing mill. The water wheel used to run the planing mill during the day was used to generate electricity at night. During low water, a steam engine was used to run the generator. The generating plant was moved to the Montrose Flour Mill in 1892, where it was powered in the same manner as before. The company was taken over by E. S. Kassler of Denver in 1894 and was reorganized as the Montrose Electric Light & Power Company in 1898 by E. S. Kassler, Charles N. Kassler, and Denham P. Barnes. New power equipment was installed, but it remained in the Montrose Flour Mill. A new power plant building was constructed in 1899. Over the next few years, higher capacity equipment was installed, but none worked very satisfactorily. Needing more room, the company purchased the Montrose Flour mill in 1905 and installed 150-kW and a 50-kW alternating-current generators run by 300-HP and 75-HP steam engines. The plant was sold to the U. S. Light & Traction Company on January 18, 1906. Twenty-four hour service from the plant began in June 1909, resulting in many businesses and homes in Montrose subscribing for service. Power from the plant was used to open the gates of the Gunnison Tunnel by President Taft on September 23, 1909. The company was purchased by the Federal Light & Traction Company in 1910. In an attempt to consolidate power plants and distribution facilities in southwestern Colorado, E. A. Phinney and Carl J. Sigfrid obtained an option on the Montrose Electric Light & Power Company and finalized its purchase on December 31, 1912. The new owners planned to connect Montrose and Delta to Ouray with a transmission line that would be provided with hydroelectric power from the Ouray Power Plant. On April 17, 1914, the company was acquired by the Western Colorado Power Company (Western Colorado Power Company 1937:90-100).

The Delta Electric Light Company was formed by J. E. Shue, E. D. Blodgett, and M. A. Shue on July 28, 1902. They installed a 45-kW steam-powered generator in a building next to the Independent Lumber Company's planing mill. The company obtained a franchise to provide electrical lighting to the town of Delta in 1905. A fire destroyed the power plant building, but much of the equipment was still usable. A larger power plant was constructed in 1908 and 24-hour service was instituted in 1911. Carl J. Sigfrid and E. A. Phinney bought the company on December 31, 1912 as part of their plan to consolidate the electrical generation and distribution in Ouray, Ridgway, Montrose, and Delta. On April 17, 1914, the company was sold to the Western Colorado Power Company (Western Colorado Power Company 1937:87-89).

The town of Ridgway was supplied with electricity from the Ouray Power Plant beginning on December 16, 1910, soon after an electrical substation was constructed. Distribution to the town was under the auspices of the Ridgway Electric Company, organized by E. A. Phinney, Carl J. Sigfrid, and L. C. Stadler. The first rural service from the system was extended to the Orvis property 2 miles to the north with a 10-kW distribution line on January 17, 1913. On April 17, 1914, the holdings of the Ridgway Electric Company were sold to the Western Colorado Power Company with the Ouray Electric Power & Light Company properties (Western Colorado Power Company 1937:85-86).

A 10-kW steam-powered generator installed in 1921 was the first power plant in Cedaredge. It was operated by the Cedaredge Electric Company of Fred and Warren Parker. They installed a 90-kW generator in 1922, which was replaced by a 150-kW unit in 1928 enabling service to be extended to fruit packing plants on the edge of town and to other rural customers. The company was unable to keep up with the demand for service in outlying areas, so the company was sold to the Western Colorado Power Company on March 1, 1929. Once part of the Western Colorado Power interconnected system, the town finally had service 24 hours per day (Western Colorado Power Company 1937:111-113).

James and Jesse W. Beezley formed the Paonia Electric Light Company and installed a power plant in October 1904 to provide the town of Paonia with electrical service. Unable to meet the demand for electricity and needing new equipment, the company was taken over by the town of Paonia in 1906. After nursing the equipment along for two more years, the town built a new power plant building and installed new generating equipment in 1908, but power was only provided for a few hours each evening. In 1912, a 100-kW generator and new engine was installed, enabling 24-hour service to be provided. Financial difficulties resulted in service being cut back to evening hours only from June 1913 to October 1914. The town turned down an offer to buy the plant by the Western Colorado Power Company in 1926 and a second 100-kW generating unit was installed in the plant to handle increased demand. On December 18, 1930, the town sold the plant to C. L. Oliver, who formed the Oliver Power Company. Oliver operated a coal mine and planned to use slack coal to run the plant at the Oliver Coal Mine and distribute the electricity in Delta and Gunnison counties. The Depression diminished Oliver's ability to construct a major generating facility. He completed a power plant at the Oliver Mine and made arrangements for extra power he generated to be purchased by the Western Colorado Power Company as a supplement to their power supply. On December 1, 1931, the holdings of the Oliver Power Company were sold to the Western Colorado Power Company (Western Colorado Power Company 1937:114-123).

The Hotchkiss Packing & Power Company was founded by J. Walter Lee, John E. Hanson, M. B. Hanson, Charles L. Pike, and M. C. Pike on July 11, 1907. The company had received a franchise from the town of Hotchkiss to provide power to the town. Delays in obtaining equipment resulted in a power plant not being put on line until January 28, 1909. A fruit-drying and canning plant was installed adjacent to the power plant by the company. Demand quickly outpaced generating capacity and could not be operated profitably. Upon going bankrupt in 1922, the company was sold to Charles S. Shryock on October 1, 1923, who formed the Hotchkiss Electric Company. An 80-HP diesel engine was installed to power the generator in 1923 and an additional 40-HP diesel engine was installed in 1926. With the new equipment, 24-hour service was provided. The company was sold to the Gunnison Valley Power Company on September 19, 1928, which was formed to expand the Hotchkiss Power Plant. The company rebuilt their distribution system in 1930, which included about 3 miles of lines in the town of Hotchkiss and 2 miles of line to rural customers. That same year, a 12-mile-long transmission line was extended to Crawford. Despite the improvements, electrical service was poor and the Public Utilities Commission decreed that the system be purchased by the Western Colorado Power Company. The sale was finalized on December 28, 1932 (Western Colorado Power Company 1937:124-130).

The Telluride Power Company was a subsidiary of the Utah Power & Light Company organized to manage the company holdings in Colorado. The company had its headquarters in Montrose with branch offices in Telluride and Silverton. In 1950, the company constructed the Montrose Steam Electric Plant. A second generating unit was installed in the plant in 1953 and it was soon renamed the James A. Bullock Steam Electric Plant. The plant was converted to natural gas in 1973 and was sold to the Colorado-Ute Electrical Association in 1975. The plant was closed in 1983, but was made part of Public Service Company of Colorado's holdings in 1992 when Colorado-Ute went bankrupt.

The Rural Electrification Administration (REA) was formed by Executive Order in 1935 to extend electrical power to rural America. This resulted in the organization of the Delta-Montrose Rural Power Lines Association in August 1938. Pea Green near Delta was the first rural community to benefit from the program in May 1939, but soon lines were extended to rural areas around Delta, Hotchkiss, and Paonia. Because of an overlap in the service area with the Western Colorado Power Company, the Public Utilities Commission ordered an exchange of customers and consolidation of service areas resulting in the Association no longer serving just rural customers. As a result, the organization was renamed the Delta-Montrose Electric Association. In 1975, the Western Colorado Power Company sold its holding to various cooperative electric companies.

Colorado-Ute Electric Association was formed in 1942 as a consolidation of several electrical cooperatives. They constructed the Nucla Station from 1957-1959 to utilize the coal from the nearby New Horizon Mine. In the 1980s, the plant was converted to a fluidized-bed combustion process intended to be more efficient and reduce emissions. The plant was purchased by Tri-State Generation & Transmission Company in 1992 when Colorado-Ute went bankrupt (Tri-State Generation and Transmission Company 2009).

The Delta Municipal Plant was built in 1937 by the Municipal Light and Power System of the town of Delta, which was established in 1935. Two 125-kW and one 172-kW diesel generators were installed originally and four more diesel generators were installed between 1939 and 1956 to give the plant a total generating output of 4,989 kW. Delta was tied into DMEA and WAPA systems in 1967, so the plant is only used to supplement purchased power when necessary or to provide power during extended outages (City of Delta 2007).

The Western Area Power Administration (Western) operates several transmission lines in the area associated with the Colorado River Storage Project that resulted in the construction of Blue Mesa, Crystal, and Morrow Point dams. The earliest of these is the Curecanti to Shiprock Transmission Line that was put in service in November 1964. This was soon followed by the Curecanti to Montrose Transmission Line, completed in January 1965. The Curecanti Substation was completed in October 1964 and put in service in July 1965. Lines connecting Morrow Point to the Curecanti Substation were completed in January and December 1970. Western's Montrose Power Operation Center was built by the Bureau of Reclamation between 1963 and 1966 to facilitate their management of the Colorado River Storage Project. Western obtained the property about 1978 (Schweigert 1998:5-63-66 and 5-107).

Recreation

The scenic beauty of southwestern Colorado was promoted heavily by the D&RG, much to the benefit of the towns of the region. The "Around the Circle Tour" took tourists from Denver through Pueblo and Alamosa, then to Durango by way of Chama. At that point, tourists could take the RGS to Ridgway or could take the D&RG to Silverton, then over the mountains by way of the Silverton Railroad, and to Ouray by the Otto Mears toll road. From Ridgway or Ouray, tourists would continue to Montrose, then travel to Gunnison through the upper end of the Black Canyon of the Gunnison, and finally make their way back to Denver over Marshall Pass. Recreational travel by automobile was a major impetus in developing an adequate road system and, ultimately, an interconnected highway system in the region.

Albert Henry Jarvis settled at the hot springs north of Ouray in 1878, when the land was still part of the Ute reservation. The hot springs was an important place to the Utes, as was the entire valley leading to Ouray and had been specifically meant to be included in the reservation as a result of the Brunot Agreement in 1873. Unfortunately, the land was not included in the survey of the reservation and settlers from Ouray began to occupy the valley. Settlers were asked to remove themselves from the disputed land, but protests from the settlers and residents of Ouray resulted in a reversal by the government and settlers were allowed to remain (Fogg 1878). Jarvis died in 1879 and his widow, Sarah, married Lewis F. Orvis in 1882. The curative powers of the springs were well understood by Orvis, who promoted them for health seekers. No formal resort development took place, though. A structure was built over the hot springs in 1919 and promoted as the Orvis Plunge. A fishing lake and a dance hall were other amenities that drew customers. The original Orvis Plunge building was destroyed by fire in February 1961 (Gregory 1991:45-46). A completely new hot spring resort was established at the site and is a popular recreational destination in the area. Lemon Springs was an underground hot mineral bath that was reached by a footbridge across the San Miguel River from Placerville. Two what degree Lemon Springs was developed as a recreational facility is not known. The primary hot spring destination in the area is the Ouray Hot Spring Pool,

probably first developed in the 1880s. The area around the pool was made a park by 1903, and the formal pool development, similar to what is present today, was constructed in 1926.

The Black Canyon of the Gunnison was a key point of scenic beauty along the D&RG's Around the Circle Tour. It was not until 1933 that Black Canyon of the Gunnison National Monument was designated and the deepest part of the canyon put on display with development by the National Park Service using CCC labor. In 1999, the monument was upgraded as the Black Canyon National Park. At the same time, adjoining BLM land was designated the Gunnison Gorge National Conservation Area. It includes the Gunnison Gorge Wilderness Area and the Flat Top/Peach Valley Off-Highway Vehicle (OHV) Area. In 2003, the boundaries of the NCA were expanded. These areas provide recreational opportunities for OHV riding, camping, hiking, picnicking, rafting, and fishing. Adjoining the Black Canyon of the Gunnison National Park to the east is the Curecanti National Recreation Area (NRA), which encompasses Blue Mesa, Morrow Point, and Crystal Reservoirs and the East Portal of the Gunnison Tunnel. The NRA was established in 1965 in association with construction of the three reservoirs by the Bureau of Reclamation as the Aspinall Unit of the Colorado River Storage Project. The NRA provides abundant camping, fishing, and boating opportunities.

Away from these officially designated areas, BLM, Forest Service, and State Wildlife areas provide developed and undeveloped recreational opportunities for hiking, bicycling, OHV travel, jeeping, camping, fishing, wildlife watching, and hunting. Hunting has been traditionally an important economic stimulus to the region because the prospects for trophy deer and elk have drawn hunters from throughout the nation.

Skiing has had a long history in the area, beginning with miners and early pioneers who used skis for transportation. Lee's Ski Hill in Ouray is still operated on land donated by Dema Mary Lee in 1946; it has a single rope tow. Ski Dallas on the western side of Dallas Divide had a T-Bar lift. It is known to have been in operation from 1962 to 1976, but may have had its origin as early as the late 1950s. The most prominent ski area in the region is the Telluride Ski Resort, which opened in 1972 and is a major ski destination. Development of skiing at Telluride has turned the town into year-round recreational destination with festivals and a base for a wide variety of outdoor recreational activities including hiking, fishing, and 4-wheel drive exploration.

Ethnicity

Historic Ute sites form perhaps the most exciting body of sites where research into culture change can be anticipated in the study area. Although seldom recognized, historic Ute sites have been identified mainly in the interface of the Uncompahgre Plateau and Uncompahgre Valley from Delta to Ridgway. Because of the proximity to the Los Pinos Agency, the area near present Colona has a particularly high number of known historic Ute sites. It should be expected that additional historic Ute sites will be found along the routes of Indian trails, a few of which have been identified from GLO plats and other historical references. Of particular importance are the trails that cross at Wright's Spring near Norwood and the trail across the Uncompahgre Plateau that entered the Uncompahgre Valley along Horsefly Creek.

Construction of railroads in the region is known to have utilized Italian immigrants as a large part of their labor force. Elsewhere in the state, construction camps with evidence of Italian laborers have been identified along the routes of the D&RG and the RGS. Such sites have yet to be identified in the UFO area, but are certain to exist. In addition, a perusal of 1900 census data for the UFO area indicates that Italians were also used as railroad section laborers along the D&RG and RGS. Individuals of Irish ancestry also seem rather ubiquitous as railroad section workers.

Although immigrants from throughout Europe are noted in a variety of occupations in the communities of the UFO area, the Surface Creek area of Delta County appears to have been particularly attractive to Italian, Belgian, and German farmers by 1900. Two Portuguese farming families were also noted in the Delta area. A number of Italian miners were also noted as living in the Portland area of Ouray County. Historical information suggests that Croatian immigrants were enticed to the Shenandoah area beginning about 1896 (Porter 1994:12-16). Census data from 1900 also indicates that Hungarians were among the immigrants there. A Hungarian laborer was employed in the Paradox Valley and a Polish immigrant was noted in Pinon in 1900.

The 1900 census shows that African-Americans were particularly infrequent residents of the region. One family and two other individuals were identified in Montrose and a single individual was identified in Ridgway. Ridgway was also the only place where Chinese were identified. Both were individual men doing laundry work.

Hispanics have a long tradition of residency in the region beginning as participants in the fur trade when Antoine Roubidoux included employees from New Mexico at Fort Uncompahgre. When Chief Ouray established his ranch in the Uncompahgre Valley when the Los Pinos Agency was moved to the valley in 1875, he employed Hispanic laborers to build his adobe ranch house and to perform farm labor. The extent to which Hispanics were present in the region during the fur trade and the early settlement period of the Uncompahgre Valley is not known. The sheep industry in the Montrose and Placerville areas evidently attracted Hispanic sheepherders from New Mexico and southeastern Colorado beginning in the 1890s. The 1900 census identifies Hispanic sheepherders working near Placerville and for Larry Finch on Horsefly Mesa. Three Hispanic families were enumerated in Montrose in 1900 with the head of the households identified as being farm laborers and one individual identified as a sheep herder. As the sheep industry expanded in the region, the number of Hispanic sheepherders grew. Sheep herding and other farm labor jobs in the Uncompahgre Valley resulted in a large Hispanic population in Montrose and Delta counties, many coming from northern New Mexico and southeastern Colorado. In addition, Basques entered the sheep industry and, in recent years, sheep herders and farm laborers from Mexico, Peru, and Spain have taken up residency, including Cora Indians from Mexico. Inscriptions of names, places, and art on aspen trees and less frequently on rock or penciled on door and window frames of structures are the most ubiquitous representations of Hispanic or Basque sheepherders in the region. Herder's campsites are common, but are more difficult to assign ethnic affiliations to.

Although it is known that German Prisoners of War were known to have been housed in Montrose and used for farm labor in the Uncompahgre Valley, no physical evidence of their activities is expected to have survived in the UFO area.

The labor force in the uranium mines around the Paradox Valley included Navajos recruited from New Mexico, Utah, and Arizona beginning in the late 1940s through the early 1970s. Many of these miners had experience working in mines on the Navajo reservation. The most prominent evidence of Navajo miners in the UFO area are sweat lodges in close proximity to residential sites.

Data Gaps

Except for the Hanging Flume operation, little documentation of placer mining has taken place in the UFO area. Although coal mining was a major industry in the North Fork area, the industry has been unexplored archaeologically. It is expected that small coal mines exist on UFO lands, but none have been documented so far. Little research has been done on farming and ranching in the area, which are documented only through reminiscences and anecdotal accounts with no firm background research. Homesteads have been only minimally investigated archaeologically by the Dallas Creek Project. More extensive investigations are warranted. Important sites would be those that can be tied to early cattle companies—some of which may exist as inholdings surrounded by BLM land. Farming sites of importance would include those that relate

to expansion into marginal lands by optimistic settler who failed and lands that were made available for successful settlement because of the Uncompahgre Project or private irrigation schemes in the North Fork Valley and west of the Uncompahgre Plateau. A few sites related to the lumber industry are known on National Forest lands, but no sawmills or lumber loading sites have been documented elsewhere in the region. Little information exists for the smaller towns and settlements in the region. This is particularly the case for defunct settlements from the early settlement era and lesser railroad stations. Documentation of quite a bit of the Uncompahgre Project has taken place, but little is known about the initial irrigation works and how they were actually incorporated into the larger system. Other irrigation systems, such as those in the North Fork Valley and in the Norwood area, are virtually undocumented.

Sites that would be of particular importance for understanding the history of the region include:

- Sites relating to encroachment on the Ute reservation from Ouray area and onto grazing land in the Paradox and Norwood areas between 1875 and 1881.

- Railroad construction camps, maintenance facilities such as section houses, and sidings where lumber, livestock, agricultural produce, and other products were loaded away from the major towns are virtually undocumented in the UFO area, though many exist and probably have some physical integrity. Some of these may also provide important information about ethnic groups.

- Radium/vanadium/uranium sites from all periods with good integrity, but particularly the early exploration periods.

Because of the wide range of site types and the individual histories of historic sites, historical archaeological research is, by necessity, site specific. That is, the history, context, and material content of a site will be individual and the approach taken to best gather the information a site has to offer may be individual as well. Orientations of research are nearly as varied as the sites themselves and can be particularistic, culture historical, processual, cognitive (such as a "world systems" approach), or direct historical (see Church et al. 2007:1-28). Historical archaeological sites lend themselves to a wide variety of interpretive approaches that may result in a myriad number of ways in which data can be collected and used, all of which may be useful and valid. Trends and approaches in historical archaeology are ever-changing and all are appropriate for testing of social models and theories. Because of the variability of historical archaeological sites and the multitude of approaches that may be used in their research, identification of data gaps and what is most important at historical archaeological sites is a moving target. For the most current view regarding theoretical and research orientations, see the Colorado historical archaeology context (Church et al. 2007).

Prehistoric Site Sensitivity Modeling and Maps

One objective of the BLM-UFO Resource Management Plan (RMP) revision was to develop a set of cultural resource sensitivity maps. These maps, based on the potentiality of locating sites, are designed to aid the BLM-UFO in making preliminary assessments of the expected time and labor investments during Section 106 projects. Following standard practice (e.g., Reed et al. 2008a, b) and at the request of the BLM, sensitivity maps are designed to differentiate areas of high, medium, and low sensitivity for cultural resources. This section describes the methods used to determine the sensitivity of various portions of the study area for prehistoric cultural resource locations and examines the effectiveness of those methods. As the approaches used for creating sensitivity maps for the prehistoric and historic site sets are quite different, two models were produced for the UFO: one for prehistoric cultural resources and one for historic cultural resources. Isolated finds and paleontological sites were omitted from the database when producing the models. For prehistoric sites herein, landscape attributes (e.g., topography, vegetation, etc.) are converted to ranked variables in order to conduct factor analysis. Landscape areas within the UFO are then assigned values based on the summation of weighted variability, which is correlated to a ranked order of site sensitivity (e.g., high, medium, or low). The historic model is based on actual site distributions, as indicated in historical indices, GLO Plats, and other historic resources. The resultant site sensitivity maps for both prehistoric and historic sites are herein included, though, by necessity, at a small scale. The sensitivity maps for prehistoric sites included in the body of this report use six sensitivity zones; that is, each of the three sensitivity zones is divided into two zones for greater resolution of the model. Complete sets of 1:24,000-sized site sensitivity maps, and GIS shapefiles of the sensitivity maps, have been separately submitted to the UFO as stipulated in the Statement of Work for this project. In contrast to the maps included in this report, all of the 1:24,000-scale maps employ three sensitivity zones.

Modeling of archaeological resources is a useful tool for resource managers, by way of preliminarily assessing the degree to which an upcoming project is likely to impact resources. A combination of appropriate sampling and statistical inference based on previous survey results allows land managers to preemptively calculate likely locations for archaeological sites before a 100-percent inventory is completed (Berry 1984; Burgess et al. 1980a:88). Theoretically, these models assume that if prehistoric sites are spatially patterned within the environment, and if that patterning is weighted by demonstrable environmental variables (e.g., subsistence resources) or proxies for past environments (e.g., topography and/or elevation); then the locations of sites in unsurveyed areas can be reasonably projected (Reed and Chandler 1984). While not intended to provide 100 percent accuracy or replace survey, sensitivity maps based on statistical models are useful as "a single tool in the toolbox of cultural resource managers" (Smith Gebauer 2004:22).

Previous Modeling Efforts

Modeling of modern landscapes to assess the likelihood of finding cultural resources has found acceptance among federal agencies as a land managing tool. Modeling arose as an effort to make explicit what field archaeologists intuitively understood. That is, historically, field archaeologists intuitively "know" where sites were likely to be found within specific survey parcels (e.g., not on eroding slopes, near water, etc.). Intuition or common-sense, albeit grounded in environmental variables (e.g., vegetation communities, erosional constraints) and understandings of prehistoric landscape utilization (e.g., game drive systems, agricultural needs), is difficult to operationalize within the scope of federal undertakings (Altschul 1988). As such, explicit landscape models have been used by federal agencies to preemptively assess the potential impact of Section 106 projects.

Modeling in CRM grew during the 1970s, following academic landscape models built in the 1960s and 1970s (Berry 1984). The growth in CRM is likely linked to the spread of personal computers as calculations for statistical queries in large datasets were simplified and more accessible. Early predictive models in CRM, however, were generally not well received, as they often failed to adequately address management needs, used inappropriate statistical techniques, lacked replicability and comparability, and suffered from poor environmental and cultural data (Berry 1984; Sebastian and Judge 1988:10). In 1983, a federal task force was established to, among other things, devise "a set of standards for the archaeological and environmental data to be used in modeling efforts" (Sebastian and Judge 1988:10). As a first step in normalizing archaeological modeling efforts, the task force produced a seminal piece that retains theoretical viability (Judge and Sebastian 1988). Without reviewing—or rewriting—the entire history of federal involvement in the development of sensitivity models (Judge and Sebastian 1988; Thoms 1988) the remainder of this section highlights relatively local and pertinent projects that have historical influence on the current model and which act as a reasonable background of regional sensitivity models.

An early model was developed in the Piceance Basin of northwestern Colorado by Hurlbett (1977). The study used statistical correlations between 37 environmental characteristics in a cluster analysis as probable predictive variables (Hurlbett 1977). Fifteen significantly correlated variables were then applied to unsurveyed areas, with environmental similarity to the model indicating occupation potential. Hurlbett's (1977:37) results indicated that sites were commonly associated with gently sloping southern exposures and pinyon-juniper woodlands. Distance to water had a high degree of variability within the Piceance Basin, and was used as a classificatory mechanism, though it appears to have lacked strong interpretive value (Hurlbett 1977:52). Hurlbett's (1977:i) work focused on utilizing environmental variables as foci (e.g., predictors) for cultural surveys, rather than as a suite of explanatory tools for past behavior. In doing so, Hurlbett pessimistically recognized that such models struggle with modern environmental variables that need not be correlated to past environments. While inherently true, some variables (e.g., erosional drainages, slopes, aspects, etc) are stable—at least within the geological time frame afforded occupants of Colorado—and non-stable variables (e.g., vegetation and faunal communities) can be accounted for (Madsen et al. 2009) and modeled (Kohler and Parker 1986). Hurlbett also failed to recognize a further distinction, wherein management needs can be met with incongruous datasets as long as the variables support the results (e.g., vegetation regions need not be consistent through time as long as current vegetation boundaries are useful indicators of site locations) and where theoretical models recognize the discontinuities inherent in modern datasets.

An inventory conducted within the bounds of the BLM-Glenwood Springs Field Office (GSFP) in 1979 was used by Nickens and Associates to produce a model for archaeological site locations (Burgess et al. 1980a). The study was based on 109 separate 160-acre parcels selected via a stratified random sample based on general vegetation communities. The modeling portion of the study used micro-environmental and topographical features in a discriminant analysis to characterize and project likely areas for prehistoric site locations (Burgess et al. 1980a). Results of the analysis indicated that a number of environmental variables (e.g., vertical distance to water, distance to vantage and view, shelter quality and exposure, local relief, and proximity to pinyon-juniper) acted as "pulls" for prehistoric populations (Burgess et al. 1980a:120-121). The results of Nickens and Associates study clearly utilized a topographically determinant approach, and clearly would have benefited from improved subsistence resource data (e.g., artiodactyls census data, etc.) (see Grady 1980).

James Grady (1980) utilized physiographic, floral, and faunal resources—specifically focusing on mule deer herds—to model site locations in the Piceance Basin. The model attempts to reconcile economies of food foraging with archaeological survey results such that models of site locations are perceived as, "a conscious effort to exploit resources in the most rational manner possible," thereby maximizing returns and minimizing costs (Grady 1980:115). A cluster analysis

(e.g., nearest-neighbor) indicated that aspect and soil had no effect on site distribution, though sites were linked to water, in broad valleys, on slopes less than 20 degrees, and in areas that correlate with mule deer populations (Grady 1980:231-237). Linear linkages of sites in broad valleys along waterways may be a product of the way in which the nearest-neighbor statistic clusters data, though it may also be a product of site selection parameters (Aldenderfer 1982; Pinder et al. 1979). Although limited in the number of faunal variables included in the model, Grady posited a strong positive pull between winter mule deer herd locations and lowland sites (Grady 1980:238-240) in the Piceance Basin. Highland sites, presumably used during the summer months, were most strongly linked with distance to water (Grady 1980:238).

A portion of western Colorado was the subject of an intensive Class I overview and theoretical study by Brian O'Neil (1993). Results included an extensive characterization of the existing archaeological record for the area, an evaluation of the status of the data and existing research directions, and development of a new research framework. Contained within the study was the skeleton of a settlement model for the study area, based on seasonal relocation for advantageous use of food and water resources. The description of optimal landscape use also took climate, shelter, and accompanying implications for human comfort and safety into account. In general, site occurrences were best correlated with elevation, with a peak in site presence near 6,400 ft. (1993).

A qualitative site assessment was produced as part of a Class I project within the Roan Plateau of western Colorado (Hoefer et al. 2002). Hoefer et al. (2002) utilized topography and vegetation maps as well as mule deer and elk winter ranges to assess the locational attributes of 327 prehistoric sites and isolated finds and 102 historic cultural resources within 127,009 acres (Hoefer et al. 2002:51). A quantitative model was eschewed because the data was felt to be of uneven quality and was not adequate for sampling reasons (Hoefer et al. 2002:42-43). Using chi-square tests of association Hoefer et al. (2002:90-91) found correlations between prehistoric sites and lowland vegetation zones (e.g., pinyon-juniper) and distance to water in the uplands (cf. Grady 1980). Further, they found that permanent and ephemeral water sources, as coded within the BLM database, were not reliable information sources (cf. Newkirk and Roper 1983). Hoefer et al. (2002:91) found that historic sites were generally distributed in relation to water sources and transportation corridors, with site type (e.g., homestead, ranching, mining) acting as a defining variable regarding its upland or lowland location. Although not technically a sensitivity model Hoefer et al.'s (2002) Class I of the Roan Plateau is included herein because they identified a number of environmental variables that are loosely associated with site locations.

A more recent cultural resource sensitivity model was produced by Alpine for the Uncompahgre Plateau in western Colorado with the intent of providing information to assist in the protection and management of cultural resources by federal land managers (Smith Gebauer 2004). The predictive model resulted in the development of three sensitivity zones for the presence of cultural resources and gave special consideration to wickiups, rock art, rockshelter sites, and open campsites (Smith Gebauer 2004:1). The raw data used to produce the model included elevation, slope, aspect, distance to permanent water, distance to seasonal water, elk and mule deer winter habitat, geology, ecotone edges, vegetation type, and soil type (defined as Land Capability Class) (Smith Gebauer 2004:2). The model then used logistic regression analysis to "compare known site locations with randomly plotted nonsite points to determine the predictive power of the environmental variables" (Smith Gebauer 2004:7). Results of the UPAP sensitivity model indicate that sites are more likely to occur between 1,800 m (5,905 ft.) and 2,100 m (6,889 ft.) (Smith Gebauer 2004:8). Smith Gebauer's (2004:Table 3) regression analysis, indicated that sites are most positively correlated with artiodactyl winter ranges, floodplains, and pinyon-juniper communities. Ground-truthing by Alpine (Reed et al. 2006:107) (including 1,000 acres of Class II survey and 26,742 acres of Class III inventories) indicated a general compatibility with the original UPAP sensitivity model. There were, however, some discontinuities between Smith Gebauer's model and Reed et al.'s ground-truthing with regards to the expected and observed number of high elevation sites. The

discrepancies are likely due to relatively few high-elevation surveys and cultural "pulls" that were not modeled in the original design (Reed et al. 2006:104). As Reed et al. (2006:105) note, "[the original model] should not be seen as a predictor of past human behavior", but rather as a tool by which to better account for cultural resource management needs.

Two recent predictive models were furnished by Alpine for the Glenwood Springs and Kremmling BLM-FOs in preparation of individual Field Office RMPs (Reed et al. 2008a, b). As the predictive models were prepared at the same time by the same individuals who used the same methods, they are, herein, discussed in tandem. Both of the predictive models utilized factor analysis in an attempt to reduce eight environmental variables into culturally meaningful factors related to prehistoric site selection (Reed et al. 2008a:98; 2008b:88). The variables focused on topography (elevation, slope, and aspect), subsistence resources (vegetation communities, mule deer ranges, two-dimensional distance to water [both permanent and all potential]), and soil type. The results of the Glenwood Springs model indicated that elevation was the primary site selection factor (Reed et al. 2008b:102), while the Kremmling model indicated that the primary site determinates were elevation and mule deer ranges (Reed et al. 2008a:pg.111). Their use of factor analysis is appropriate given a desire for interpretive potential (Bettinger 1979:457; Widaman 1993:308), though the Glenwood Springs and Kremmling models failed to fully utilize the advantages of the SPSS program. In both cases, they recognized the value of identifying variables with low communalities, but did not include this information in the construction of the models (Reed et al. 2008a:107-108; 2008b:97-98). As such, both models incorporate environmental background noise that lowers the overall predictability of the respective results (39 percent and 40 percent of the total variance, respectively) (Reed et al. 2008a:Table 25; 2008b:Table 27). Further, when creating the sensitivity maps, individual factor values (the sum product of variables and factor coefficients) were "added together" (Reed et al. 2008a:111; 2008b:102), thus failing to preserve the hierarchical information embedded in the decreasing eigenvalues that was presented in their respective scree plots (Reed et al. 2008a:Figure 17; 2008b:Figure 20). The simple adding of factor components skews the sensitivity maps to variables with less "pull" in the dataset. As such, the recent predictive models for the Glenwood Springs and Kremmling FOs may have appropriately identified proportionally higher ranked site selection factors (e.g., primary factors equating to elevation, deer census data and soil type), though their results are not fully supported by their use of factor analysis.

One of, if not *the*, most detailed and well-funded cultural-resource-mitigation contracts in the area is associated with the Dolores Archaeological Program (DAP) (Breternitz 1984, 1993; Breternitz et al. 1986; Kohler and Parker 1986; Kohler et al. 1986). The DAP is noted here less for the continuing array of publications which resulted from seven years of work (1978-1985) (Breternitz et al. 1986), than for its outgrowth, the Village Ecodynamics Project (VEP) (http://village.anth.wsu.edu). Where the DAP focused on recordation and mitigation for the Bureau of Reclamation, the VEP (2002-2008) was academically focused on understanding the coupled human systems and ecosystems in a 1,827 km^2 area of southwestern Colorado (Johnson et al. 2005; Kohler et al. 2005; Varien et al. 2007). The VEP uses object-oriented programming to create models with interacting agents and resources that is vastly superior to CRM created models based on static site clusters or factor analyses (Kohler et al. 2005:78). While the VEP is *the best* example of prehistoric modeling in the region, the logistic resources necessary for such work (e.g., monetary, temporal, personnel, equipment, etc.) are generally beyond the scope of a federal RMP. However, the results of such work remain viable for less detailed models, as ground-truthing of VEP models indicated accurate results where "environmental conditions largely determined the placement and size of the residences" (Kohler et al. 2005:80). While applying different analytical techniques, most CRM predictive models utilize a similar suite of environmental variables, suggesting that the results of the different approaches are compatible, even if not directly comparable.

As applied in CRM, predictive modeling of archaeological resources relies on a deterministic inductive agenda "using statistical inferential procedures to reduce a set of environmental variables" (Kohler and Parker 1986:402) to datasets that are most highly correlated with known site locations. The use of environmental variables is both a product of available data resources (e.g., hydrology maps, faunal census data, etc.), available logistic support (e.g., statistic packages, contract stipulations, etc.) and a recognition that environment impacts cultural selection of what was an 'adequate' resting place—be that resting place a logistical hunting campsite, a permanent pueblo with adjacent maize fields, or a vision quest locale (Binford 1980; Kohler et al. 2005). Grady (1980), pointed out that decisions about where to live occur on two levels—a basic, economic level, which is generally presumed to equate to the environmental variables, and a more personal, preferential level. The first is highly predictable; the second is less so. Thus, while environmental variables may have strong interpretive value, they "are vastly more simple than reality" (Kohler et al. 2005:84).

Unfortunately, the term *predictive* also found early acceptance (Kvamme 1988:326). As noted by Kvamme (1988:327), the statistical inferences discussed below do not *predict* site locations, rather, maps are *projections* based on similarities in environmental and cultural characteristics within the database. While high and low site density areas are expected to contain relatively greater or fewer sites per acre, they are not intended to flawlessly foretell the placement of site locations. As such, sensitivity modeling should be interpreted within an open, holistic framework, rather than with a linear, cause-and-effect approach. In doing so, and recognizing the temporal and logistic constraints imposed by project parameters and data reduction techniques (e.g., principal component, factor analysis), the maps created from such an effort provide land managers a useful tool for viewing the landscape that is certainly better than "the intuition of archaeologists … [which is] … probably not very accurate" (Johnson et al. 2005:106).

Factor Analysis

When attempting to reduce a large data-set into a handful of variables with high interpretive value, researchers have utilized a variety of techniques (e.g., logistic regression, principal component analysis, factor analysis) (Neff 1994; Reed et al. 2008a, b; Smith Gebauer 2004). Factor analysis, as compared to logistic regression or principal components analysis, is frequently used to express shared variance among observed variables given communality in the original data set (Widaman 1993:267). By utilizing factor analysis, researchers obtain a reduced-dimensional representation of a set of observed variables with the goal of *interpreting* the patterns of observed covariation (Bettinger 1979:457; Widaman 1993). While logistic regression and principal component analysis also provide reduced-dimensional representations of variables, they lack any correlation with underlying covariance and are thus less useful for the interpretive requirements of sensitivity models (Widaman 1993:308).

Herein, factor analysis was used with the goal of identifying which combination of variables influenced the choice of locations for archaeological sites (e.g., elevation, slope, aspect, vegetation, etc.). The numerical data set used for factor analysis included ordinal, interval, or ratio level variables attuned to observations made at the physical location of known archaeological sites in the study area. The sampled data set used in the UFO study includes 3,787 prehistoric archaeological sites. The correlation matrix provided by factor analysis—utilizing the variables described below—then allows any given area on the landscape to be weighted and evaluated mathematically for its likelihood to contain archaeological sites.

Variable Selection

The analysis began with the selection of eight independent variable categories thought to have influenced the locations of archaeological sites. The selection and coding of these variables hinged on comparative ethnographic data (Burns 2004; Smith 1974), observations of past and present human settlement and subsistence behavior (Greubel 2002; Greubel et al. 2006), and

previous cultural resource overviews and sensitivity models (Hoefer et al. 2002; Reed et al. 2008a, b; Smith Gebauer 2004). The selected variables can be divided into two main categories; topography (e.g., elevation, slope, aspect, and a modified Land Capability Class) and subsistence/material requirements (e.g., vegetation communities, seasonal faunal ranges for 12 species, distance to water, and lithic procurement). Each of these variables is detailed below.

Elevation Variable

The selection and coding of variables began with a consideration of the influence of elevation on annual human settlement patterns. Elevation has a major influence on the availability of subsistence resources, temperature and human comfort. During spring thaw, valley bottoms, especially those with southern exposures and rockshelters, provided abundant early riparian resources, including rush, cattail, and reed (Grady 1980:242-243). As spring progressed, snowmelt and warming temperatures allowed greening foliage to progress to higher elevations. It seems logical that humans in the study area would have preferred to spend summers in middle elevation zones where periodic logistical forays could be made to both low- and high-elevation resources. Summer months would have also been used to prepare and store strategic resources for the winter (Grady 1980:243). In the fall, humans were apt to take advantage of seasonally available floral (e.g., pinyon nuts, acorns, and berries) and faunal (e.g., deer, elk) resources, perhaps aggregating to do so (Smith 1974). The positioning of winter habitations in middle elevations reduced transportation costs to wood (e.g., fuel and shelter) and food resources by averaging total foraging costs (Metcalf and Black 1991). By midwinter, these camps were probably located within, or near, deer and elk winter ranges (O'Neil 1993).

Modeling of prehistoric site sensitivity based on elevation also considered actual site distributions. In 1993, Alpine finalized a synthetic review of the Transcolorado project, which indicated that 68 percent of the sites were located between 6,000 ft. (1,829 m) and 7,999 ft. (2,438 m) (Horn et al. 1993:56). Alpine's comprehensive archaeological database for the Uncompahgre Project area of west-central Colorado also indicates differential site frequencies across elevation zones, with prehistoric sites most likely located the flanks of the Uncompahgre Plateau, between 5,905 ft. (1,800 m) and 6,889 ft. (2,100 m) (Smith Gebauer 2004:8). Archaeological evidence from areas surround the UPAP study, in central Utah and west-central Colorado, also suggests that elevation gradients are linked to site and resource usage (Hoefer et al. 2002; McDonald 2000). If site type distributions map onto elevation and resource gradients, then elevations with higher site frequencies are likely to be those areas that are occupied more frequently, for a greater portion of the year, and/or for a greater variety of subsistence tasks. As such, elevation could be a key interpretive variable for resource sensitivity modeling. The results of Transcolorado Pipeline and UPAP projects were used to justify the lower rank of elevations above 8,000 ft and the high ranking of sites between 6,000 ft. and 7,000 ft., as shown in Table 23. The elevation data were obtained from a 10 m Digital Elevation Model (DEM) supplied by the BLM-UFO.

Table 23. Codes for Elevation Variables.

Code	Elevation Range (ft)
1	Above 9,000
2	8,001 to 9,000
3	Less than 6,000
4	7,001 to 8,000
5	6,001 to 7,000

Slope and Aspect Variables

Other attributes of topography (e.g., slope and aspect) may affect the locations of prehistoric archaeological sites; with implications for both resources and comfort. An archaeological site sensitivity model developed for the Northern Railroad Valley in Nevada underlined the fact that prehistoric sites—particularly base camps—do not directly reflect foraging behavior, as these sites are centrally located for resources, though specifically placed for dry habitat and gentle terrain (Zeanah et al. 1999:113-114). Results from the Roan Plateau Class I indicated that prehistoric sites are associated with less-steep slopes and areas of low topographic relief (Hoefer et al. 2002). Further, the Roan Plateau study documented a preference for settlement on southerly exposures that was likely associated with microclimatic benefits (e.g., warmth and sunlight) (Hoefer et al. 2002:40).

Nickens and Associates, using site data from central Utah, developed an extensive characterization of environmental attributes, finding prehistoric sites were mostly likely found in level areas with low local relief (Reed and Chandler 1984:85). In the Piceance Basin of western Colorado, Grady (1980) found that no archaeological sites occur on slopes greater than 20 degrees. Particularly in high elevations, sites tend to cluster in broad, flat valleys with limited local relief (Grady 1980; Newkirk and Roper 1983). Grady (1980:231-239) further indicated that aspect plays an important role in site location, with 81 percent of lowland sites on northeastern aspects, on the lee side of most winter storms. Newkirk and Roper (1983:155) found a correlation between prehistoric site locations and southerly exposures in the Piceance Basin. Earlier work for the Glenwood Springs Resource Area also found a correlation between site location, low relief, and south-facing exposures (Burgess et al. 1980a). For this study, ranges of slopes were ranked as shown in Table 24. For aspect, cardinal directions were coded along with a *no aspect* (i.e., flat) category as shown in Table 25. The slope and aspect data—like the elevation data—were obtained from a 10 m DEM supplied by the BLM-UFO.

Table 24. Codes for Slope Variables.

Code	Slope grade (degrees)
1	30% or greater (16.7°)
2	10% to 29% (5.71° to 16.69°)
3	Less than 10% (5.7°)

Table 25. Codes for Aspect Variables.

Code	Aspect (degrees)
1	North (315° to 45°)
2	West (225° to 315°)
3	East (45° to 135°)
4	South or Flat (135° to 225°)

Vegetation Community Variable

In environments with limited resources—typical throughout the American West—critical resources are distributed unevenly in space and time. Prehistoric people in the study area likely contended with a base of temporally and spatially incongruous and sometimes unreliable floral resources (e.g., pinyon nut harvests). As a result, archaeologists can expect that the availability of floral resources influenced where prehistoric hunters and gatherers chose to live and work (Zeanah et al. 1999). As such, researchers can expect hunters and gatherers to achieve the best subsistence returns by utilizing habitats that provide the qualitatively and quantitatively highest caloric floral resources (Smith 1983; Zeanah et al. 1995).

In sensitivity models produced for western Colorado, as well as a recent model based on the Pine Valley in northeastern Nevada, vegetation community types have been used as an indicator of energetic productivity (Grady 1980; Hoefer et al. 2002; Zeanah et al. 1999). In the lowlands of the Roan Plateau, pinyon-juniper woodlands and sagebrush shrub vegetation types were found to

strongly correlate with site locations and, thus, have interpretive value for prehistoric archaeological sites (Hoefer et al. 2002:40, 43). In a study of environmental factors affecting archaeological site locations in the Piceance Basin of western Colorado, Grady (1980) found that sites were correlated with high-density vegetation. In the lowlands of the Piceance Basin, archaeological sites were highly correlated with pinyon-juniper communities, a result corroborated by others (Burgess et al. 1980a; Newkirk and Roper 1983; Reed and Chandler 1984). Site in the UPAP area had a greater than random chance of being found in pinyon-juniper vegetation communities (Smith Gebauer 2004).

The vegetation community variable categories were developed using data from the Colorado Vegetation Classification Project (CVCP); an interagency cooperative effort (e.g., BLM, CDOW, and USFS) hosted on the Colorado Division of Wildlife website at http://ndis.nrel.colostate.edu.ftp/index.html. The very specific CVCP categories were collapsed into 12 broad divisions, with agricultural land (e.g. historically altered) being ranked as equivalent to grasslands (Table 26). The metadata provided by the CVCP project included extensive descriptions of specific dominant plant types in each community, though it is considered a generalized representation with a resolution of 25 meters. Vegetation communities were ranked following Reed et al. (2008a; 2008b), who correlated vegetation communities to ethnographically simplified distributions of resources (e.g., the importance and location of pinyon pine and artiodactyls on the landscape).

Table 26. Codes for Vegetation Community Variables.

Code	Vegetation Community	Code	Vegetation Community
0	Water	6	Mountain Meadows and Parks
1	Barren Lands	7	Grasslands and Historically Altered
2	Talus Slopes/ Rock Outcrops	8	Mountain Shrub Community
3	Saltdesert Community	9	Pinyon-Juniper Community
4	Subalpine Zone	10	Sagebrush Community
5	Montane Zone	11	Riparian Zone

Faunal Census Data Variable

Based on ethnographic records of Ute subsistence and analyses of archaeofaunal assemblages from prehistoric sites excavated in the region, artiodactyls (e.g., mule deer, elk, antelope) were an important subsistence resource (Grady 1980; Greubel 2002; Greubel et al. 2006; Smith 1974:54-56). Smith's (1974:46) ethnographic study of the Ute establishes that venison was the preferred meat and, in areas where deer were abundant, constituted a major portion of the diet. Grady's (1980) dissertation on the environmental factors influencing prehistoric settlement patterns in the Piceance Basin focuses on mule deer; he considers mule deer to have been a subsistence staple, representing the most profitable resource for people to exploit. Of the identifiable artiodactyl bones excavated within the Northern Colorado River Basin, approximately 35 percent are identified as mule deer bones (Reed and Metcalf 1999:92). At the Weimer Ranch Sites, deer or deer/bighorn sheep/pronghorn were *the* most frequently identified elements (Greubel et al. 2006). A summary of 26 excavated Ute sites indicated that subsistence patterns between A.D. 1300 and 1850 were dominated by faunal remains that mapped onto animal distributions (e.g., deer dominate southern sites and bison/pronghorn are more common in northern site assemblages) with artiodactyls being present at a majority (n=18) of the sites (Greubel 2002:3, Table 1).

Since artiodactyls, as the "preferred" alternative, are an important resource to prehistoric populations, artiodactyl foraging and wintering areas (e.g., areas of concentrated resources) are expected to act as "pulls" from within the region that condition the location of sites (Grady 1980; Smith 1974:48; Smith Gebauer 2004). Winter weather comprises the primary limitation of food availability for most species, with snow covering much of the higher elevations in western Colorado.

Dropping temperatures increase metabolic demands (Schmitz 1991) and snowpack limits the ability to find food by increasing mobility costs and decreasing accessible fodder (Christianson and Creel 2007). As elsewhere, artiodactyls migrate to lower elevations to alleviate winter foraging costs; generally below 2,134 m (7,000 ft) in Colorado (Garrott et al. 1987), though movement is based on local topography, climate, and other factors (e.g., Sawyer et al. 2005). Grady (1980) utilized previous work on the Roan Plateau to develop a model in which humans and deer occupied lowlands during winter and plateau tops during summer months. A sensitivity model for the Roan Plateau could not confirm Grady's (1980) assumption, as summer artiodactyls ranges were not included in the dataset (Hoefer et al. 2002:90). A recent sensitivity model for the UPAP found a strong correlation (p <0.05) between artiodactyl winter habitat (e.g., mule deer and elk) and most site locations (Smith Gebauer 2004:8). The fidelity of animals to specific resource areas further supports the use of seasonally dependent foraging areas within sensitivity models (Garrott et al. 1987). Unfortunately, no previous sensitivity models in western Colorado included more than winter ranges as a conditional faunal variable. The faunal information used for this study includes seasonal shifts (e.g., summer and winter ranges) in multiple species populations as mobility is a common adaptation to seasonal variation in food availability (Felix et al. 2007; Garrott et al. 1987; Peterson and Messmer 2007) .

In an effort to build on Grady's (1980) hypothesis and previous sensitivity models, the current work distinguishes between summer and winter artiodactyl populations and includes seasonal distinctions of a wider variety of animals (e.g., prairie dog, turkey, sage grouse) to better recognize the co-locational nature of sites and seasonal dietary resource needs. Although artiodactyls were maintained as a high-ranked resource, it is important to recognize that other animals were incorporated into the diet of prehistoric populations (Bettinger 1993; Smith 1974; Winterhalder and Smith 2000). According to Smith (1974:54-56), Greubel (2002), and Fowler (2000:95), other animals hunted by historic Ute populations included rabbits (both cottontail and jackrabbit), prairie dog, beaver, rodents (e.g., woodrats, mice, marmots), fish, and birds (e.g., ducks, quail, and sage hens). Carnivores were infrequently hunted as food items, except in times of dire conditions, although their fur was preferentially used for blankets, bags, and clothing (Smith 1974:58). Equally, eagles were "much prized for their feathers," as useful items in both sacred and profane circumstances (Smith 1974:59). According to Smith (Smith 1974:47), abundant natural resources allowed both the White River and Uncompahgre Utes to have certain dietary taboos. For instance, they did not eat dogs, porcupines, grasshoppers, locusts, horses, or snakes (Smith 1974:47). Similarly, the Eastern Shoshone considered horses and dogs prized animals that aided in transportation, hunting, and war. These animals were not eaten, except during exceptionally difficult times (Shimkin 1986). The Southern Pauite would occasionally hunt full-grown coyotes, wolves, and lions for their hides; however, these were considered difficult and dangerous games and would likely not have been eaten (Kelly 1964).

Animal census data used to develop the sensitivity model were obtained from, and limited by, vector digital data published by the Colorado Division of Wildlife (CDOW) at http://ndis.nrel.colostate.edu.ftp/index.html. The data sets include numerous artiodactyls and birds (Table 27). Some animals in the CDOW database were not used because: 1) their ranges were ubiquitous and do not allow for intra-site distinctions (e.g., black bear and mountain lion); 2) their ranges were not crossed by sites in the project area and clearly cannot be positively modeled with site selection (e.g., greater sage grouse or kit fox; or 3) reliable range data was not available (e.g., peregrine falcon). The ranges of each modeled species were ranked and coded to reinforce seasonal constraints (Table 28) (APPENDIX A). As defined in the CDOW's accompanying metadata, *overall range* is defined as an area that encompasses all known seasonal activity areas (e.g., summer and winter ranges). *Summer range* is defined as the portion of the total range, where 90 percent of individuals are between the beginning of spring and the first heavy snowfall. If 'summer range' was not presented in the CDOW data, 'overall range' minus winter range was used as a proxy. *Winter range* is defined as the portion of the total range where 90 percent of individuals are during average winters, between the first heavy snowfall and the beginning of spring. Following CDOW's metadata,

winter and *summer concentrations* are areas where animal densities increase significantly; being at least 200 percent greater than surrounding areas or areas that provide high quality forage that meets seasonal energy demands. *Severe winter* range is an area where 90 percent of any species is located when snowpack is at its maximum and temperatures are at their minimum. Following the assumption that a concentration of food resources provides a reliable attractant for human populations, the higher fauna rankings (e.g., 2 and 3) are based on the increased likelihood of encountering a species on any given point of the landscape.

Table 27. BLM-UFO Fauna Model Variables.

	Species	Summer	# sites	Winter	# sites
Artiodactyls	**Bighorn**	overall range	263	winter range	119
				winter concentration	3
	Elk	summer range	804	winter range	3693
				winter concentration	625
		summer concentration	62	severe winter	2685
	Mule Deer	summer range	2145	winter range	3907
				winter concentration	1406
				severe winter	2588
	Pronghorn	overall range	87	winter range	60
				winter concentration	17
Birds	**Bald Eagle**	n/a	0	winter forage	183
				winter range	4053
				winter concentration	139
	Great Blue Heron	foraging area	108	foraging area	108
	Gunnison Sage Grouse	overall range	106	winter range	1
	Ptarmigan	overall range	10	overall range	10
	Snow Goose	n/a	0	foraging area	46
				winter range	376
				winter concentration	110
	Turkey	overall range	2832	winter range	1512
				winter concentration	70
Rodent	**Prairie Dog**	overall range	1571	n/a[1]	0
Carnivore	**Lynx**	potential range	287	potential range	287

[1] = prairie dogs generally hibernate from November to March and thus have no winter range (Pauli et al. 2006).

While it may be possible to distinguish differentially utilized faunal resources based on perceptions of energetic returns (Winterhalder 2001; Winterhalder and Smith 2000), this sensitivity model blurs any such distinctions. As noted by Madsen and Schmitt (1998), the actual availability of prey—regardless of size—is likely to have been a stronger "pull" regarding its inclusion in prehistoric diets, than is its relative ranking to *all* potentially available species. Thus, rankings of animals based on energetic returns (e.g., high-ranked artiodactyls, low-ranked rodents and turkeys, and rare/ritual birds and carnivores) may not help distinguish site patterning. By treating each animal as a separate variable, it might be possible to assess specific species distributions that act as pull-factors for site locations.

Table 28. Animal Census Data Variable Ranks

Summer Fauna[1]	Rank	Winter Fauna[2]
No modern overlap	0	No modern overlap
Overall seasonal range	1	Overall seasonal range
Seasonal concentration within the range	2	Seasonal concentration within the range
n/a	3	Severe winter range

[1] = Summer is defined as April 15th through October 15th.
[2] = Winter is defined from October 15th to April 15th.

Distance to Water

Geographic attributes not directly related to energetic productivity may affect the locations of prehistoric archaeological sites. Conversely, the archaeological record does not always directly reflect foraging behavior. The archaeological site sensitivity model developed for the Northern Railroad Valley in Nevada underlined the fact that human settlement reflects not only resource productivity, but also the availability of water (Zeanah et al. 1999:113-114). Water was the primary predictor of prehistoric archaeological site locations in the Roan Plateau study area (Hoefer et al. 2002:40). In northwestern Colorado, Grady (1980) found that archaeological site locations are directly correlated with distance to water; making water a prime locational determinant for upland sites, while it was a secondary factor for lowland sites (Grady 1980:231-239). Both the Kremmling and Glenwood Springs FO sensitivity models found distance to water (both permanent water sources and nearest water sources) to be an important secondary factor (Reed et al. 2008a:Table 28; 2008b:Table 30), though the importance of distance to permanent water and any water source (e.g., ephemeral drainages) varied between the two models.

For this study, hydrography data were obtained from the Colorado Division of Wildlife, hosted at http://ndis.nrel.colostate.edu/. Distance to water was calculated with two different methods. The first method, following Reed et al. (2008a; 2008b) calculates a two-dimensional distance (e.g., discounting topography) to both permanent and all water sources. Both distance measures are coded as indicated in Table 29. The second method takes advantage of algorithms in GIS to calculate round-trip time-costs to permanent water (e.g., accounting for slope both to and from permanent water sources). As shown in Table 30, time-costs are coded to normalize travel time across the span of a single day, where greater than 10 hours is equivalent to more than a day to retrieve water from a permanent water source.

Table 29. Coded Distance to Water (Permanent and All Water)

Code	Distance to Water
1	> 500 m (1,640.5 ft.)
2	201 to 500 m (659.5 to 1640 ft.)
3	0 to 50 m (0 to 164 ft)
4	51 to 200 m (164.1 to 659 ft.)

Table 30. Coded Time-Cost to Permanent Water

Code	Distance to Water
1	> 10 hrs
2	5 to 10 hrs
3	2 to 5 hrs
4	1 to 3 hrs
5	< 1 hr

Distance to Lithic Procurement

Geographic attributes not related to energetic productivity may impact the locations of prehistoric archaeological sites. Conversely, the archaeological record does not always directly reflect gustatory consumption. Unlike other models, we included time-cost distance to known lithic procurement sources as a variable in the following factor analysis. The underlying assumption is that concerns regarding lithic procurement costs are evaluated during the seasonal movements of foraging groups. If prehistoric site placement is modified to account for the acquisition of lithic raw materials, then a "distance to lithic procurement" variable should be revealed in the following factor analysis.

For this study, lithic procurement sites were pulled from the Class I database which was compiled as part of the SOW. Distance to lithic procurement was calculated with algorithms in GIS to calculate round-trip time-costs to lithic procurement (e.g., accounting for slope both to and from quarry sources). As shown in Table 31, time-costs are coded to normalize travel time across the span of a single day, where greater than 10 hours is equivalent to more than a day to retrieve raw lithic materials from a quarry.

Table 31. Coded Time-Cost to Lithic Procurement Site

Code	Distance to Water
1	> 10 hrs
2	5 to 10 hrs
3	3 to 5 hrs
4	1 to 3 hrs
5	< 1 hr

Land Capability Class Variable

Soil type is a measurable environmental variable and useful for sensitivity modeling (Drews et al. 2002; Reed and Chandler 1984), though others have indicated a decreased utility for modeling seasonal behavior, specialized site types, or diachronic change based on types of soils (Binford 1980; O'Neil 1993). Other sensitivity models in Colorado have used soil data, with varying degrees of success. Two sensitivity models developed for western Colorado have indicated soil type is not a strong factor in prehistoric archaeological site locations (Grady 1980:233, 238-23; Newkirk and Roper 1983:155), though the Roan Plateau study in southwestern Colorado showed that soil type is an important determining factor in the locations of prehistoric archaeological sites (Hoefer et al. 2002:40). Soil type can be used to model archaeological site locations in two basic ways: 1) as an indication of landscape productivity and overall favorability for human habitation (e.g., low terraces, alluvial soils) (Fitting and Anderson 1978), and 2) as an indicator of favorable environments for the preservation of archaeological materials (e.g., degradable artifacts and stratigraphic separation) (Drews et al. 2002).

Alpine's UPAP study made use of soil data, in the form of the U.S. Department of Agriculture, Natural Resource Conservation Service Land Capability Class (LCC) system (http://SoilDataMart.nrcs.usda.gov/) (Smith Gebauer 2004) with limited success. LCC, as defined by the Natural Resource Conservation Service, is a formal classification of soils into eight ranked groupings made primarily for agricultural purposes (Klingebiel and Montgomery 2010). The rankings are based on composite soil properties; which include minimum soil rooting depth, soil texture, percentage of coarse rock fragments, slope, soil permeability, available water capacity, drainage class, salinity, and erosion hazard. The original LCC groups arable soils according to their potentials (e.g., limitations and adaptability) for sustained production of common cultivated crops. Non-arable soils (e.g., those unsuitable for sustained crop cultivation) are grouped in recognition of

their ability to sustain permanent vegetation. Since the original LCC rankings are focused on the likelihood that an area of the landscape can be permanently transformed for cultivation, the categories may not be directly applicable to prehistoric site placement, which is why they possessed poor overall predictability for cultural resources in the UPAP (Smith Gebauer 2004:7).

For this model, the LCC rankings are retained as a useful composite of numerous landscape attributes, though the rankings are organized differently for prehistoric sites than currently used by the USDA (Table 32). Drawing from the UPAP model, most prehistoric sites are not expected to be highly correlated with cultivation potential (Smith Gebauer 2004:7). This may change during the Formative era, with the addition of corn agriculture (see Greubel et al. 2006), though the relatively small percentage of agricultural sites in the UFO database suggests that their overall influence will be minimal. Although not tested herein, it is expected that during the historic period, when homesteaders moved into the region, the likelihood of agricultural potential being a strong predictor of site location increases. The interpretive value of the LCC rankings during the historic period may be negative, however, when sites are associated with mining. The largest classificatory difference between the prehistoric and original LLC rankings, following Reed et al. (2008a; 2008b) is based on the assumption that level ground lacking cultivation potential retains residential potential (prehistoric Class VI) (cf. Reed et al. 2008a, b).

Table 32. Land Capability Class (LCC) Ranking Variables

Prehistoric LCC[1]	Definition	Original LCC[2]
n/a[3] (0)	soils have slight (e.g., correctable) limitations that restrict their agricultural use	1
n/a[3] (0)	soils have moderate limitations that reduce the choice of plants or require moderate conservation practices	2
Class I (1)	soils have limitations that preclude their use for commercial plant production and limit their use to recreation, wildlife, water supply or esthetic purposes	8
Class II (2)	soils have very severe limitations that make them unsuited to cultivation and restrict their use mainly to grazing, forestland, or wildlife	7
Class III (3)	soils have severe limitations (e.g., steep slope, rocky soils, severe salinity) that make them generally unsuitable for cultivation and limit their use to pasture/range, forestland, or wildlife food and cover	6
Class IV (4)	soils have severe hazard of erosion and other limitations that restrict the choice of agricultural plants or require very careful management	4
Class V (5)	soils have moderate to little hazard of erosion but have severe limitations that reduce the choice of plants or require special conservation practices, or both	3
Class VI (6)	soils have little or no hazard of erosion but have non-removal limitations (e.g., moderate salinity) that limit their use mainly to pasture, range, forestland, or wildlife food and cover	5

[1] = Ranking in original classification scheme is reversed to accentuate positive correlations in the model.
[2] = Following (Klingebiel and Montgomery 2010) and (Smith Gebauer 2004)
[3] = Although defined as 1 and 2, respectively, in the original LCC ranking, this soil type is not found within the UFO boundaries.

Site Sampling Strategy

Although not explicit in the reports, it is our understanding that sensitivity models for the Kremmling and Glenwood Springs BLM-FOs (Reed et al. 2008a; 2008b) utilized a sampling regime in their sensitivity models, while the UPAP model did not (Smith Gebauer 2004). Explicit in Reed et al. (2008a:115; 2008b:102) is that the results of the sensitivity maps "were evaluated based on all known sites" (3,884 and 747, respectively), thereby using the sites which were used to build the model to test the model. In the UPAP database, 1,480 sites, and an equal number of non-site points, were used to build the model, which was then tested by overlaying the same sites on the sensitivity maps (Smith Gebauer 2004:8). In this fashion, the model that included the most variables (e.g., model 3 with 6 variables) was found to be "the best for predicting the location of sites" (Smith

Gebauer 2004:8). Intuitively, the model that includes the highest number of independent variables is also most likely to provide the strongest results (Berry 1984). The UPAP model was, however, tested with a Class II inventory, which confirmed the models accuracy except in areas of high elevation (Reed et al. 2006).

To improve the efficacy of the UFO sensitivity model, we randomly selected half of the sites within the UFO database for model building, while the remaining half were retained for evaluative testing of the interpretive power of the resultant model (cf Berry 1984). To ensure that each of the different landscape units (LU) outlined in the SOW (e.g., North Fork of the Gunnison, Ouray area, Uncompahgre Plateau, West End, and Dominguez-Escalante NCA) and all of the site types (e.g., open artifact scatter, open architectural, wickiup, rock art, sheltered architectural, sheltered artifact, lithic procurement, cambium tree, and burial) are equally represented in the database, the sample was stratified by site type within LU. A stratified sampling regime allows for a possible increase in precision (e.g., providing a smaller error range), when subgroups of a population whose "means may be different and whose members vary little from each other," are present (Drennan 1996:241). With 3,787 total sites in the UFO database, the models are built with 1,895 total sites; 89, 190, 440, 1,077, and 95 sites from each landscape unit listed above. Additionally, four of the eight sites on private land are included in the model within their respective LU. Following the above stratification protocol, sites were randomly selected without replacement.

Following Drennan (1996:143) it is clear that in all but the Uncompahgre Plateau and West End LUs, the likelihood of our sample being representative of site patterning on the landscape falls below a 95 percent confidence level threshold. In the North Fork and Dominguez-Escalante Canyon, confidence levels fall to roughly 80 percent, while the Ouray area sample is likely to provide approximately 90 percent confidence in the representativeness of the sample. The lower confidence levels in the North Fork, Ouray, and Dominguez-Escalante LUs is a result of the actual number of sites recorded, and not the sampling procedure, which is designed to maximize the utility of the available, albeit small, dataset. Too few sites exist on private land to have any more than random confidence (e.g., 50 percent) in the sample being representative of the cultural landscape.

The 1,892 sites that were not selected for model-building (88, 190, 440, 1076, 94, and 4, respectively in each LU) are utilized to assess the efficiency of the sensitivity model in lieu of ground-truthing. Evaluation of the model relies on chi-square (χ^2) calculations for modeled and non-modeled site distributions in the high, medium, and low sensitivity areas of the BLM-UFO (DeCoster 1998). The null hypothesis is that the model adequately accounts for the data (e.g., there are no significant distinctions between the modeled and tested site samples). Recognizing that the results of a χ^2 calculation are sensitive to sample size, a Tshuprow's T coefficient[1] is used to assess the strength of the results.

Results

For consistency, factor analysis across the RMP, as well as subgroup analysis by LU, site type or cultural affiliation followed the outline below. Each phase of the factor analysis was conducted using Statistical Package for the Social Sciences (SPSS) version 12.0.1. Factor extraction, following (Buley 1995: Table 2), relied on principal axis factoring (PAF) which has neither a positive or negative impact on the calculations when correctly identifying factors. Following Reed et al. (2008a; 2008b), the Keyser-Meyer-Olkin (KMO) measure of sampling adequacy (a ratio varying from 0 to 1, one being better suited), and Bartlett's test of sphericity (an approximate χ^2 value), both automatically conducted within SPSS, were checked for suitability of the variables to factor analysis. As an example, for all prehistoric site types across the RMP, the KMO values ranged from 0.45 for cambium tree sites to 0.57 for open architectural sites. For individual factor analyses of all prehistoric site types across the RMP, the KMO values ranged from a low of 0.489 for open

[1] Tshuprow's T = SQRT(χ^2/(n*SQRT((r-1)*(c-1)))). Where n = sample size, r = row, and c = column.

architectural sites to a high of 0.623 for wickiup sites. For all factor analysis cases, the Bartlett's test of sphericity yielded a different χ^2 value, though for individual factor analysis it proved to be highly significant.

To fine-tune the results of factor analysis, the initial communalities were assessed and renegotiated. A variable's communality is the amount of the variable's variance that is accounted for by the components or factors that are held in common. The lower the value, the less that variable holds in common to the group. By minimizing unique variables (e.g., increasing the total percentage of common variance) we strengthen the common suite of factors and are better able to identify which factors are held in common for site selection. In the example below (Table 33), the extracted communality values in the primary assessment account for roughly 44 percent of the communality in the dataset (e.g., the total variance explained divided by the number of factors). A second run, having removed the most unique variables, accounts for roughly half of the common variance. Continuing the process, the communalities now account for slightly more than half of the common variance. In the fourth permutation, which attempts to strike a balance between the number of topographic feature and material need variables by removing the lowest three faunal variables, accounts for 55 percent of the communality of the location of all prehistoric sites. For this example, however, this means that 45 percent of the variation is unique and non-selective. Future reiterations remove additional variables and result in lower total explained variance, indicating that the seven variables listed below (Table 33) provide the highest communality and likely retain the most interpretive values. While individual LU factor analyses for this study all utilized the methodology described above, the individual results (e.g., which variables are selected and at what value) vary dramatically between LUs, site types and cultural affiliations.

Table 33. Example of extracted communalities for all prehistoric sites across the RMP.

Variables	Initial	Secondary	Tertiary	Quaternary
Elk Winter Range	.927	.864	.876	.826
Elk Summer Range	.860	.924	.901	.991
Vegetation	.657	.264	.267	.298
Elevation	.604	.605	.533	.408
Deer Winter Range	.602	.634	.562	.611
Turkey Winter Range	.559	.497	.525	-
Distance to Permanent_Water	.509	.159	-	-
Prairie Dog Summer Range	.440	.428	.415	-
Time-Cost to Permanent_Water[a]	.413	-	-	-
LLC Category	.397	.475	.467	.443
Eagle Winter Range	.386	.399	.376	-
Slope	.310	.228	.250	.276
Distance to All Water	.171	-	-	-
Time-Cost to Lithic Procurement Site	.116	-	-	-
Aspect	.020	-	-	-
Snow Goose Winter Range	.005	-	-	-
Total Variance	**6.976**	**5.477**	**5.172**	**3.853**
No. of factors	16	11	10	7

[a] = variable was removed after initial assessment as it holds less communality than 'Distance to Permanent_Water' and its removal keeps factor analysis from doubling-up on two measures associated with the same permanent water sources.

Instead of calculating the total explanatory percentage from communality values (as above), SPSS displays the cumulative percentage of explained variance with associated eigenvalues (Table 34). However, it must be recognized that the 'factor' values here do not correlate to specific variables. Rather, the factors are a combination of the communality of all variables. Put another way, the strongest linear co-variance of the seven final variables in Table 33 is Factor 1, the second strongest linear co-variance is Factor 2, etc. (Table 34). Whereas in the previous example we were concerned with communality, the initial eigenvalues represent the separation or explanatory variance of the factors and can be thought of as the degree of uniqueness provided in the dataset by the most common variables. Thus, in Table 34, Factor 1 initially explains one-third of the variance in the dataset. As each factors eigenvalue decreases, it explains less variability in the dataset, which is shown in the scree plot below (Figure 54). Generally, the strongest corner (e.g., shoulder) of the scree plot or initial eigenvalues greater than one are retained as the strongest explanatory factors (Widaman 1993). The scree plot (Figure 54) further supports our use of factors with eigenvalues over one, as the Factors 4, 5, and 6 have similar explanatory value with little added beyond Factor 3. The highest explanatory variables are then rotated, which redistributes the variability over the extracted factors. The Varimax rotation utilized herein attempts to maximize the variance of the retained factors, in this case, the first three. As calculated in the Varimax Rotated cumulative percent column of Table 34—and as was calculated above—the initial three factors account for 55 percent of the variation in the dataset.

Table 34. Example of eigenvalue and cumulative explanatory percentage for all prehistoric sites across the RMP.

Factor	Initial Eigenvalues			Extraction Sums of Squared Loadings			Varimax Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.355	33.638	33.638	1.956	27.942	27.942	1.797	25.665	25.665
2	1.554	22.203	55.841	1.327	18.954	46.896	1.347	19.250	44.914
3	1.145	16.357	72.198	.569	8.131	55.026	.708	10.112	55.026
4	.650	9.285	81.484	-	-	-	-	-	-
5	.628	8.978	90.462	-	-	-	-	-	-
6	.498	7.108	97.570	-	-	-	-	-	-
7	.170	2.430	100.000	-	-	-	-	-	-

Extraction Method: Principal Axis Factoring.

The final step in factor analysis is linking the individual variables—in this case seven—to their respective loadings (e.g., strength) in each of the retained factors. Only by doing so is it possible to assess the relative amount of "pull" each variable has on prehistoric site selection. The information is presented within SPSS's output in a factor score coefficient table (Table 35), where high numbers indicate a stronger influence within the factor. In our example for all prehistoric sites in the entire UFO RMP area, the factor scores presented in Table 35 indicate that Factor 1 is mainly driven by associations with *Elk Winter Range*, though *Deer Winter Range*, *Elevation*, and *Vegetation* are of importance. Factor 2 is nearly entirely influenced by *Elk Summer Range*. The *LLC* classification and *Slope* account for the majority of the third factors influence, which is the lowest included eigenvalue.

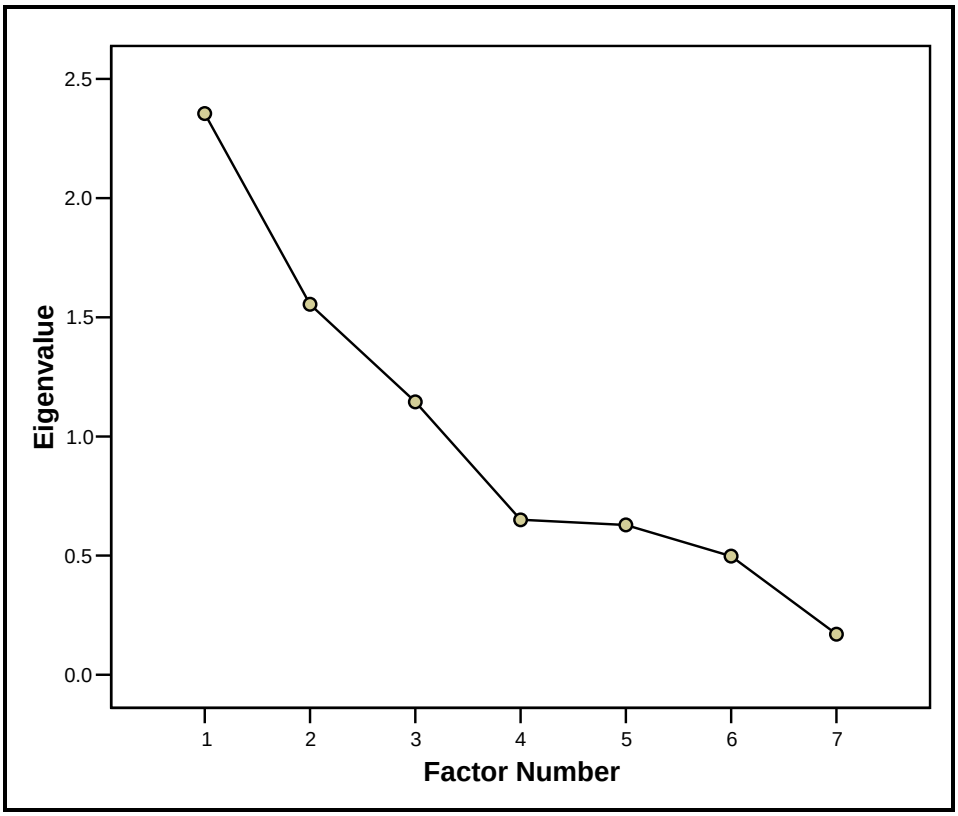


Figure 54. Scree plot for all prehistoric sites across the RMP.

It appears, in our example, that the majority of prehistoric site selection is influenced by the ranges of elk (e.g., Factor 1 and Factor 2) and that deer winter ranges, elevation and vegetation may peripherally overlap with the ranges of elk. Soil classification (LLC ranking) and slope are clearly tertiary in their influence, suggesting a preference for specific topographic attributes, though this shouldn't come as a surprise since the factor scores loadings (Table 35) are ranked comparably in strength relative to their final extracted communality scores (Table 33).

Table 35. Factor score coefficient matrix for all prehistoric sites in the RMP.

	Factor		
Variables	**1**	**2**	**3**
Elk Winter Range	.637	-.005	-.037
Deer Winter Range	.257	.018	-.064
Elevation	.154	.025	.043
Vegetation	.152	-.037	.094
Slope	.069	-.035	.360
LLC	.018	-.032	.499
Elk Summer Range	-.303	1.013	-.021

Extraction Method: Principal Axis Factoring.
Rotation Method: Varimax with Kaiser Normalization.

Mapping the Results

One of the main deliverables of this project is a set of sensitivity maps that show areas of high, medium, and low site density. While the above results provide an indication of the relative strengths of variables as "pull" factors for prehistoric site selection, it remains difficult to visualize what the factor score coefficient matrix (Table 35) means at any given location on the landscape. To model the overlapping "pushes" and "pulls" of landscape variables, a map unit was assigned a variable based on the weighted loadings of the retained factors (e.g., sums of the weighted independent variables) (Table 34). Weighting all retained factors allows for the creation of sensitivity maps that are effectively a non-reduced mathematically weighted representation of the underlying communality. More simply, maps that include all variables based on their weighted differences from the underlying norm more accurately map the cumulative effect of factors affecting site location. For the above example, wherein we have seven independent variables that are highly influential within the dataset for all prehistoric sites across the RMP, the formula applied to each map unit would look like the following:

Equation 1. Map unit value

(1.797*((Elevation*0.154) + (Slope*0.069) + (LLC*0.018) + (Vegetation*0.152) + (Elk Summer Range*-0.303) + (Elk Winter Range*0.637) + (Deer Winter Range*0.257))) + (1.347*((Elevation*0.025) + (Slope*-0.035) + (LLC*-0.032) + (Vegetation*-0.037) + (Elk Summer Range*1.013) + (Elk Winter Range*-0.005) + (Deer Winter Range*0.018))) + (0.708*((Elevation*0.043) + (Slope*0.360) + (LLC*0.499) + (Vegetation*0.094) + (Elk Summer Range*-0.021) + (Elk Winter Range*-0.037) + (Deer Winter Range*-0.064)))

The mapping of the above equation was accomplished within the ESRI (Earth Science Research Institute) ArcGIS 9.3.1 program. To accomplish the mapping, the entire RMP area was split into a point shapefile, where each point was established at ⅛th mile (201 m) on a side, equating to individual 0.02 mile^2 (40,401 m^2) areas. The greater than over 350,000 points in the shapefile were then assigned attributes based on the original 20 variables. The attributes in each point were then assigned a value based on the application of an appropriate factor analysis equation (e.g., Equation 1). Thus, when asking questions regarding specific suites of sites (e.g., Formative sites) in the West End LU, the equation is very different, though arrived at in the same way. Once every point was assigned a value, the map was rasterized and the values divided into three categories that represent high, medium, and low site sensitivities (e.g., densities). Division of the rasterized map relied on natural breaks in the range of calculated values (e.g., Jenks' method). Jenks' method seeks to partition data into classes based on natural groups in the distribution (e.g., low points or valleys in a histogram of the values). Thus, ArcGIS identifies divisions that best group similar values and maximize the differences between classes. The low sensitivity zone includes cells with a low final factor value (<5.41 for all prehistoric sites in the RMP), where the probability of encountering prehistoric archaeological sites is likely reduced. The high sensitivity zone includes cells with a high final factor value (>8.54 for all prehistoric sites in the RMP), where the probability of encountering prehistoric archaeological sites is likely increased. By mapping the weighted factor scores, it is possible to assess the relative likelihood of encountering a site at any given point on the landscape (Figure 55 through Figure 59).

To evaluate the utility of the sensitivity zones, the GIS maps were populated with the locations and attribute data for known prehistoric sites in the database. Summaries of the numbers of sites in each zone were then assessed within ArcGIS following the previously described sampling regime where half the sites were used for model building (i.e., the "modeled sites") and the other half for evaluative testing (i.e., the "tested sites") (Table 36). For all prehistoric sites in the RMP, the number of modeled sites closely matches the number of tested sites within each sensitivity zone, thus meeting the null hypothesis that, in our example above, the model accurately predicts all prehistoric site locations across the RMP from the known site database ($\chi^2 = 0.204$, d.f. = 2, $p = 0.9$, Tshuprow's T = 0.001).

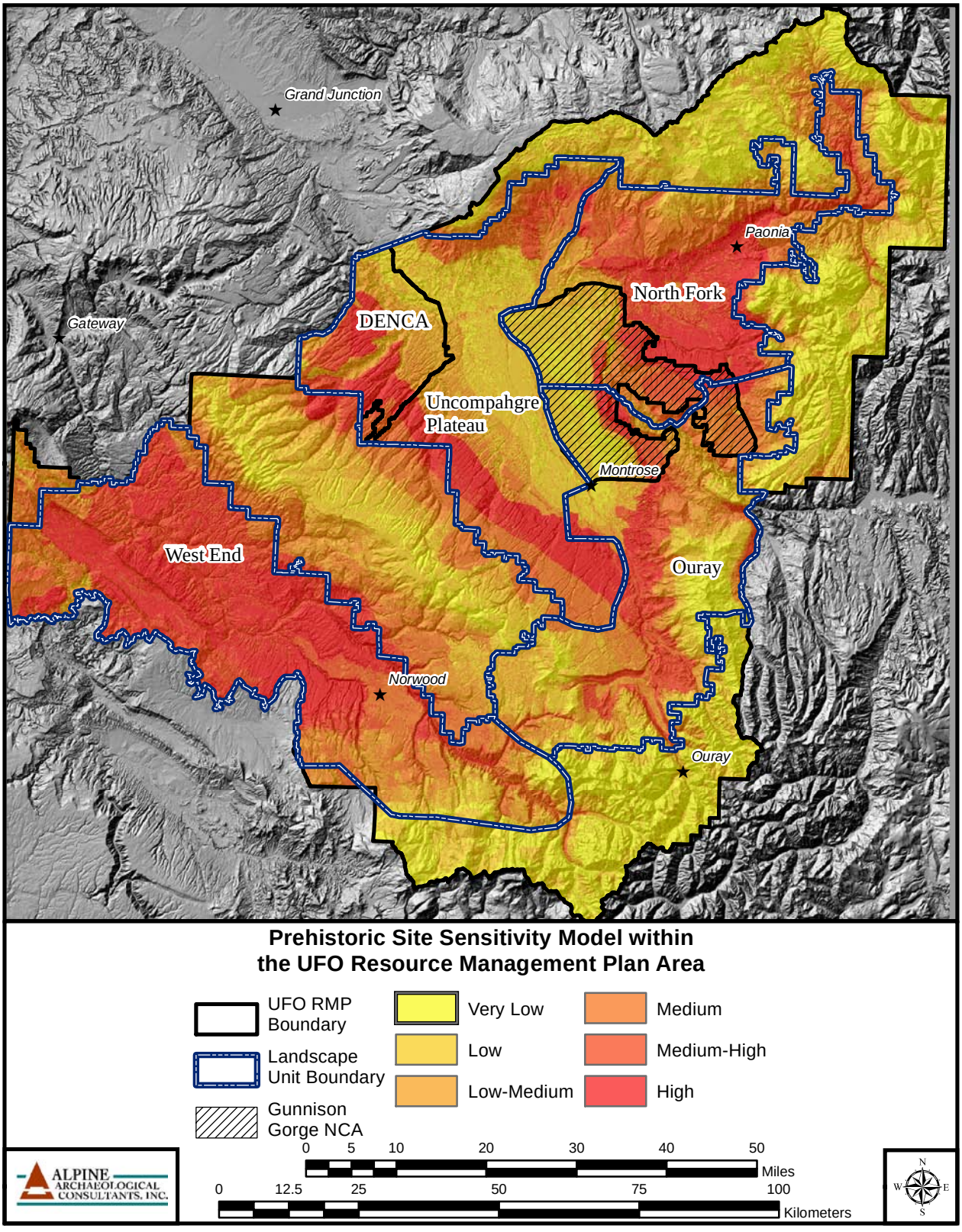


Figure 55. Sensitivity map for all prehistoric sites in the BLM-UFO RMP area.

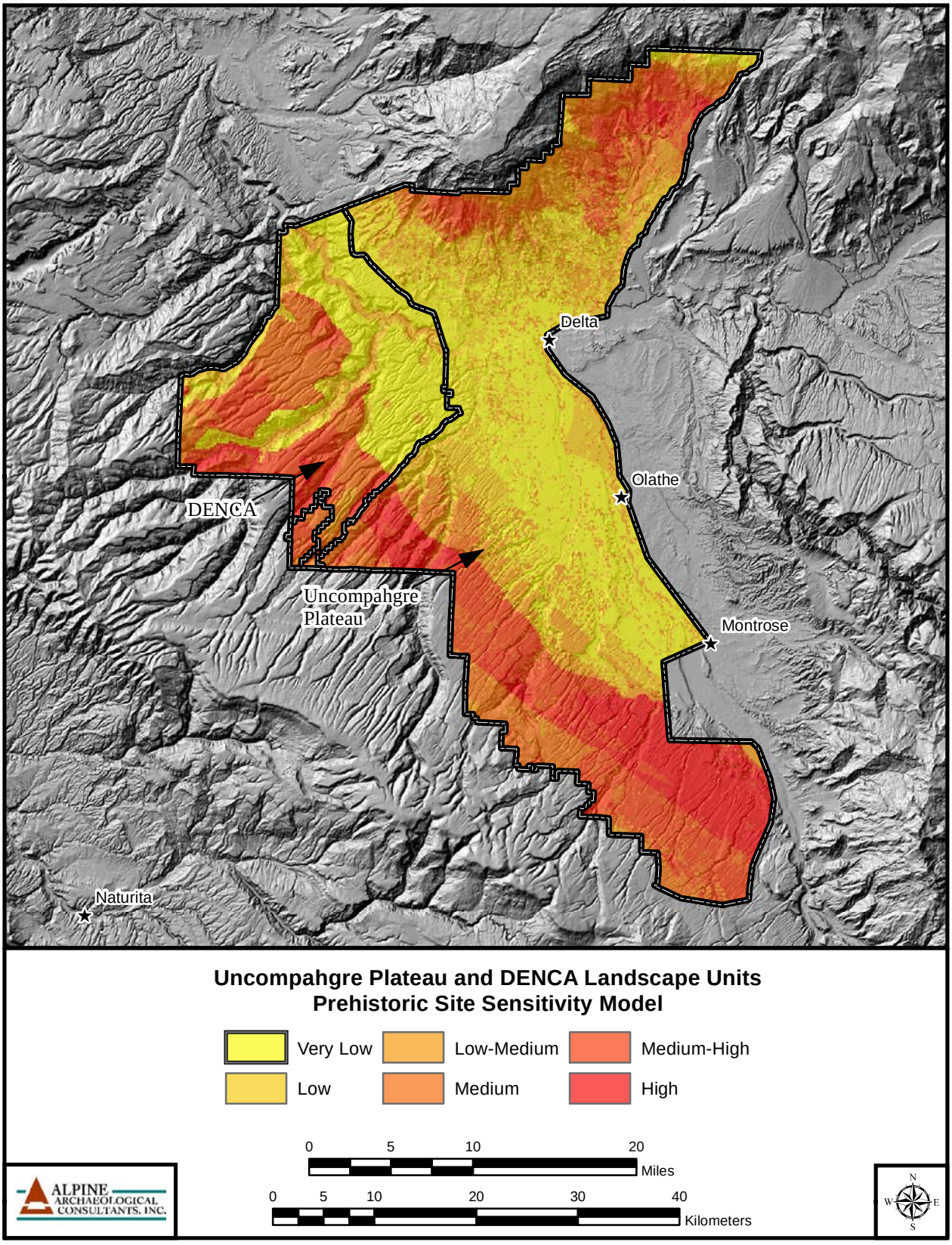


Figure 56. Sensitivity map for prehistoric sites in the DENCA and Uncompahgre Plateau LUs.

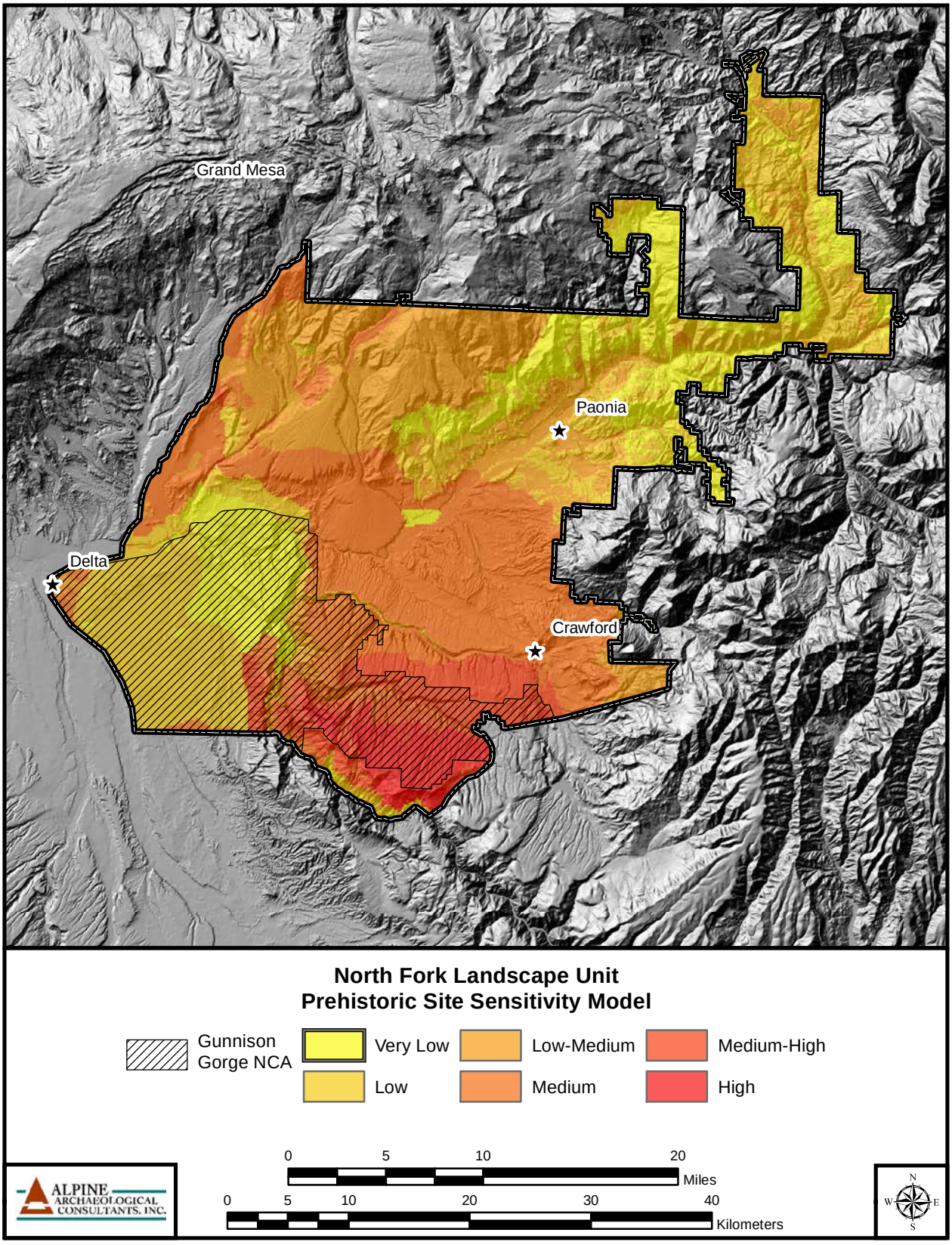


Figure 57. Sensitivity map for all prehistoric sites in the North Fork LU.

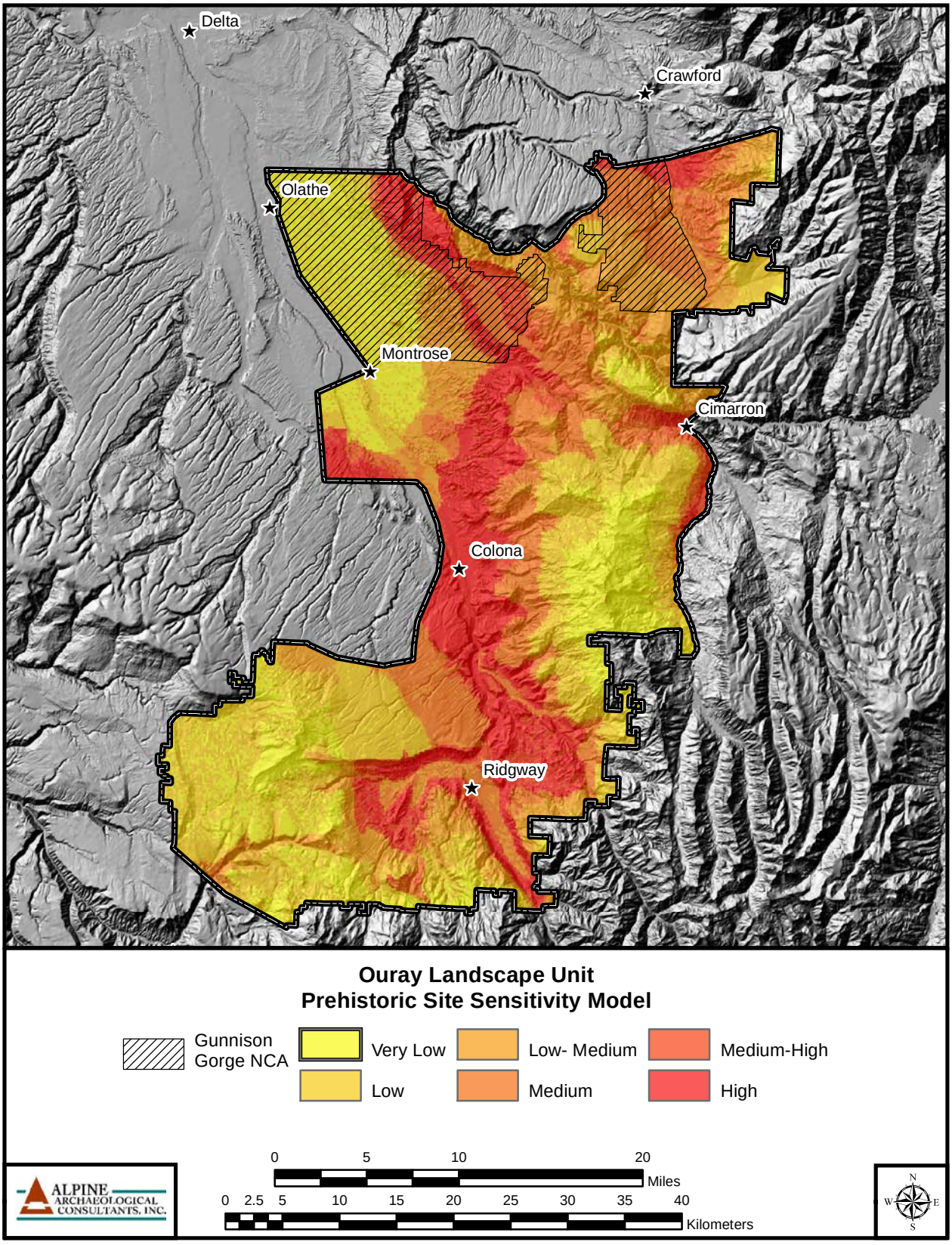


Figure 58. Sensitivity map for all prehistoric sites in the Ouray Area LU.

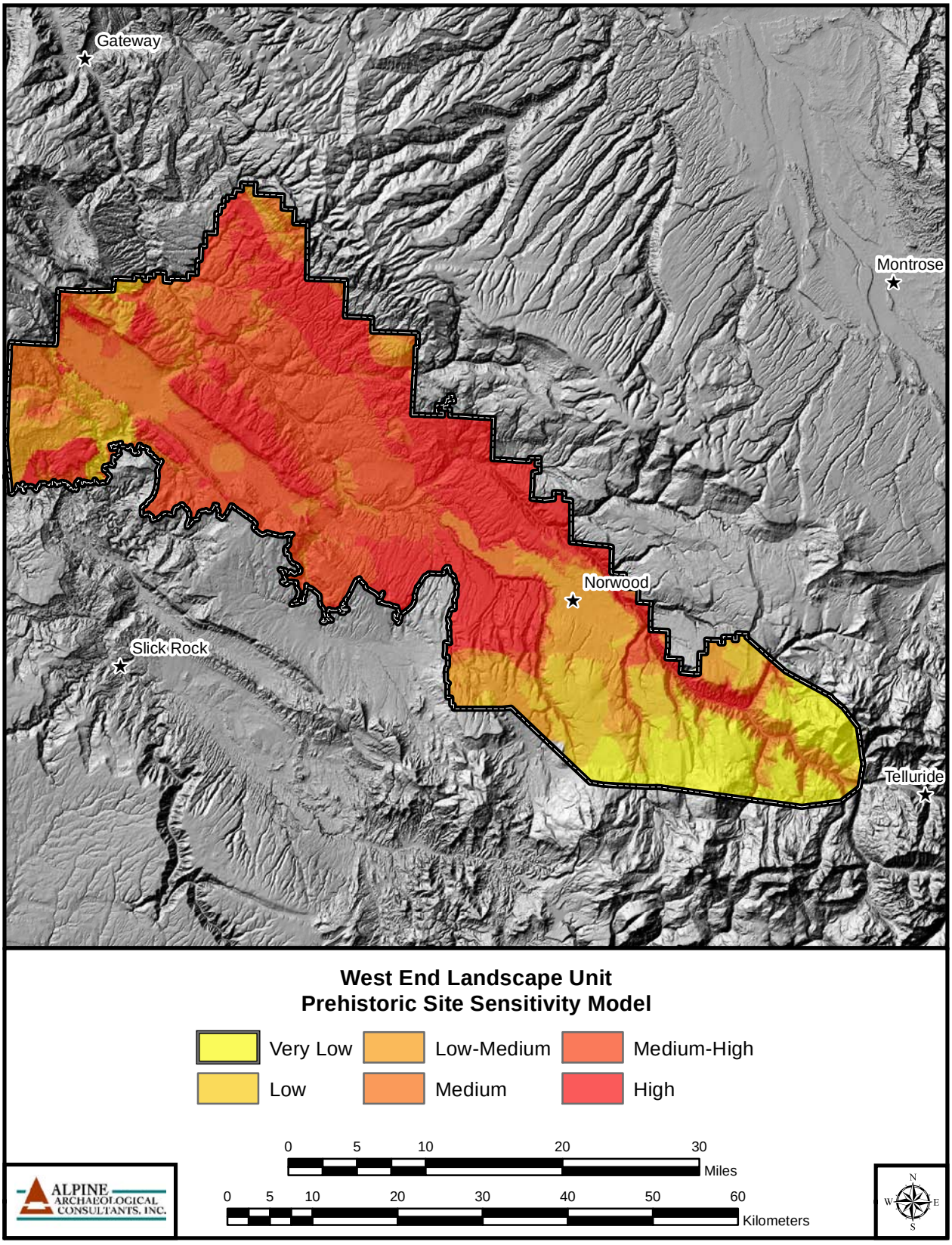


Figure 59. Sensitivity map for all prehistoric sites in the West End LU.

Table 36. Example of Evaluative Testing Procedure for Individual Site Sensitivity Models.

Sensitivity Zone	No. of Modeled Sites (No. of Expected Sites)	No. of Tested Sites (No. of Expected Sites)	Total(s)
High	1,431 (1,428)	1,425 (1,428)	2,856
Medium	673 (671)	668 (70)	1,341
Low	284 (289)	294 (89)	578
Total(s)	**2,388**	**2,387**	**4,775**

A further test of the utility of the model includes mapping known non-site points in an effort to assess underlying environmental variables. Like the sampled half of the sites above, the non-site sampled points are selected by LU with the added requirement of their needing to be within Class III survey areas but outside of site boundaries. Class III site boundaries are a necessary demarcation to ensure that non-site points are, in fact, landscape units without cultural surface expressions. The delineation within Class III survey boundaries has the added benefit of assessing factors that are strongly related to project areas and not necessarily site selection factors. Following the above methodology for non-site points, 17 initial communalities were reduced to 7 variables (*Elevation*, *Elk Summer* and *Winter Ranges*, *Mule Deer Summer* and *Winter Ranges*, *Lynx Summer Range*, and *Bald Eagle Winter Range*) and two factors that explain 62 percent of the variance within the dataset (Table 37). Factor 1 is pulled by elevation and the winter ranges of elk, mule deer and bald eagles. Factor 2 is driven by the total range of elk and the summer ranges of lynx and mule deer.

Table 37. Factor score coefficient matrix for non-sites locations in the RMP.

	Factor	
Variables	**1**	**2**
Elk Winter Range	.555	.278
Bald Eagle Winter Range	.212	-.102
Mule Deer Winter Range	.153	-.022
Elevation	.149	-.088
Mule Deer Summer Range	-.062	.048
Lynx Summer Range	-.101	.050
Elk Summer Range	-.150	.750

Extraction Method: Principal Axis Factoring.
Rotation Method: Varimax with Kaiser Normalization.

What the non-site factor analysis suggests is that the relative distribution of elk and mule deer habitat is highly correlated to both project areas and site locations. This may be due to a taller than normal (i.e., leptokurtic) distribution of elk and mule deer ranges across the project area and in relation to site locations (Table 27). This does not mean that specific artiodactyl range correlations did not drive site selection. As clearly shown in Table 35 and Table 37, elk winter ranges are more strongly correlated to site locations than they are to project areas. Rather, the landscape within the UFO RMP area is conducive to stable seasonal artiodactyl populations which may have been "pull" factors for prehistoric site selection, though interpretations to that effect need to be carefully couched to avoid any assertion of definitive intercorrelation.

Perhaps more important than any one variable is the suite of topographic variables that were linked to site locations. While *Elevation* remains strongly linked in both factor analyses, prehistoric sites across the UFO RMP area are more strongly associated with *Vegetation*, *Slope*, and *LLC* (Table 35), which are lacking within the non-site factor analysis. Thus, while artiodactyl resources are relatively ubiquitous, and perhaps diachronically fluid across the UFO RMP area, the nearly immutable nature of topographic variables may increase the strength of their interpretive associations.

Summary

The prehistoric sensitivity modeling presented herein utilizes factor analysis to assess the degree of covariation among a suite of variables. Some of the variables are strictly environmental (e.g., elevation, slope, LLC, and aspect), while others have potential cultural utility (e.g., lithic procurement, seasonal faunal ranges, etc.). Using factor analysis, those variables were differentially mapped based on LU, site types, and cultural affiliations to tease apart what proxies might be better predictors of an "adequate" resting place. For example, the strength of association between site locations and elk and mule deer ranges suggest that Grady's (1980) hypothesis regarding the collocation of artiodactyls and human occupation in Colorado is not necessarily in error, though the connection may be considerably less linear than originally suggested. As Kohler et al. (2005:87) have noted, environmental variables with strong interpretive value, remain "vastly more simple than reality."

What the sensitivity models used herein did not attempt to assess is the less predictable personal preference factor of prehistoric site selection (Grady 1980). Even if appropriate datasets (e.g., mosquito ranges, wind velocity and direction, etc.) were available at appropriate scales of analysis, it is not clear how useful it would be to map such variables. Object-oriented programming has been undertaken by the VEP (Johnson et al. 2005; Kohler et al. 2005; Varien et al. 2007), though after years of work (2002-2008) they are still attempting to more accurately map water and food resources, leaving the preferential side of cultural activity for another time. The identification and mapping of site locations within non-random survey areas provides land managers with a way to interpret prehistoric land use, though any interpretation should remain within an open, holistic framework that recognizes landscape variation as a place to *begin* understanding potential project impacts, and not as a static solution. By doing so, sensitivity models provide a view of the landscape that is certainly better than "the intuition of archaeologists … [which is] … probably not very accurate" (Johnson et al. 2005:106).

Historic Site Sensitivity Modeling and Maps

Background

Historic site sensitivity modeling for BLM lands in the UFO is based on known past activities, mostly as reflected by land acquisition attempts, coal leasing, oil and gas leasing, and potassium leasing recorded in the GLO Historical Index. Important transportation corridors are taken into account in the modeling and include such things as wagon roads, trails, highways, and railroads along which historic activities may have been focused. Also considered in the modeling is proximity of BLM lands to private lands. This is important because private lands within the UFO were successful acquisitions of land from the public domain (federal land) using the same mechanisms as the attempts at acquiring federal lands that failed. Private lands have been under continuous use, have seen subsequent development, and their owners can be expected to have utilized adjacent or nearby federal lands in the general course of their residency for resource procurement, grazing, and recreation. These activities are responsible for a large number of the more ephemeral sites found on adjacent federal lands.

Federal lands were often the subject of land acquisition attempts that either failed or were relinquished. These land acquisition attempts have left more substantial sites on federal lands than those resulting from use by neighboring private land owners. These sites were embryonic farms and ranches whose development was arrested at various points in time from their initial settlement to their full fluorescence, depending upon how much time, effort, and investment the settlers put in while they attempted to satisfy the legal steps required in obtaining their desired piece of land from the government. It was not uncommon for particular parcels of land to have undergone several acquisition attempts before either being successfully acquired or being left in the public domain. Claims that failed or where relinquished and remained in the public domain are still federal land today and have on them sites representing the varying land acquisition attempts made on them. In addition, a few successful acquisitions occurred in some places on federal lands that have since reverted back to the federal government where the most substantial and developed residential sites can be expected.

Land acquisition attempts were made under a variety of federal laws designed to enable the public to acquire lands from the public domain. The most important and most frequently applied was the Homestead Act of 1862. This act enabled qualified citizens to acquire 160 acres of land if five-years of residency and agricultural use could be demonstrated. The only costs were filing fees. Alternatively, a claimant could pay $1.25 per acre and waive the five-year residency requirement under what was termed a Cash Entry. Most land acquisition attempts in the UFO were made under the Homestead Act. In 1909, the Enlarged Homestead Act enabled 320 acres of land to be acquired, and a further act in 1912 reduced the residency requirement to three years. In addition, the Forest Homestead Act of 1906 authorized homestead settlement with Forest Reserves (later National Forests) of land considered arable and not necessary for public purposes. The land had to be classified as suitable for entry by the Forest Service. Numerous Desert Land Entries were made in the UFO area. These were made under the Desert Land Act of 1877 and enabled 640 acres of land to be acquired if the land were put under irrigation within a three-year time period and the settler paid $1.25 per acre. The amount of land available under an individual claim was reduced to 320 acres in 1891. Land classified by the Reclamation Department (later the Bureau of Reclamation) as suitable for irrigation by one of the several Reclamation projects in the region were also subject to settlement as Reclamation Homestead Entries. Money received from settlers in the course of obtaining a Reclamation Homestead was earmarked for repayment of the costs for the reclamation project. The last land acquisition act was the Stock-Raising Homestead Act of 1916, which enabled 640 acres of land to be acquired if it was deemed suitable only for grazing or the raising of forage. Failed acquisition attempts under this act are generally from the 1920s and 1930s and were wide ranging over the UFO area, but probably have left only ephemeral evidence on the landscape.

Mining claims form another class of land acquisition from the public domain. These were generally placer mining claims along river and streams and lode mining claims where hard-rock mining was carried out. Mining claims could be staked anywhere that valuable minerals were thought likely to exist, but a claimant had to demonstrate the existence of valuable minerals for a Mineral Entry Patent to be issued. Many mining claims were kept current on the public domain for long periods by doing Annual Assessment work on the claims and filing Affidavits of Labor in the appropriate county courthouse. The locations of these claims were staked on the ground, described with varying degrees of accuracy on their Location Certificates, and were only formally surveyed and their locations accurately known only if a claim went to patent. The vast majority of mining claims were never patented and many were worked extensively and never went into private ownership. Despite not having formal title to the land on which the claims were situated, claims were readily bought, sold, and leased. This was particularly the case for uranium claims, which were infrequently patented but often extensively mined.

Sensitivity Model

The sensitivity model presented herein applies only to BLM lands; the historic sensitivity maps by landscape unit are shown in Figure 60 through Figure 63. It is expected that all private lands would have potential for high historic site densities and that lands under other land management, such as the State of Colorado or the U.S. Forest Service, may have other past land use considerations that would result in different historic site density expectations.

Areas of high potential for historic sites are BLM lands where Historical Index information indicates that two or more historic residential sites per square mile can be expected, where other activities, such as uranium or coal mining, are known to have taken place resulting in good potential for substantial historic sites, or where a railroad, an important early trail, or a major wagon road passed through BLM land presumably forming a corridor of use where historic sites can be anticipated. These lands comprise 18.0 percent of BLM lands in the UFO. Land acquisition attempts under the Homestead Act, Desert Land Act, and Reclamation Homestead Act are expected to have left substantial, but short-term residential sites. These residential sites will be small and relatively non-complex and may contain the remains of a small residential structure, possibly a root cellar, and occasional evidence of other small outbuildings. These sites will have limited artifact assemblages evidencing only one to five years of occupation. In addition, areas of high potential for historic sites include lands that were successfully acquired from the public domain through Cash Entry or Homestead Entry, but have subsequently been reacquired by the federal government. These reacquired lands are expected to have at least one highly developed historic residential site, comparable to what might be found on private land, and other less developed historic residential sites from nearby unsuccessful land acquisitions. On the eastern side of the Uncompahgre Plateau, lands on the upper reaches of Escalante Creek, on Sawmill Mesa and the mesas between Cottonwood and Monitor Creeks, and on Monitor Mesa were subject to considerable land acquisitions attempts, several of which were successful and are represented by private inholdings surrounded by federal land. In some instances, it appears that successful acquisitions fell out of private ownership, perhaps due to failure to pay taxes, and are now in the ownership of the State of Colorado and managed as units of the Escalante State Wildlife Area. Elsewhere, numerous attempts at land acquisition were made along Roubideau Creek, along the eastern edge of the Uncompahgre National Forest above the Roubideau Bench, and on the lower reaches of Cushman and Dry Creeks on the eastern slope of the Uncompahgre Plateau west of Delta, on both sides of the Gunnison River below the confluence of the North Fork of the Gunnison near Austin, and east of Nucla and south of Naturita. These are within sections that are known to have had successful land acquisitions from the public domain through Cash Entry and Homestead Patents, but were reacquired by the U.S. government.

Coal mining, indicated in the Historical Index by permits or leases, is another activity for which substantial sites are expected to have been the result. Expected sites are coal mines, offices, and residences. Coal leases were not made until 1920, so earlier evidence of coal mining may be present elsewhere on BLM lands, but sites are probably concentrated in the vicinity of known lease areas or on lands adjacent to coal mines on private land. South of Montrose along Happy Canyon Creek near Sims Mesa, west of Shinn Park, east of US Highway 550 south of Dry Cedar Creek, and on both sides of US Highway 550 in the vicinity of the Billy Creek State Wildlife Area, high site density areas have been defined because some of the lands there were leased for coal in the 1920s and 1930s. Whether these areas have evidence of developed coal mines is presently not known. Elsewhere, lands where coal permits or leases were made in the 1920s, 1930s, and 1940s have been identified as having high site potential. These include a block of land on the Delta-Montrose County line west of the Black Canyon and scattered parcels around Bowie and east of Somerset; most of the parcels in the Bowie and Somerset area have known mines in the vicinity. In addition, two parcels were identified as having high site potential northeast of Cedaredge where maps show mines on BLM land.

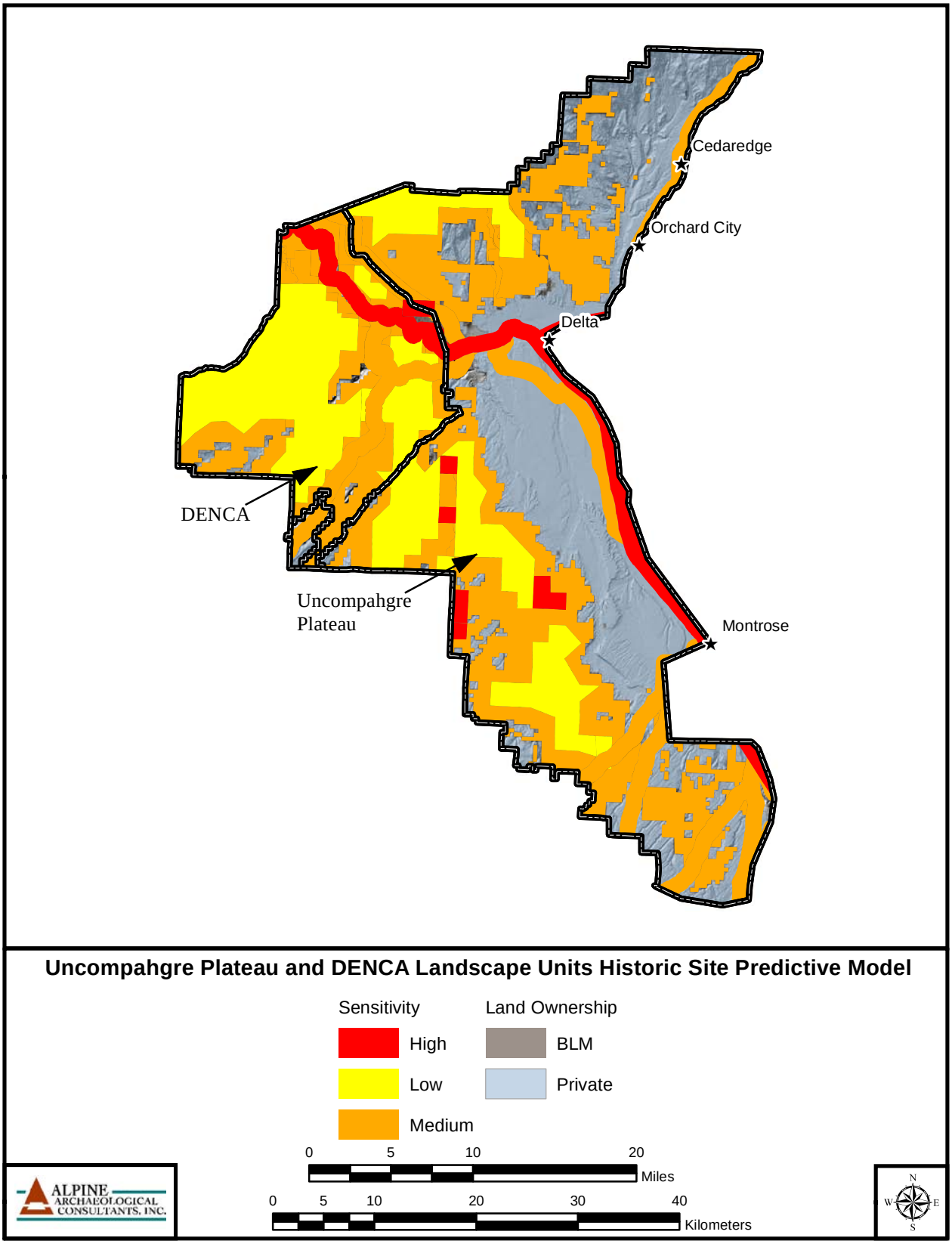


Figure 60. Sensitivity map for historic sites in the DENCA and Uncompahgre Plateau LUs.

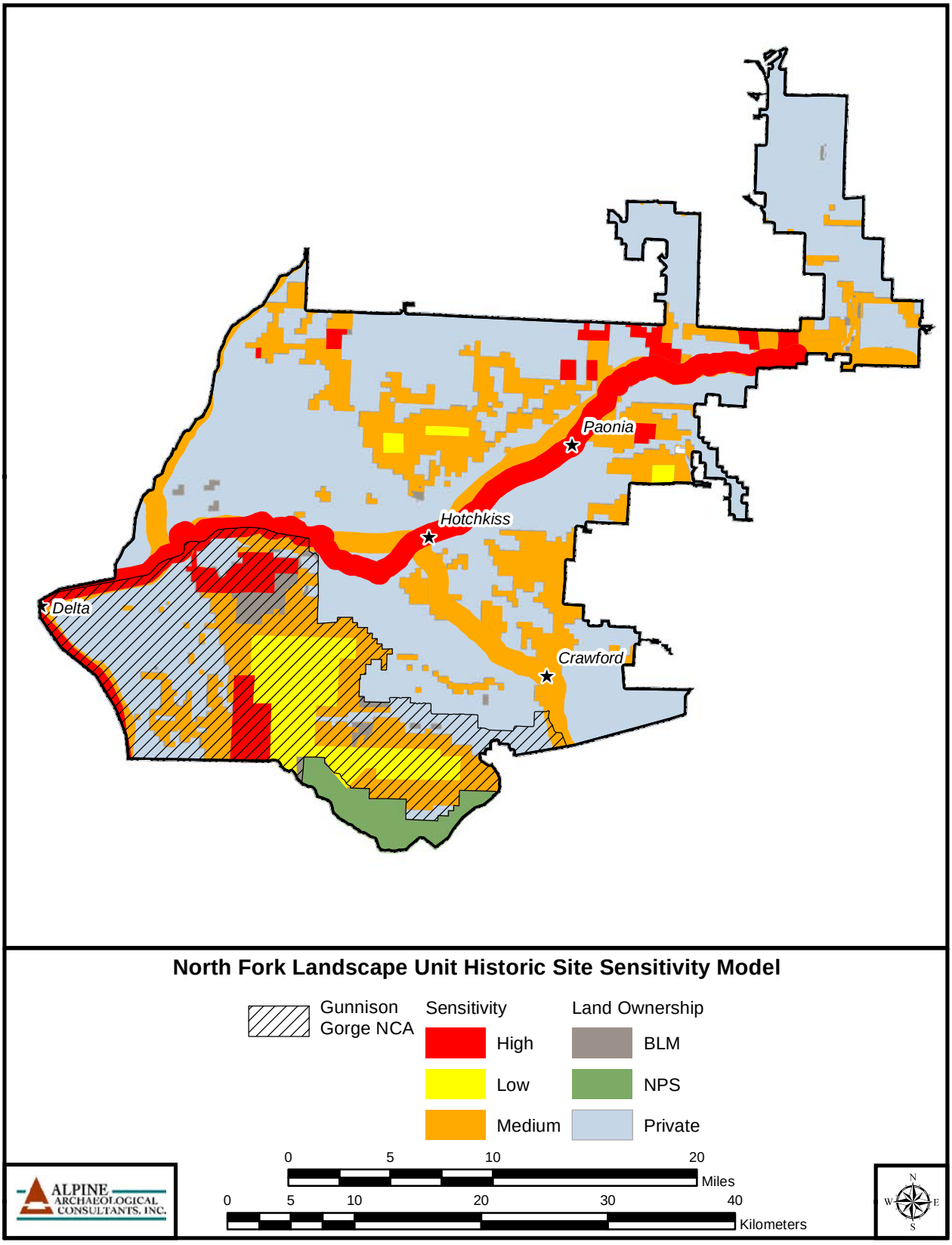


Figure 61. Sensitivity map for historic sites in the North Fork LU.

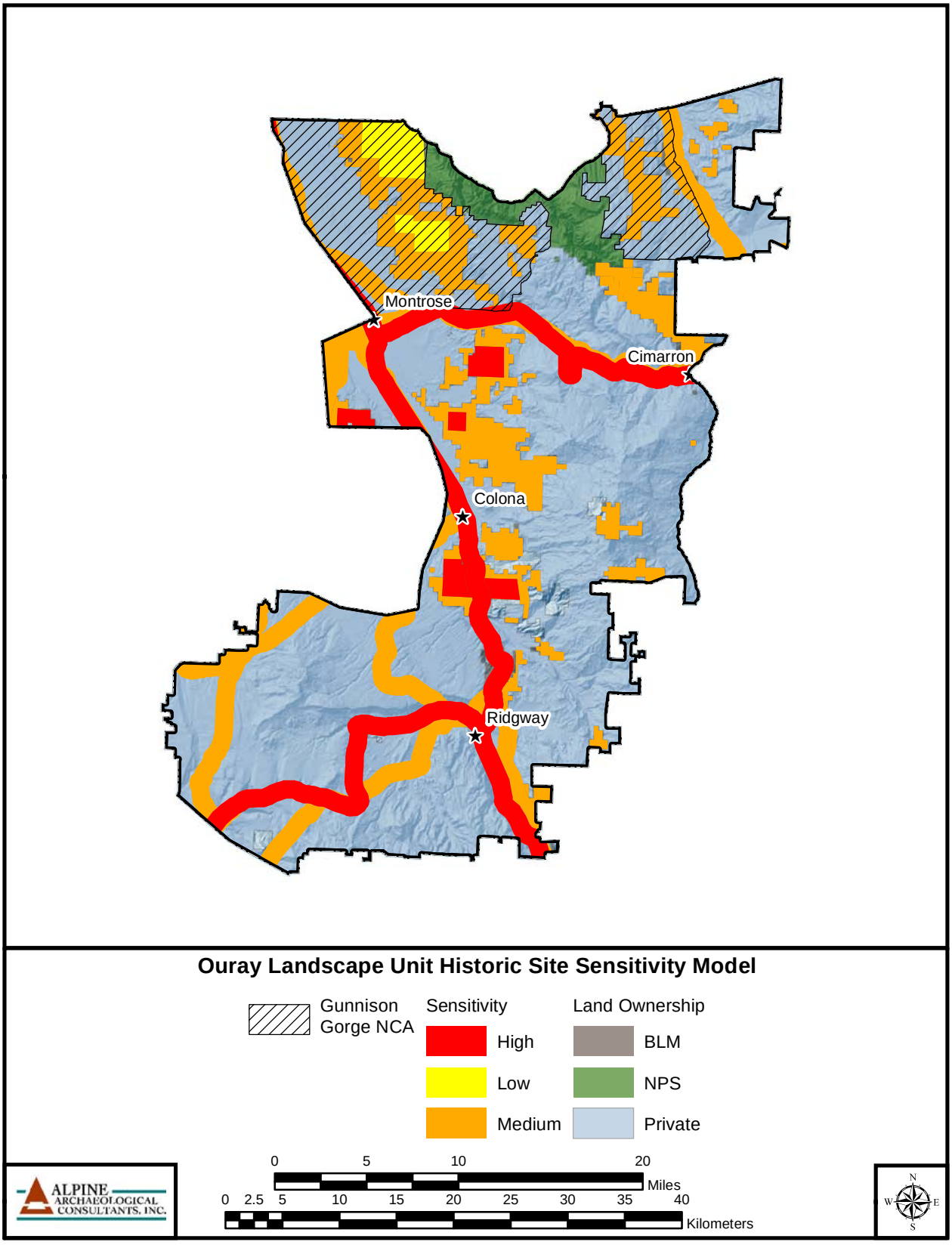


Figure 62. Sensitivity map for historic sites in the Ouray Area LU.

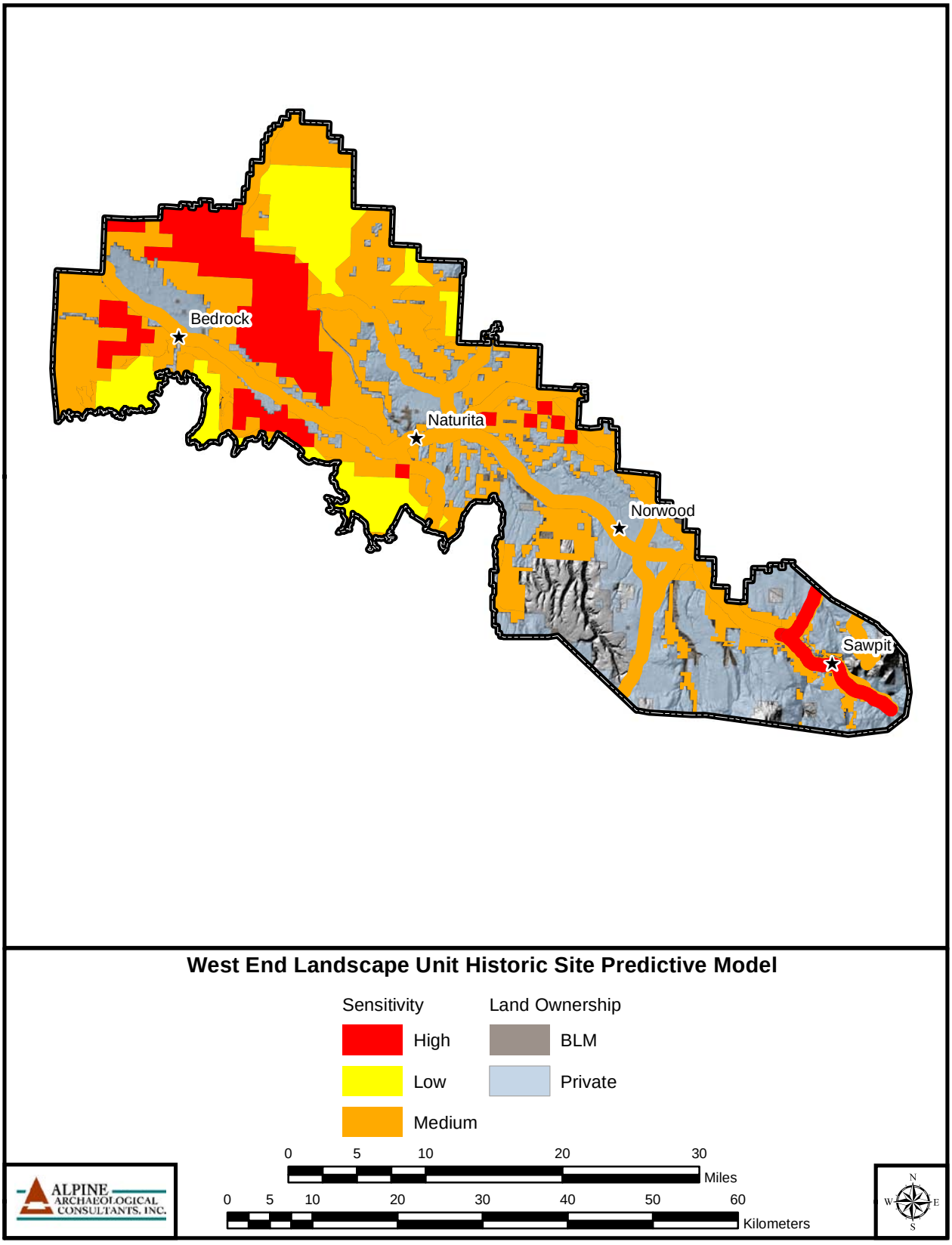


Figure 63. Sensitivity map for historic sites in the West End LU.

Areas of perhaps the highest potential for historic sites are lands subject to uranium mining. Definition of high site density areas as a result of uranium mining and exploration was assisted by a map titled *Uranium Occurrences of the Uravan Mineral Belt* (Nelson-Moore et al. 1978). This provided information about specific locations of unpatented mining claims on public lands in addition to that available from the Historical Index data and other more general maps. Large areas of canyons and mesas on the northeastern and southwestern sides of the Paradox Valley fall within the Uravan Mineral Belt where radium, vanadium, and uranium mining were concentrated, focusing on carnotite ore in lode deposits associated with the Salt Wash and Brushy Basin members of the Morrison Formation. Although early mining of these minerals was important, it was the dawn of the nuclear age following World War II that resulted in massive exploration and mining of uranium for weapons production and, later, domestic energy production. Uranium exploration, mining, and associated residential occupation has resulted in extremely high site densities in a 6 by 15-mile area on the northeastern side of the Paradox Valley and in a 7 by 7-mile area on the northern end of the southwestern side and a 3 by 6-mile area on the southern end of the southwestern side of the valley. Except for the earlier placer mining on the valley floors and the extensive copper mining operation of the Cashin Mine, uranium mining activity dominates the landscape and has probably obliterated or almost completely obscured any earlier evidence of use of the land from grazing. Reclamation of uranium mines in the region has been extensive and is ongoing. This has considerably altered the uranium mining landscape and diminished the number of resources that once existed. Reclamation has focused, by necessity, on the largest, most active operations, thereby skewing the remaining resources toward the smaller and less productive.

One-mile-wide railroad corridors are considered to be of high potential for historic sites because, in addition to the rail lines themselves, other site types may exist including construction camps, section houses, stations, maintenance facilities, and sidings. Stations and sidings were often the foci of activities associated with use of the surrounding area, such as logging and stock raising, and an increased concentration of historic sites in the surrounding areas may be expected. For instance, a siding that was used for loading lumber onto the railroad may have timber cutting and sawmill sites in the vicinity. Four railroad lines pass through the region. The first was the Denver & Rio Grand Railroad built from Gunnison through Montrose and Delta and continuing onward to Grand Junction in 1882. The second was the Ouray Branch of the Denver & Rio Grande Raioroad built south from Montrose in 1887. The third was the Rio Grande Southern Railroad built from Ridgway to Durango with a spur to Telluride in 1890 and 1891. The last was the North Fork Branch of the Denver & Rio Grande Railroad that was built northeast from Delta to the coal mines at and above Somerset in 1903.

The parcel of land that includes the East Portal is perhaps the most unusual parcel identified as having high potential. This designation is because of the considerable activity that was focused there during the construction of the Gunnison Tunnel.

Areas considered to have medium potential for historic sites are those expected to have one or fewer residential sites present from failed or relinquished land acquisition attempts (Homestead, Desert Land, or Reclamation Homestead entries). Medium potential areas may also have multiple short-term resource use or recreational sites present. One-mile-wide corridors centered on important historic trails or wagon roads have also been identified as being of medium potential because of the likelihood for sites to exist adjacent or near the travel routes that are associated with or were facilitated by the travel route. Medium-potential lands comprise 64.4 percent of BLM lands in the UFO. Multiple short-term resource use, travel, or recreational sites are expected on BLM lands adjacent to private lands or important transportation because easily accessed federal lands were likely used by local farmers and ranchers for such things as fencepost cutting, grazing of cattle, horses, and sheep, and hunting, and travelers may have camped or procured resources along trails and wagon roads.

Included in the areas identified as having a medium potential for historic sites are the string of continuous placer mining claims are along the San Miguel River from Pinon northwestward to its confluence with the Dolores River and downstream along the Dolores River as far as Roc Creek. Included in this area is the Hanging Flume, which transported water from the San Miguel River near Uravan for hydraulic mining near Mesa Creek along the Dolores River. More sporadic placer mining claims are situated along the San Miguel River from Lime, through Fall Creek and Placerville as far northwest as Clay Creek. These low-lying gravel deposits were difficult to work and their preservation along the valley floor is minimal because of the vagaries of erosion from seasonal runoff and because of the catastrophic flood event of 1909 when the dam at Trout Lake gave way sending a torrent down the San Miguel River. The level of impact that this major flood episode had on placer mining sites in the lower San Miguel River Canyon, from Pinon to the Dolores River, has not been quantified, but is likely to have destroyed evidence of the lower lying operations.

Upland areas along the San Miguel River from Vanadium (Newmire) to Placerville and particularly along Big Bear Creek south of Vanadium contain numerous mining claims and mines that produced roscoelite in lode deposits. Tramways from the mines to the valley floor and the newly reclaimed vanadium mill at Vanadium are visible reminders of this important industry. Although the number of claims is large, it is currently uncertain how many of the claims represent active mining locales; therefore, the areas containing these claims are considered to have moderate site potential.

Areas considered to have low potential for historic sites are those that 1) are more than 1 mile from private lands or important transportation corridors and 2) have only had failed attempts at acquisition through Stock-Raising Homestead Entries or no land acquisition attempts at all. These lands comprise 17.6 percent of BLM lands in the UFO. Because of the distance from private lands or important transportation corridors, short-term resource use or recreational sites are expected to be quite dispersed. In addition, the large acreages associated with Stock-Raising Homestead Entry attempts and the improbability that substantial residences were constructed as part of their attempted acquisition suggest that residential sites will be less than one per square mile.

Also considered of low potential for historic sites are areas leased for oil, gas, potassium, and sodium where not subsequent development seems to have taken place. Areas leased for oil and gas indicate widespread exploration activities beginning in the 1920s, in some cases. More extensive and widespread exploration began in the 1950s. Exploration has not resulted in any oil fields being developed in the UFO area. Evidence of historic oil and gas exploration may be found throughout the BLM lands in the UFO area that have been leased, but is expected to be so dispersed that the expectations for potential historic sites outlined above will not be affected. Potassium leasing has been somewhat more restricted in area and time span. A small amount of leasing took place between 1927 and 1929 and somewhat more took place in the late 1950s and early 1960s. As with oil and gas exploration, evidence for potassium leasing is expected to be scant and no known development locations are known. Leasing for sodium has taken place in only one locale and this has resulted in a salt evaporator being built in the Paradox Valley.

Model Validation

To check the reliability of the model, the density of historic sites within previously inventoried areas of each sensitivity level was calculated (Table 38). The high probability areas have a density of 3.5 sites per square mile, the medium probability areas have a density of 1.0 site per square mile, and the low probability areas have a density of 0.4 sites per square mile. The density of high sensitivity areas is skewed somewhat lower than is probably correct by how sites have been recorded in the area of intensive uranium mining in the Paradox Valley area. Nearly two-thirds of the sites in the uranium area are mines that have been recorded individually rather than having been recorded in block survey areas. These sites have not been included in the calculations of site

density for surveyed areas unless they fall into areas that were surveyed for linear or block inventories. This is because sites recorded individually cannot be accounted for randomly, as they would be using a block or linear survey approach. That is, a specifically recorded site will account for 100 percent of its inventoried area, so if included in the calculations, would result in a very large number of sites for the amount of acreage actually encompassed by the sites. By contrast, the linear and block surveys within the uranium area have largely taken place away from known mining locales, thereby actually skewing their results to areas of lower site density. In these cases, site densities are 1.0 site per square mile (50 sites in 50.9 square miles of inventoried areas), which is comparable to medium sensitivity areas elsewhere in the UFO. This also points to the highly concentrated nature of uranium mining sites interspersed by rugged terrain where reduced activities took place. As a result, it is not possible to accurately calculate the site density in uranium mining area at this time, though it can be subjectively categorized as being a high sensitivity area. When the uranium mining area is subtracted from the calculations of site density for high sensitivity areas elsewhere in the UFO, the number of sites per square mile is 4.4 sites per square mile. It appears that the model is viable, but will bear further validation as more sites are recorded. If more structural sites are found in low probability areas and approximate the density of structural sites in areas of moderate potential, then the validity of the medium and low areas as separate entities should be examined or consideration made of placing lands previously categorized as being of medium potential into the low potential category.

Table 38. Site Density Calculations for Various Sensitivity Areas on UFO Land.

Sensitivity Area	Acres Surveyed	Sq. Miles Surveyed	Sites Recorded	Sites per Sq. Mile
High[1]	122,294.7	191.1	668	3.5
High[2]	89,717.6	140.2	618	4.4
Medium	224,701.6	351.1	350	1.0
Low	54,560.6	85.3	37	0.4

[1] Entire UFO high sensitivity areas including the Paradox Valley uranium mining areas.
[2] UFO high sensitivity areas less the Paradox Valley uranium mining areas.

Research Context for the UFO: Data Needs and Potential Research Questions

Management of prehistoric and Historic Native American sites within the UFO should be guided by archaeological research goals and, of course, the needs of the public. Regarding the former, sites that have the potential to yield data that can be used to refine the models of past use of the study area or to address specific research questions should be regarded as significant resources, worthy of protection and scientific investigation. In general, sites that meet Criterion D for eligibility for listing on the National Register of Historic Places are those that have the potential for yielding important scientific information. The prehistoric and historic overviews of the cultural resources in the UFO that have been presented above, in conjunction with the research designs for prehistoric resources in the Northern Colorado River Basin (Reed and Metcalf 1999) and for historic resources in Colorado (Church et al. 2007), provide contexts for evaluations of site significance.

The issue of significance and its importance for evaluating the research value of cultural resource sites have been discussed in detail by Reed and Smith Gebauer (2004). They constructed a site significance matrix made up of key variables focusing on those aspects of prehistoric (and some types of historic) sites that indicate high research potential. Sites evaluated using their significance ranking scheme receive a score that can assist a site recorder in making the appropriate decision about NRHP eligibility (Reed and Smith Gebauer 2004). The method cannot entirely replace thoughtful consideration of all the factors that might make each site unique and important from a research perspective, but nonetheless is a useful tool. Researchers recording sites in the UFO are, therefore, encouraged to use the ranking scheme or to at least closely examine the variables used in the significance matrix so as to consider them when evaluating significance.

The sensitivity modeling conducted as part of this study will help to guide decisions about project development and resource management and, it is hoped, illuminate particular areas with the highest potential to yield the data necessary for the advancement of regional research objectives. Sensitivity maps for prehistoric and historic sites by landscape unit have been presented earlier in this chapter; additional sensitivity maps focusing on specific site types and time periods are presented below (Figure 64-Figure 73). The reader will notice that not all site types, temporal periods, or landscape units are covered by the maps presented below. That is because the datasets upon which the sensitivity models are based are not equally robust for each landscape unit. Consequently, the modeling for some site types or time periods within particular landscape units cannot be made to yield a result with adequate predictive power. Also, in some cases the modeling for a particular site type or time period yielded a result that closely mirrored that of all prehistoric sites, maps for which have already been presented. With this in mind, only those sensitivity maps that exhibit differences in patterning from the maps for all prehistoric sites combined are presented here. They are presented for the purpose of demonstrating that, in some cases, the sensitivity model reveals differential patterning for particular site types and periods that may suggest possible avenues of research or ways in which particular landscape units might be managed with respect to those site types or periods.

Data gaps and needs by research domain for each prehistoric period have been presented in Chapter 4. Chapter 5 has presented the historic context for the UFO study area and identified general data gaps and needs. The data gaps presented in Chapters 4 and 5 and the sensitivity models presented in this chapter can be used to generate research goals and questions for each time period. Major research objectives for the UFO area identified during this study are presented below; specific research questions or issues are bulleted.

Paleoindian Era

Sites or components with Paleoindian artifacts comprise only 1.4 percent of the sites in the UFO study area, with no Paleoindian sites excavated on BLM lands within the UFO. Paleoindian sites or components, then, comprise a major data gap. Early Paleoindian sites are especially rare. The most basic data needs for this era are simply more Paleoindian sites identified from survey data and the acquisition of chronometric dates from Paleoindian components. Data needs are reiterated and research goals and questions for this era are presented below.

Chronology

The primary data gap with respect to chronology is simply the lack of chronometric dates from Paleoindian components in all landscape units within the UFO study area. The lack of dates hinders understanding of the Paleoindian period in the study area in numerous ways, such as basic time-space issues, dating of projectile point types, and the timing of the transition between Paleoindian and Archaic lifeways.

- Basic chronological questions, such as when Paleoindians first immigrated into the UFO study area, need to be answered.
- Various Paleoindian projectile points occur in the study area that are roughly coeval. Chronometric dates are needed to determine whether the types represent contemporaneous or sequential use of the area by various Paleoindian groups.
- The time of transition between Paleoindian and Archaic lifeways needs to be established with local chronometric data.

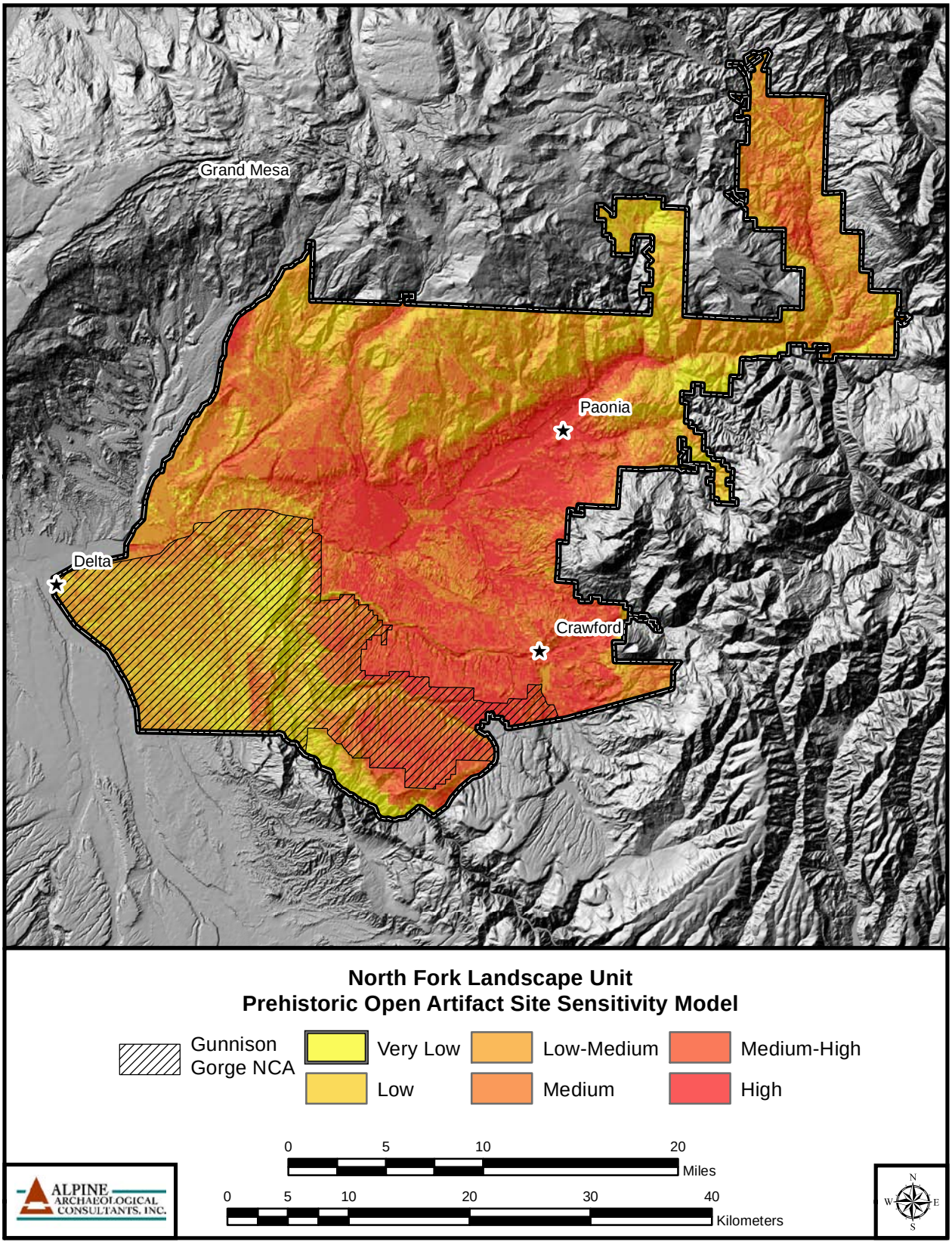


Figure 64. Sensitivity map for prehistoric open artifact sites on the North Fork LU.

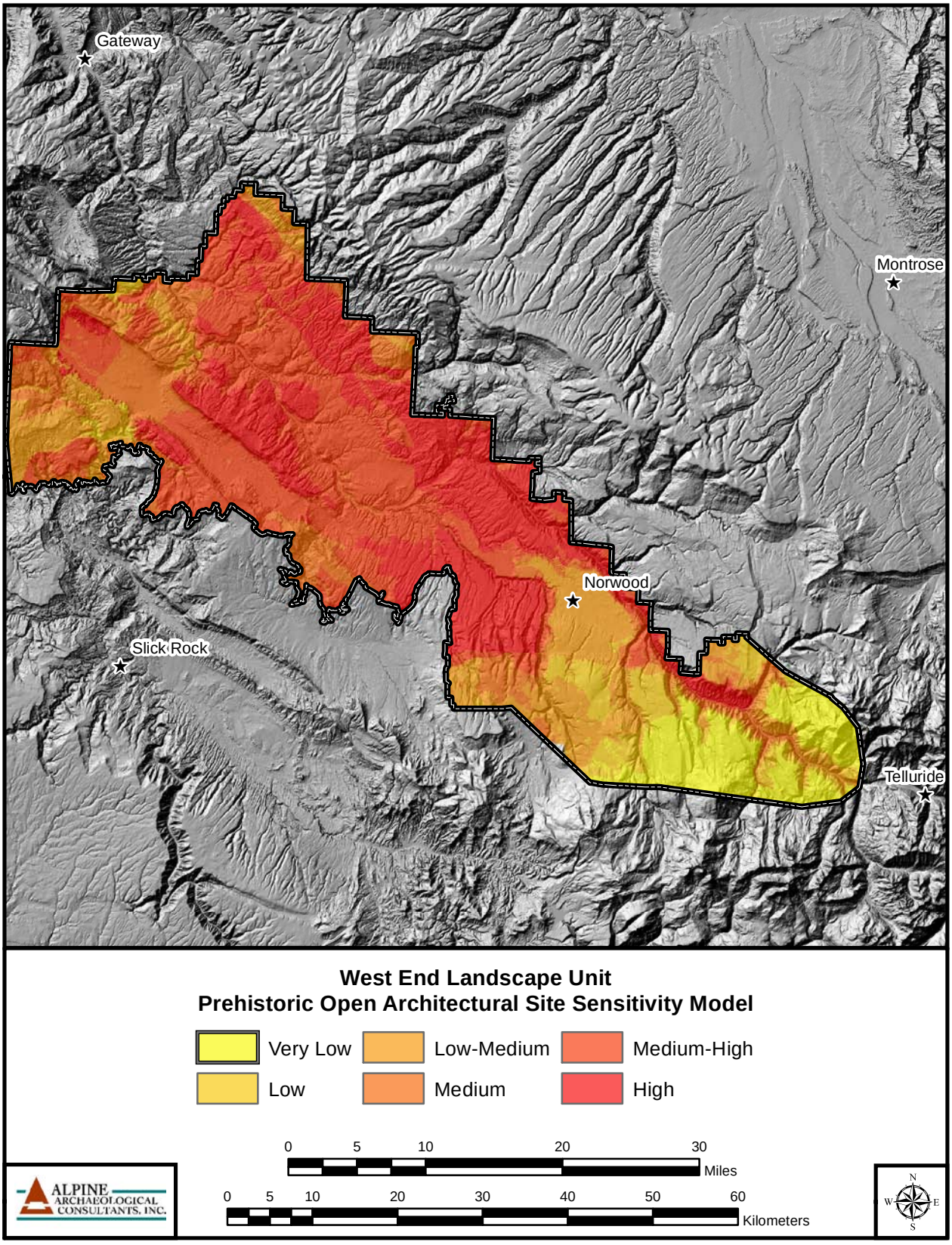


Figure 65. Sensitivity map for prehistoric open architectural sites on the West End LU.

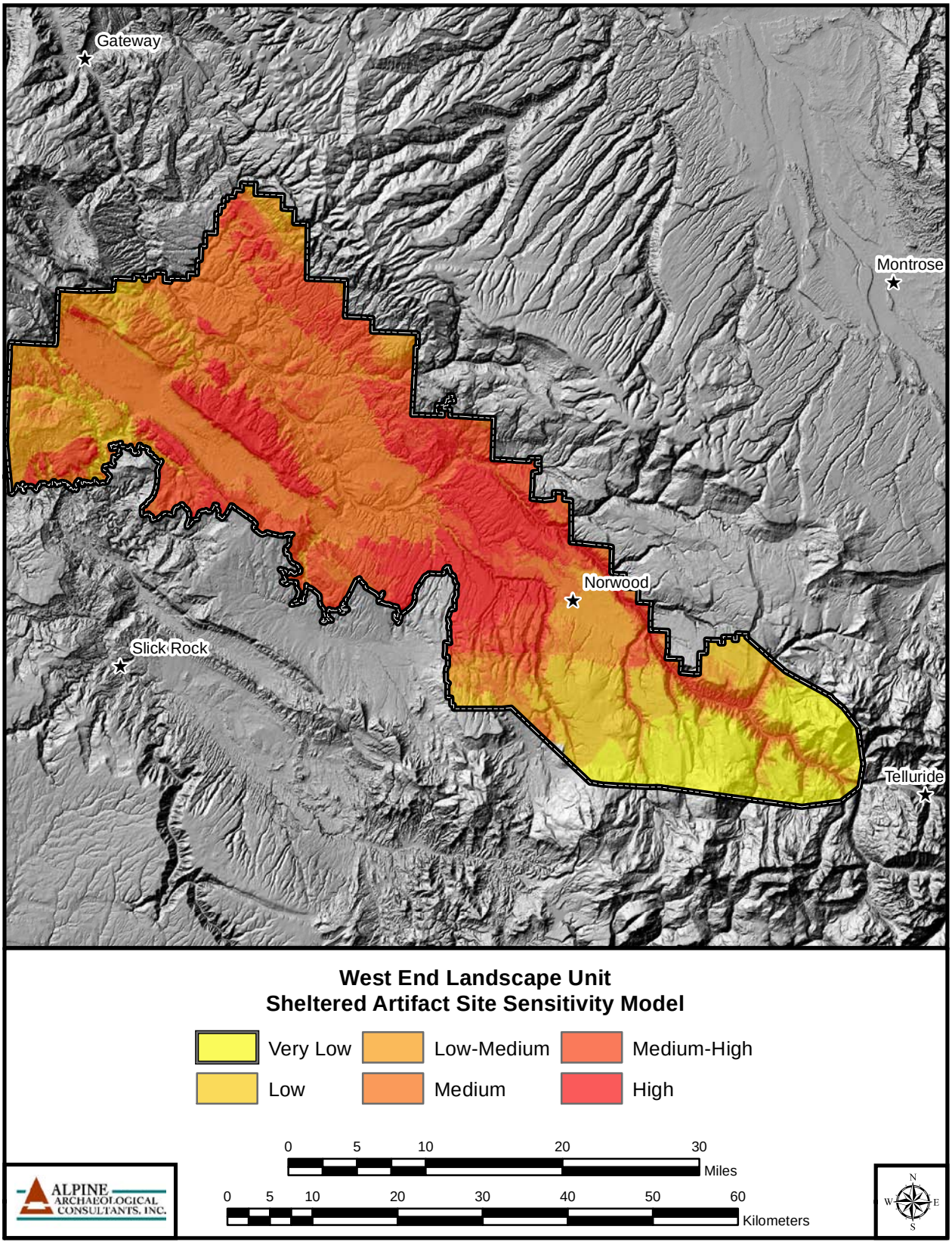


Figure 66. Sensitivity map for prehistoric sheltered artifact sites on the West End LU.

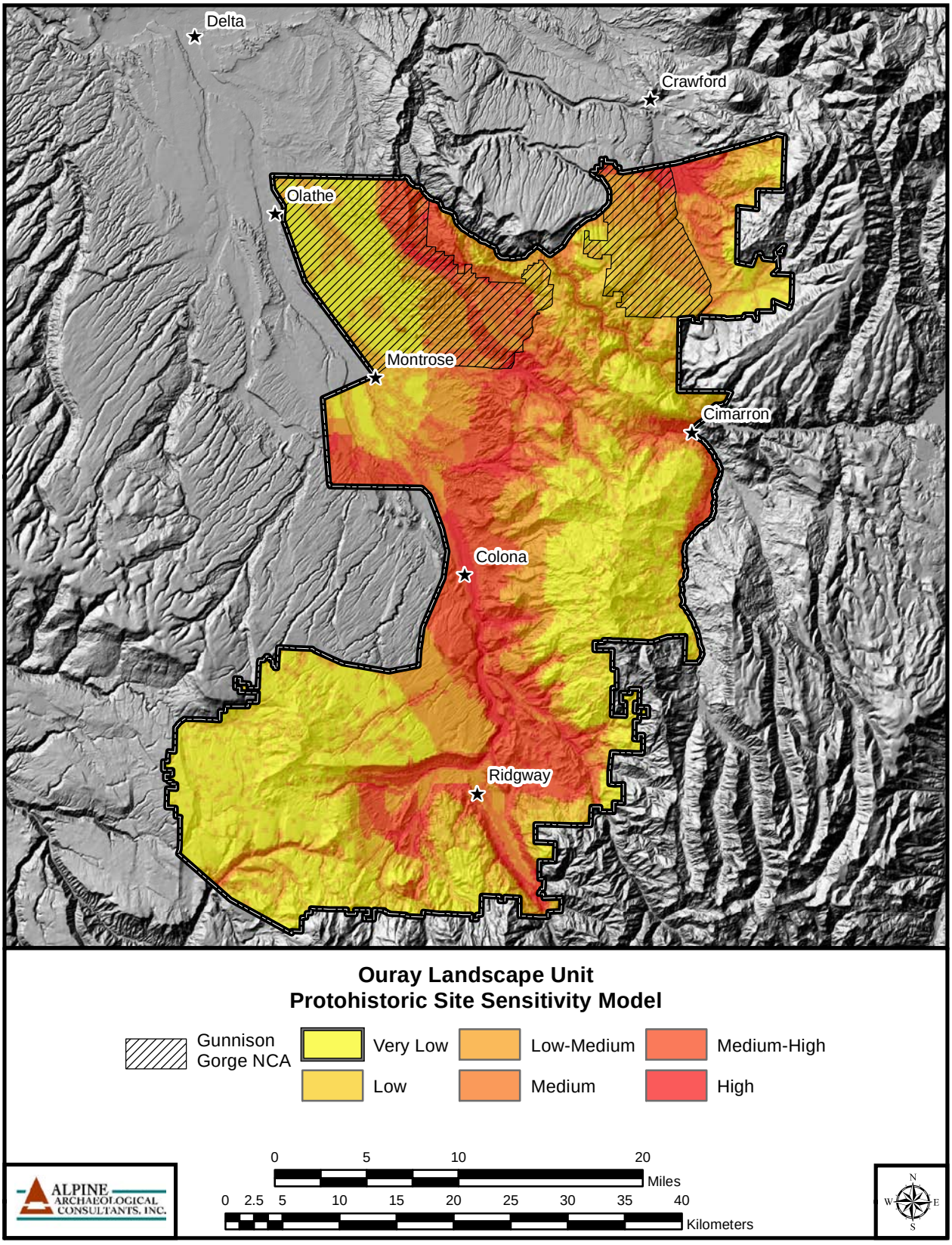


Figure 67. Sensitivity map for Protohistoric sites on the Ouray Area LU.

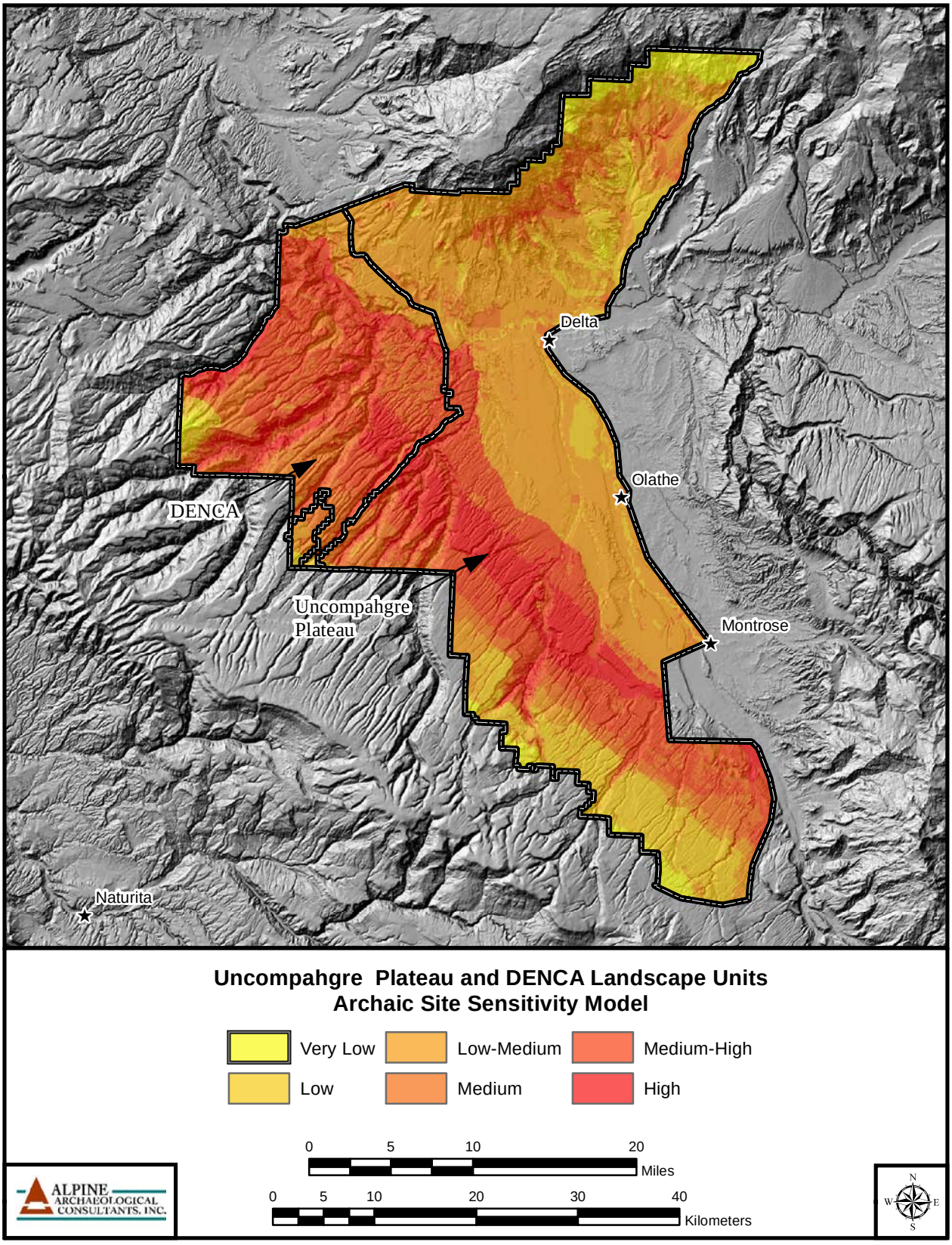


Figure 68. Sensitivity map for Archaic sites on the Uncompahgre Plateau LU.

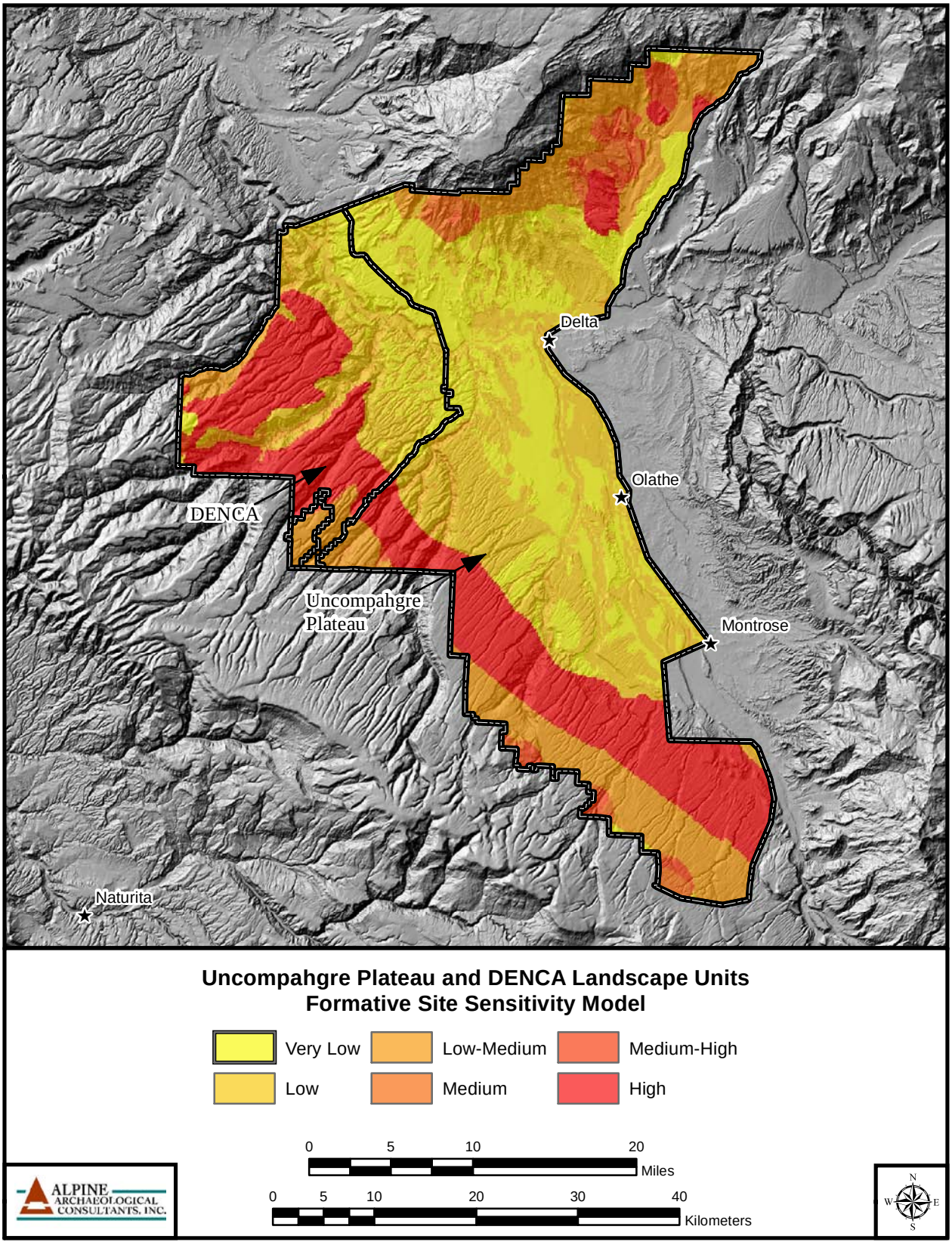


Figure 69. Sensitivity map for Formative sites on the Uncompahgre Plateau LU.

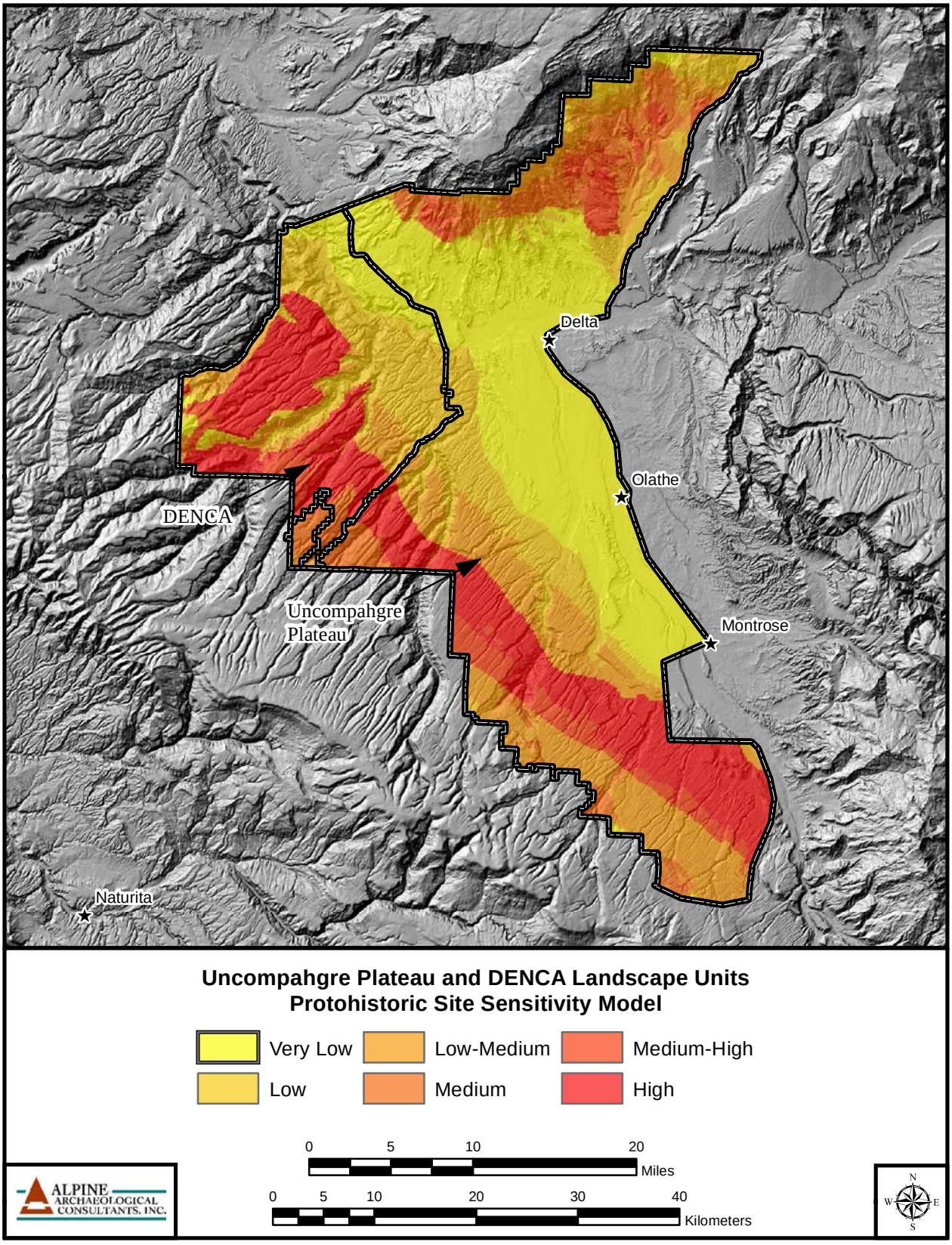


Figure 70. Sensitivity map for Protohistoric sites on the Uncompahgre Plateau LU.

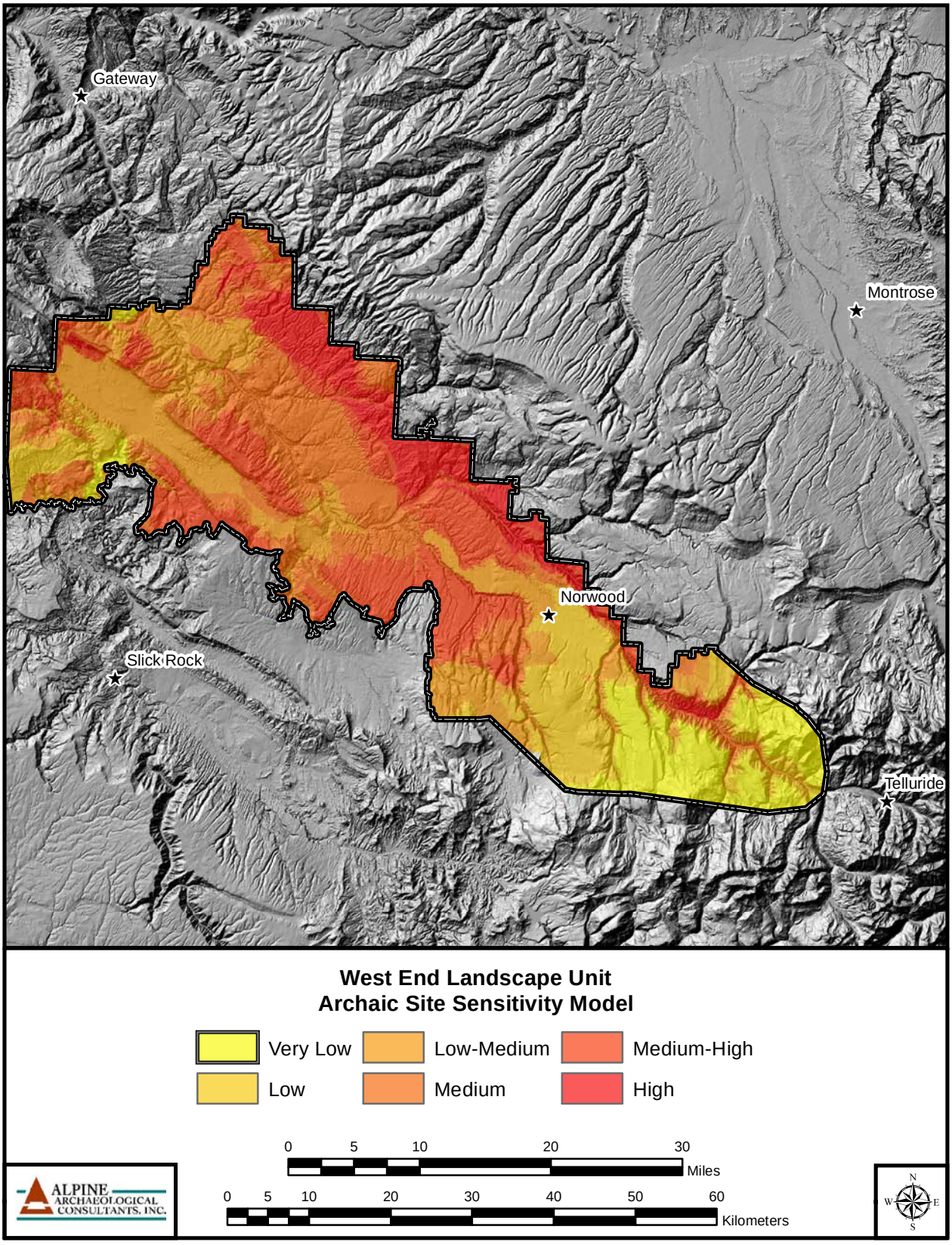


Figure 71. Sensitivity map for Archaic sites on the West End LU.

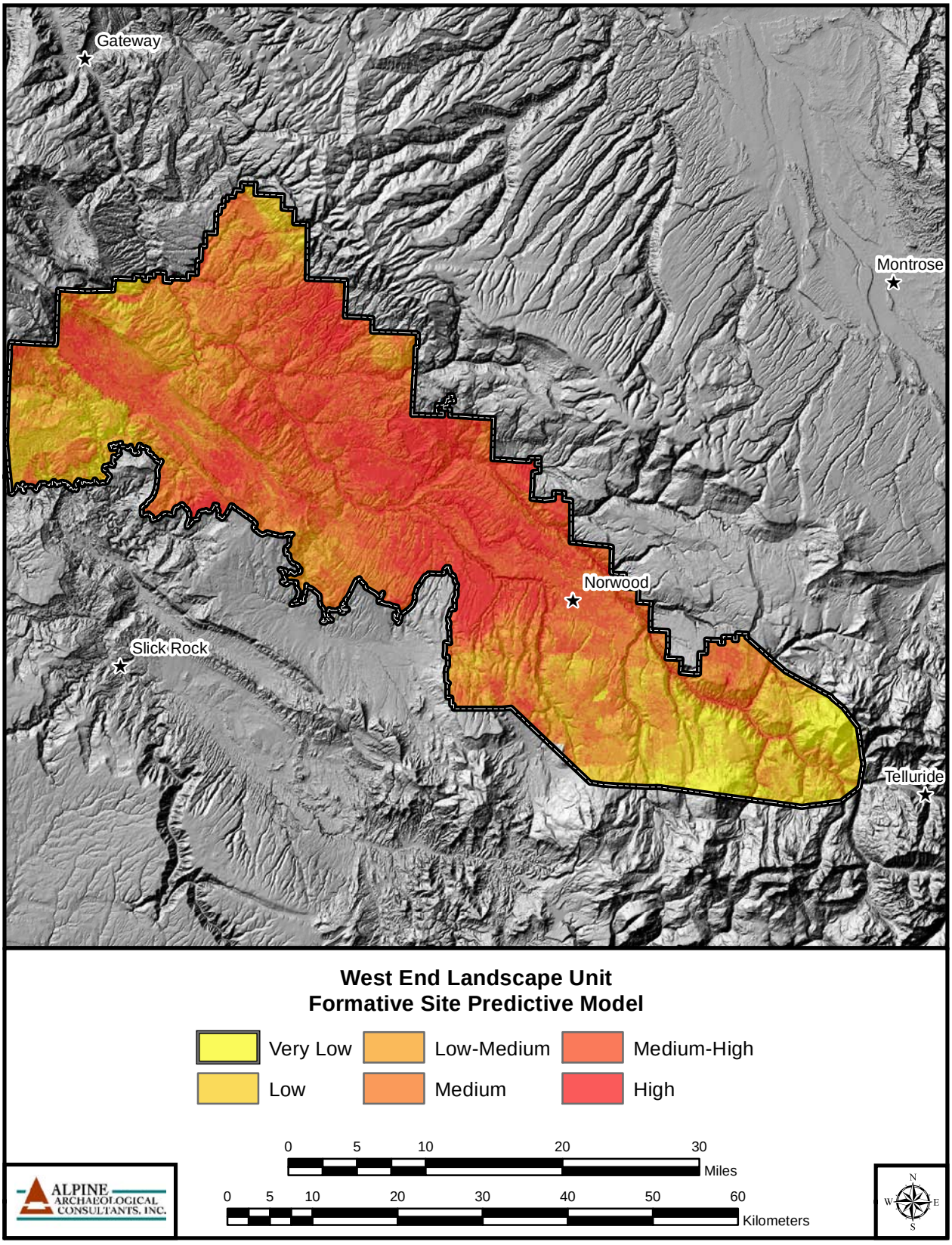


Figure 72. Sensitivity map for Formative sites on the West End LU.

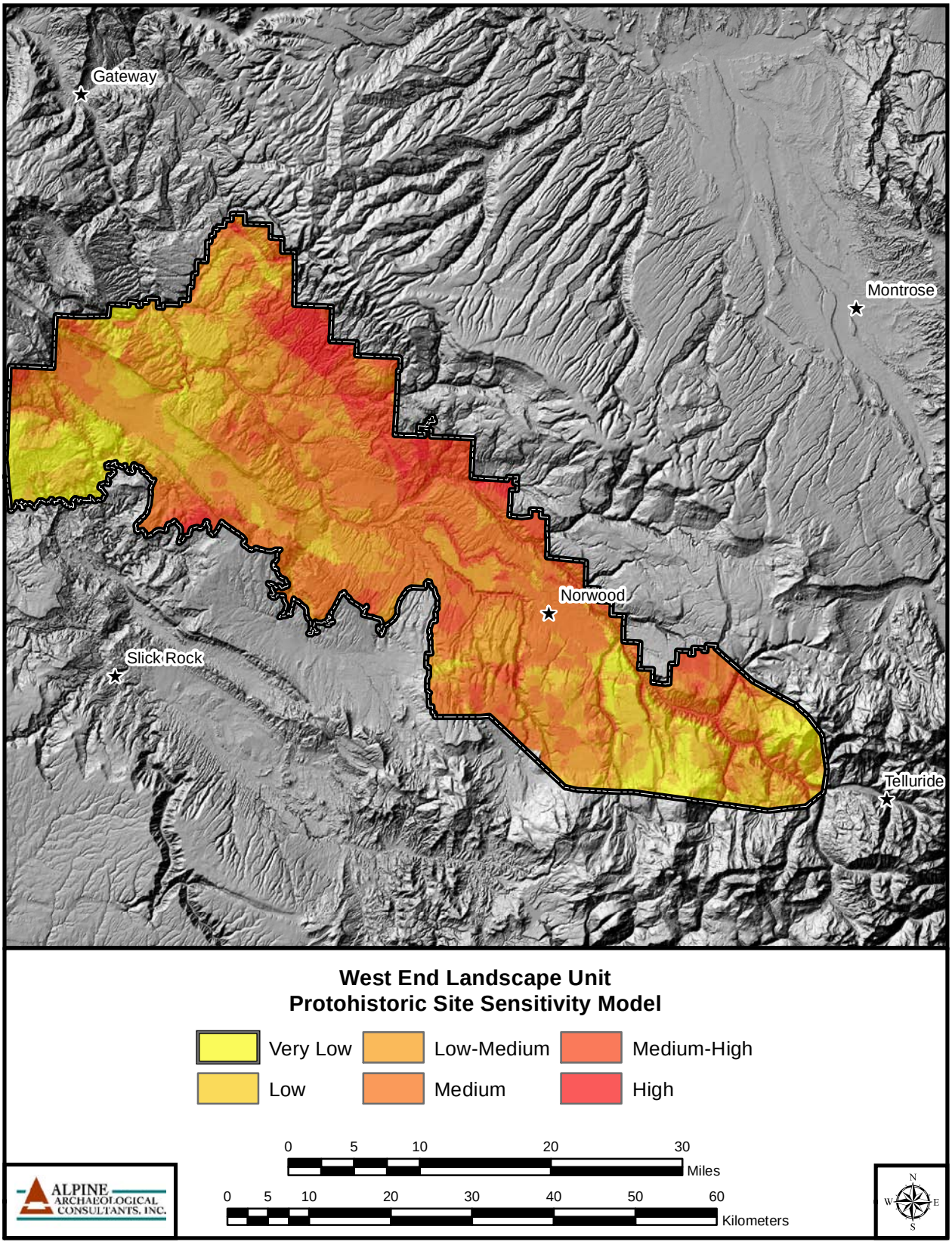


Figure 73. Sensitivity map for Protohistoric sites on the West End LU.

Archaeological Units

The refinement and deeper understanding of issues surrounding the definition of archaeological units for the Paleoindian era can be achieved primarily with additional survey-level and excavated data from Paleoindian components, pertaining to spatial distributions (settlement patterns), lithic technology, subsistence, and chronology.

- Pitblado (2003) suggests that various groups of Paleoindian peoples utilized western Colorado and made different projectile point types. Other interpretations may also be plausible, such as diachronic changes within a single group or use of different projectile point types for different hunting situations. A broad range of archaeological topics need to be examined to best devise the region's archaeological units.

- Unless archaeological units are to be used simply to describe differences in projectile point types, differences in subsistence, settlement patterns, and similar systems need to be examined to determine the degree of variation between late Paleoindian and early Archaic lifeways.

Settlement Patterns

Understanding Paleoindian settlement patterns is contingent upon understanding local paleoenvironments. Because few regional paleoenvironmental data are available for the era in question, additional research is sorely needed. As noted above, more inventory-level data pertaining to the spatial distributions of Paleoindian sites is equally important.

- According to Kelly and Todd (1988), the early Paleoindians practiced a highly mobile lifeway that was unparalleled during all subsequent periods. Their hypothesis is testable in the study area, if sites dating to that period can be identified and investigated.

Technology

Progress in the study of Paleoindian technologies in the UFO study area will only come with the investigation of intact, well-dated components yielding projectile points and other lithic artifacts, thermal features, and/or evidence for architecture that can be carefully studied from a technological perspective.

- All aspects of Paleoindian technology warrant further investigation, especially habitation structures and lithic artifacts other than projectile points.

- Discern whether different Paleoindian groups have different degrees of representation of "reliable" versus "maintainable" lithic technologies.

Subsistence

Direct subsistence data from excavated, well-dated, Paleoindian components are essentially nonexistent in all landscape units within the UFO study area. Faunal and macrofloral remains, pollen, starch residues, protein (blood) residues, and other types of direct subsistence data from Paleoindian sites are badly needed.

- The Foothill-Mountain tradition assumes that local Paleoindian groups employed a rather broad-spectrum subsistence focus when compared to Plains-centered groups, but direct subsistence data are sparse. To investigate this problem, additional floral and faunal food resources from Paleoindian contexts need to be identified.

- Test the hypothesis that early Paleoindian peoples focused on higher-ranked food resources than late Paleoindian peoples.

Archaic Era

Sites or components with evidence of Archaic occupations comprise 14.8 percent of the sites in the study area, with several sites containing Archaic components excavated on BLM lands within the UFO. Thus, although considerably more Archaic sites have been identified in the UFO study area than Paleoindian sites, the archaeological database for this 6,000-year-long era is too small to permit development of sophisticated lifeway models. Additional excavation data are needed for all periods within the Archaic era.

Chronology

- Additional chronometric dates are needed from all periods of the Archaic to better discern diachronic demographic trends, but especially for the Settled period.

- Local projectile point sequences for all periods of the Archaic are in need of further refinement; points from excavated, chronometrically dated Archaic components will advance this research goal.

Archaeological Units

- The utility of the periods for the Archaic era (Pioneer, Settled, Transitional, and Terminal) defined by Reed and Metcalf (1999) should continue to be evaluated. The periods were developed primarily from radiocarbon data from excavated sites in northwestern Colorado and Reed believes that they may not accurately characterize the Archaic era of west-central Colorado (Alan Reed, personal communication to Rand Greubel, 2010).

Settlement Patterns

- The "up-down" settlement model requires verification and refinement with archaeological data. The Archaic era is characterized by seasonal mobility; to fully understand the settlement patterns on the Uncompahgre Plateau it is necessary to locate and record information about all site types within the seasonal round.

- Data necessary for discerning shifts in patterns of residential mobility are also needed. Inventory-level data can contribute to this research issue to a certain extent, but a greater quantity of excavated Archaic components will be necessary to more fully delineate these patterns.

- Most of the excavated and dated sites in the UFO fall roughly between 5,000 and 7,000 ft (1,524-2,134 m) in elevation. According to Reed and Smith Gebauer (2004), survey data on the Uncompahgre Plateau includes a considerable number of Archaic sites that are above 7,000 ft (2,134 m), but few have been excavated or chronometrically dated. Data from sites located at higher elevations of the UFO and adjoining areas are critical for understanding Archaic use of highland settings.

Technology

More data are needed on all aspects of Archaic technology in the study area, including architecture, pit and thermal features, and lithic industries. Moreover, a better understanding of the locations and nature of lithic raw material sources within the study area and in adjoining regions is needed. Data on regional lithic sources will be valuable not only for Archaic sites, but for prehistoric sites of all time periods in the study area.

- Variation in Archaic architecture and pit and thermal features needs further exploration.

- Additional study of Archaic lithic reduction strategies is needed, especially in the context of anticipated mobility and of distance to raw material sources.

Subsistence

Because of the dearth of excavated Archaic sites in the region and because biological materials at older sites are less often preserved, our understanding of Archaic subsistence practices is incomplete. Data relevant to subsistence changes during the 6,000-year span of the Archaic can only be obtained through additional data recovery efforts. Such data will consist primarily of faunal and macrofloral remains, but may also include pollen, starch, lipid residues, blood residues, and other residues that might be identified through FTIR analyses, which can identify the absorbance signature of organic compounds that can then be compared to the spectra from known organic materials (e.g., food remains).

- The apparent Archaic subsistence focus on highly ranked faunal and floral food resources merits further examination, which might also illuminate small-scale variation in response to environmental and cultural challenges.

Paleoenvironment

No detailed and comprehensive paleoenvironmental model, derived solely from local data, has ever been developed, though recent work by Emslie and his colleagues, not yet published, is an important step in that direction. Paleoenvironmental studies are needed for all archaeological units.

- Some variation in the archaeological record, particularly with respect to settlement and subsistence, can probably be explained by fluctuations in the environment.

Formative Era

Because most Formative-era structural sites were dug decades ago to standards not matching those of the present day, the quality of the archaeological database for the Formative is uneven. Additional excavation conforming to modern standards at structural sites dating to the Formative era will be necessary if we are to understand this period of time more fully. Non-structural Formative sites are, of course, important as well. Such sites are often difficult to recognize from inventory data.

Chronology

Chronometric data are needed to address a variety of research questions. Several of the most important are listed below.

- Current evidence suggests that horticulture was practiced in the study area in two periods, with an intervening period without horticulture. Additional chronometric data are needed to test this model.

- Chronometric data are needed to better define the appearance and the disappearance of cultigens in the study area.

- Radiocarbon and ceramic data from recent studies have persuaded Reed and his colleagues to reassess and refine the temporal duration of the Gateway tradition from the original estimate of 400 B.C. to A.D. 1200 (Reed 1997) to a much tighter likely time span—A.D. 900 to 1150 (Reed 2005), A.D. 950 to 1050 (Greubel et al. 2009), or even as brief a period as A.D.

980 to 1040 (Reed and Emslie 2008:69). Additional chronometric data from excavated contexts will be necessary to resolve this issue.

- Related to the preceding issue, Greubel et al. (2006; 2009) have hypothesized that the Weimer Ranch sites and possibly other Gateway tradition sites were settled by Ancestral Puebloan immigrants from the Mesa Verde (i.e., Northern San Juan) region to the south. The timing of this event, if it occurred, is not well understood. Additional ceramic and chronometric data will be necessary to shed light on this issue.

Archaeological Units

The acquisition of data relevant to the tenability of existing taxonomic units for the Formative era, or the formulation of new ones, should be an important goal for future researchers in the UFO study area. The research questions below are most applicable to the West End LU.

- Investigation into the nature of the earliest occupation of the study area by maize farming groups, and the identity of those peoples, should be a high research priority. Are these groups best characterized as Basketmaker II, as originally suggested by C.T. Hurst in the 1940s (e.g., 1942; 1945; 1948a; 1949) and recently asserted by Charles and Cole (2006)?

- The utility of the Gateway and Aspen traditions warrant continued examination, especially in light of recent discoveries of corn at sites that outwardly appear similar to forager sites.

- If local horticultural and foraging groups are regarded as distinct, the nature of their interaction across the study area needs to be illuminated. The possibility that immigrant farmers and local foragers interacted at locales such as the Weimer Ranch site complex should be investigated through comparisons of dated sites, structures, and artifact assemblages from this period.

- Reasons why the Formative-era lifeway terminated in the region is a mystery, though evidence elsewhere in the Southwest suggests that the reasons were complex.

Settlement Patterns

Much more inventory and excavated data are needed to allow the refinement of models of Formative settlement systems in the study area and to resolve questions revolving around mobility, length of occupation, seasonality, and the use of different elevation zones.

- Currently, settlement models that reflect integration of corn horticulture are probably too simplistic and are not based on empirical regional data. Problem-oriented research is needed to refine the settlement models of regional farmers.

- The large majority of Gateway-tradition sites occur in the West End LU, in western Montrose and San Miguel counties, rather than in the North Fork, Uncompahgre Plateau, and Ouray area LUs (i.e., areas within the Uncompahgre and Gunnison River drainages). Although environmental factors may be involved, they are poorly understood.

- Some structural Gateway-tradition sites, however, are located in the Uncompahgre Plateau LU or on USDA Forest Service or private lands nearby (Huscher and Huscher 1943). Most seem to be in the drainages of Escalante Creek or its tributaries or in areas not too far distant from Escalante Canyon. Why were these areas occupied by Gateway peoples whereas other parts of the eastern side of the Uncompahgre Plateau, it seems, not occupied?

- The relationship of anticipated/actual mobility patterns to elevation and environmental setting needs examination.

- As with all archaeological units, understanding the season of site occupation is important for more fully understanding settlement patterns.

- The sensitivity modeling for the Archaic and Formative eras in the Uncompahgre Plateau and Dominguez-Escalante LUs suggests differences in the settlement patterns between these two periods, with the Formative occupation predicted to encompass a narrow band across the eastern slope of the Uncompahgre Plateau more intensively, among other apparent differences (Figure 68 and Figure 69). The different patterning suggests research directions for Archaic and Formative settlement pattern studies.

Technology

Sites with residential architecture that date to the Formative era are particularly important for understanding Formative architectural technology. Lithic assemblages from excavated, well-dated contexts are needed to discern lithic reduction strategies for different periods, cultural units, and site types within the Formative era.

- Variation in Formative-era architecture needs to be examined. This research issue pertains primarily to the West End where such sites are most numerous, but low numbers of structural sites are known to exist on the eastern side of the Uncompahgre Plateau (Huscher and Huscher 1943). Such sites are extremely important. Locating and protecting them should be a high priority and their investigation an important goal.

- Pithouses are known from the Paradox Valley (McMahon 1997, 2000; Woodbury and Woodbury 1932) but nowhere else in the Gateway culture area, unless some of the structures investigated by Metropolitan State College at the Weimer Ranch sites, which seem to have been excavated into the prehistoric ground surface anywhere from 30-50 cm, can be considered pithouses. Kivas have not been identified in the study area. There is at least one large depression near the Last Hill site (5MN518) at Weimer Ranch that may be some type of pithouse. Others may exist in the study area as well, and should be tested to determine if they are truly pit structures and how similar they are to Anasazi pithouses or kivas.

- The introduction of the bow and arrow into the Intermountain West is thought to have taken place sometime between approximately 2000 and 1500 B.P. (Buckles 1971; Holmer 1986; Justice 2002b). The date most often cited is A.D. 300, which is roughly when Rosegate projectile points appear in the archaeological record (Holmer 1986:107). There is limited evidence from west-central Colorado that this technology may have been introduced somewhat earlier, but good data pertaining to this question are lacking. Rosegate points from securely dated, unmixed Terminal Archaic or early Formative components are needed.

- It is possible that Gateway tradition sites employed a different lithic reduction technology than evident at contemporaneous forager sites, if such strategies reflect relative mobility, differing subsistence practices, or cultural differences.

- Gateway tradition peoples have been characterized as reliant on maize, at least to a degree (Greubel et al. 2006; Reed 1997). In what ways did their milling technology differ from that of contemporaneous foraging groups?

- A recent analysis of the ceramics from the Weimer Ranch sites (Greubel et al. 2006; Reed 2006) indicates that most are imported Northern San Juan wares, but a fair number are locally manufactured in the style of contemporaneous Pueblo II pottery. The existence of this

local ceramic tradition was not previously known. All aspects of this local ceramic tradition are extremely important for future research.

- Projectile points manufactured by Gateway tradition peoples seem to have close affinities with those made by contemporaneous Pueblo II Anasazi groups to the south (Greubel et al. 2006). This observation, however, is based on visual assessments only and has not been rigorously tested; a study of the projectile points of the two areas might allow additional insights into relationships between Gateway-tradition peoples and the Pueblo II Anasazi. A methodology might be employed similar to that of a recent study comparing the basal shapes of arrow points from the Mesa Verde and Northern Rio Grande regions (DeFrank et al. 2010).

Subsistence

Direct subsistence data in the form of macrobotanical and faunal remains, pollen, starch, blood residue, lipids, and residues suitable for FTIR analyses are needed from Formative sites. Sites with the potential for yielding evidence of cultigens are particularly important.

- Recent models that suggest that the Formative-era groups of the study area exploited a wider range of food resources than Archaic or Protohistoric groups should be further examined.

- The relative importance of corn in Formative subsistence systems could be highly variable, according to optimal foraging theory and ethnographic evidence. Analysis of this topic is important. An associated research concern would be to identify which of the four models of traditional horticulture described by Barlow (2002) might be represented in the study area.

- If there was a hiatus in corn use during the Formative era, then the reasons why farming was temporarily abandoned in the region needs to be identified.

- The faunal data from the Weimer Ranch sites (Greubel et al. 2006; Lubinski 2005) suggest that the occupants placed a heavy emphasis on big game hunting. More research is needed to determine if all Gateway tradition groups were equally invested in hunting.

Protohistoric Era

Sites or components identified as Protohistoric represent only 6.3 percent of all the known prehistoric sites in the UFO study area. Moreover, few of these have been excavated. Only 28 Historic Native American sites or components have been identified. Additional inventory and excavation will be necessary to increase the sample of Protohistoric sites in the study area. As with any archaeological unit, important Protohistoric-era sites will consist of those retaining contextual integrity, so that the distribution of archaeological remains can provide insight into the distribution of past human activities.

Chronology

Accuracy in chronometric dating is especially important for Protohistoric-era components. Special care should be taken to employ the most accurate dating methods possible, focusing on AMS dating of annual and short-lived plants, thermoluminescence dating of ceramics, and dendrochronological dating of culturally stripped trees. Cross-dating of Euroamerican artifacts can also provide excellent dates for historic-period occupations.

- The timing of the Numic expansion into the study area is an important research question. In particular, thermoluminescence dating of Protohistoric pottery has the potential to accurately date the appearance of locally made pottery in the study area and shed light on this issue.

- The timing of the introduction of the horse into the region, and its incorporation into Ute lifeways, is poorly understood. Archaeological data are needed that might allow the dating of this important event.

- Research is needed to determine whether there was a hiatus in occupation or population decline between approximately A.D. 1650 and 1750 that might represent the effects of an epidemic of European-derived disease upon the native populations.

Archaeological Units

Most archaeologists working in west-central Colorado use the synthetic unit "Protohistoric era" as defined by Reed and Metcalf (1999) to refer to the period of time extending from the end of the Formative occupation of the region to the beginning of the Native American reservation period. Most also use Reed and Metcalf's (1999) two-phase sequence comprising the Canalla and Antero phases. Baker et al. (2007) have criticized both the archaeological unit and the phase sequence.

- The concept of the "Protohistoric era" as a temporal referent encompassing the post-Formative late prehistoric and historic periods should be reexamined.

- The Canalla and Antero phases merit further examination for usefulness. The introduction of the horse and its acquisition and general use by the Ute people marks the transition between the two proposed phases. The timing of this, however, is poorly understood. Research should focus on determining when the horse came into general use by the Utes and identifying other hypothesized differences between the two phases that might be manifested in the archaeological record.

Settlement Patterns

Additional data—both inventory-level and from excavated contexts—are needed to test current models of mobility and settlement systems for the Protohistoric era, or to construct new models. It will also be important to discern season of occupation for all future excavated sites.

- Mobility modeling currently suggests that Protohistoric groups were as residentially mobile as Archaic groups. This interpretation may change if Archaic pit structures similar to Yarmony House (Metcalf and Black 1991) or Archaic basin houses are eventually identified in the study area, indicating less residential mobility for Archaic groups. It seems probable, therefore, that Protohistoric residential mobility was higher than for all other archaeological groups, excepting the Paleoindian.

- The apparent absence of habitation structures more substantial than wickiups suggests that Protohistoric groups may have as mobile in the cold months as they were during the warm months. High residential mobility during the winter months might represent a different settlement pattern than that practiced by preceding archaeological units. Alternatively, it is possible that Utes simply used less substantial types of winter habitation structures than earlier groups. Additional efforts are needed to discern season of occupation for all excavated sites.

- How did the equestrian lifestyle alter Ute settlement patterns?

Technology

It is important to identify habitation structures (i.e., wickiups) dating to this era and collect data through surface recording and excavation pertaining to their methods of construction, environmental settings, dates of occupation, and associated assemblages of lithic artifacts and subsistence remains. More Protohistoric ceramics are needed for study from both surface and excavated contexts. More assemblages of both ground and flaked lithic artifacts are needed for careful study from Protohistoric sites in the UFO study area. Sites dating to the early historic period with both trade goods and lithic artifacts, though some are known, are a significant data gap.

- Variation in wickiups needs further illumination. Analysis is also needed to determine the function of wickiups; for example, some might represent family residences whereas others might represent menstrual huts.

- The variation in Protohistoric ceramics needs further examination. It is possible that not all ceramics in the study area were manufactured by the Utes.

- Local Protohistoric groups appear to have made less use of ground stone than groups of other archaeological units. Ground stone analyses are needed to confirm and explain this trend.

- More flaked lithic assemblages from excavated Protohistoric contexts in the study area need to be dated and analyzed. More information about Ute lithic reduction strategies from different periods of the Protohistoric era is needed. Such data should help to elucidate questions about Ute residential and logistical mobility.

- The effects of Euroamerican trade goods on indigenous material culture are poorly understood.

Subsistence

Current models suggest that local Protohistoric groups focused more on highly ranked food resources (i.e., big game) than did Formative groups. Additional direct subsistence data and careful analyses are needed to provide a foundation for constructing better models of Protohistoric subsistence strategies.

- Additional studies are needed to confirm whether Protohistoric groups more intensively processed animal bone than groups of other archaeological units. It has also been hypothesized (Greubel 2002) that Ute peoples were able to process bone more efficiently through the use of ceramic pots, an assertion that requires additional study.

- According to ethnographic data compiled by Anne Smith, Ute peoples collected and consumed a wide variety of plant foods (Smith 1974). Yet, analysis of the regional archaeological database suggests that Protohistoric Numic groups relied much less on floral resources than preceding groups (Greubel 2002). More research is needed to confirm and explain this pattern.

Historic Euroamerican Period

Additional research needs for important site types or topics in Euroamerican historical archaeology in the UFO study have been identified in Chapter 5. These are listed below. As discussed in Chapter 5, specific research questions for historic Euroamerican sites have not been formulated because the variability of such sites and the multitude of research orientations employed by historical archaeologists would render this a very subjective exercise.

- Additional documentation of placer mining is needed in the UFO area.

- Few sites related to coal mining have been investigated archaeologically; this would be especially important in the North Fork LU. It is expected that small coal mines exist on UFO lands, but to date none have been documented.

- Farming and ranching has been documented mostly through reminiscences and anecdotal accounts rather than through actual archaeological and historical research. The only homesteads that have been investigated archaeologically were as a result of the Dallas Creek Project and this was not very comprehensive. Farming sites of importance would include those that relate to expansion into marginal lands by settlers who ultimately failed and those made possible by the Uncompahgre Project. Other important sites would include those that can be tied to early cattle companies.

- Considerable documentation of major local irrigation projects, such as the Uncompahgre Project, has taken place, but little is known about the initial irrigation works and how they were actually incorporated into the larger system. Other irrigation systems, such as those in the North Fork Valley and in the West End, are virtually undocumented.

- A few sites related to the lumber industry are known on National Forest lands, but no sawmills or lumber loading sites have been documented elsewhere in the region.

- Little information exists for the smaller towns and settlements in the region. This is particularly the case for defunct settlements from the early settlement era and lesser railroad stations.

- Sites relating to encroachment on the Ute reservation from Ouray area and onto grazing land in the Paradox and Norwood areas between 1875 and 1881 are important.

- Railroad construction camps, maintenance facilities such as section houses, and sidings where lumber, livestock, agricultural produce, and other products were loaded away from the major towns are virtually undocumented in the UFO area, though many exist and probably have some physical integrity. Some of these may also provide important information about ethnic groups.

- Radium/vanadium/uranium sites from all periods with good integrity, but particularly the early exploration periods, are important.

Threats to Cultural Resources

Cultural resources are the fragile and nonrenewable physical remains of prehistoric and historic human activity, occupation, or endeavor that are of importance in human history. Cultural resources comprise the physical remains themselves, the areas where important human events occurred (even if evidence of the event no longer remains) and the environment surrounding the actual resource. Cultural resources are not being continually created, other than in the case of traditional cultural properties. Impacts to cultural resources that are caused directly or indirectly by project activities are, therefore, considered adverse and permanent. Common threats to cultural resources in west-central Colorado are listed below.

Energy Development

The recent boom in energy development projects (e.g., oil and gas, wind farms, transmission lines, etc.), though not as numerous in the UFO as in other areas of the west, has impacted cultural resources in various ways. Well pads (ca. 4 acres each) and staging areas (size varies) linked with oil and gas field developments are associated with surface disturbance over large acres as individual drill-heads continue to be preferred over directional-drilling (Kreckel 2007). Linear construction

projects (e.g., access roads, pipelines, transmission lines) are more likely to impact a wider variety of sites as disturbances are distributed across multiple ecozones and cultural use areas. In all of its varied forms, energy development often causes indirect impacts to cultural resources by improving access to sites and increasing location specific erosional processes. Improved access to sites in remote areas tends to increase site visitation and impacts from surface artifact collection and looting (cf Nickens et al. 1981).

Wildfires

Wildfires are natural phenomenons that are likely to have impacted most prehistoric sites. Although considered "natural," the direct and indirect effects of wildfires are, nonetheless, potentially detrimental to sites (Beunger 2003; Lentz et al. 1996; Ryan and Jones 2003). Fires may alter surface artifact distributions (especially at sites with wooden artifacts or features), complicate radiocarbon dating and obsidian hydration studies (Smith 1999), and cause spalling of rock faces that leads to the destruction of rock art (Noxon and Marcus 1983). Some site types (e.g., wickiups, historic wooden structures, etc.) and some artifacts (e.g., sandals, arrows, etc.) may be entirely destroyed by fire. Fire suppression efforts, especially the mechanized construction of fire lines, can disturb swaths of sediments through sites. The indirect detrimental effect of increased erosion that follows in the vegetative void behind a fire is of equal concern to cultural resource managers.

Vegetation Treatments

Land-managing agencies have utilized various types of vegetation treatments to reduce fuel loads on the landscape in an attempt to lessen the potential impact and severity of wildfires. Vegetation treatments include chaining, prescribed burns, roller-chopping, and chopping/mulching as well as timber sales. Like all ground-disturbing activities that utilize mechanized assistance, vegetation treatments have direct and indirect impacts to sites (Andrews 2004; Harms and Reed 2006). The advantage of vegetation treatments over natural wildfires is the ability to plan the activity and thus apply a certain amount of foresight when assessing the degree of negative impacts to a site.

Grazing

The grazing of livestock (e.g., cattle or sheep) can adversely impact cultural resources (Osborn et al. 1987; Roberts and Gardner 1964). Grazing animals directly impact sites by trampling and churning shallowly buried cultural deposits and artifacts, and by toppling fragile standing structures (e.g., wickiups) by rubbing against them. These direct impacts are exacerbated by indirect erosional impacts that occur when animal densities outstrip the capacity of the landscape to recover. This type of destruction can occur over a broad area, but can also be highly localized, such as when animals congregate around water sources, salt licks, shades, and corrals.

Off-Highway Vehicles

The use of off-highway vehicles (OHV) on public lands has dramatically increased in popularity since the 1970s (http://www.blm.gov/ca/news/2000/01/nr/ohv_qanda.html, accessed March 19, 2010). The increasing ability of OHV users to access remote and challenging terrain is directly related to the impacts by OHV users on cultural resources. Both direct and indirect impacts (ground-disturbance and erosion) are of higher concern when unauthorized roads or trails are created. Erosion is of greater concern in particularly steep and rugged areas that are more susceptible to erosion and less able to recover from disturbances. As OHV users access otherwise remote areas, there are increasing concerns about increased site visitation and impacts from surface artifact collection and looting (cf Nickens et al. 1981).

Land Exchanges

As noted by others (Reed et al. 2008a, b), the loss of meaningful protection is the root cause of concern for impacts to cultural resources because of land exchanges or sales of public lands. The transfer of public lands to private hands, be they corporations or individuals, opens cultural properties to direct impacts (e.g., looting, mechanized ground disturbance, grazing) that may lead to indirect impacts as noted above.

Vandalism

Vandalism of archaeological sites on BLM land on the UFO is undoubtedly a serious problem, as it is in adjoining regions such as the Southwest (e.g., Nickens et al. 1981) and across the the western United States. It can range from surface collection of "arrowheads" and other artifacts—a common pastime in the west that many people have traditionally engaged in since the first Euroamerican settlement of the area—to illicit and highly destructive digging in rockshelters, ruins, and other highly visible sites. There is no way to know how many shallow or primarily surficial lithic scatters in the UFO have essentially been stripped of diagnostic artifacts over the years by arrowhead hunters, thereby losing much of the data that such sites can provide, but the number must be exceedingly high. There is little that the BLM can do about this activity—which is surely ongoing—other than public education and perhaps making an example out of the occasional collector who is caught in the act. Of greater concern is the focused destruction through illicit excavation of sites with intact buried cultural deposits. The BLM should continue to be aggressive both in protecting highly visible and important sites such as rockshelters and masonry ruins and in prosecuting looters who are caught in the act of vandalizing such sites.

Cultural Resource Use Categories

The BLM has defined six cultural resource use categories for classifying sites, described in BLM Manual Guidance 8110.4 and summarized below. The use categories are scientific use, public use, experimental use, conservation for future use, traditional use, and discharged from management. For this study, Alpine uses the additional category "undetermined use" for sites that do not fit into any of the BLM's defined use categories. The types of sites assigned to each use category, and in some cases specific sites, are discussed below. Tables classifying the majority of the cultural resource sites on BLM federal surface in the UFO into use categories are included in Appendix B.

Scientific Use

Sites in the scientific use category are suitable for scientific or historical study using current research methods and techniques. Cultural resources in this category generally consist of prehistoric or historic sites that contain archaeological deposits that can yield information applicable to important research questions. Such deposits are typically subsurface, but in some cases may represent surficial artifacts or features that can yield information through additional surface recording and collection. This category includes prehistoric and historic sites that are eligible to the NRHP under Criterion D, but may also include some that are evaluated as eligible under other criteria.

It is understood that scientific study could result in the property's physical alteration or partial or full destruction. Some particularly important properties classified as having scientific use may also be classified into the conservation for future use category. In such cases, it should be understood that conservation may only be necessary until such time as data recovery becomes feasible; that is, sites placed into both categories need not necessarily be conserved in the face of research or data recovery. Exceptions might include sites such as prehistoric masonry structures that should be conserved after excavation for other reasons, such as public interpretation. Some

sites—such as wickiups—may be classified into scientific, conservation, and traditional use categories.

In Chapters 4 and 5, and in the preceding section of this chapter titled "Research Context for the UFO: Data Needs and Potential Research Questions," data gaps and a number of research questions or issues deemed important for advancing scientific and historical understanding of the past human occupations of the UFO are identified and discussed. Obviously, some sites are better suited for yielding data to address specific research questions than others. For example, research questions relevant to the Protohistoric era can be best addressed with data from NRHP-eligible Protohistoric sites, with wickiups and sites with ceramics or Euroamerican trade goods representing the site types with the highest research potential. Table 39 describes the types of sites that offer the best potential for addressing the research questions identified as important for each archaeological unit. This table describes three types of sites: those with the potential for limited but still potentially useful data, those with the potential to yield good data that are relevant to at least some of the research questions identified in this study, and those with the best potential to yield data relevant to the most important research issues identified in this study.

Table 40 lists specific sites in the UFO that exhibit particularly good research potential and should be considered for excavation. The identification of specific sites for excavation is a somewhat subjective exercise, but the sites in Table 40 represent those that have been identified in other studies as worthy of excavation, or have been identified from the database developed for this project, or have been singled out by one of the authors of this overview as having high research potential, based on personal familiarity with the site. No Paleoindian sites are listed in Table 40 because it is impossible to determine from the database which of the sites with "Paleoindian" listed as cultural affiliation truly possess Paleoindian components. Table 39 provides guidelines for determining which Paleoindian sites have the best research potential, but in fact, any site with evidence of a Paleoindian component on the UFO should be regarded as a very significant cultural resource that may yield important information. Any researcher interested in investigating the Paleoindian occupation of the study area should start with the 27 sites on BLM land that have possible Paleoindian components, as listed in the database for the study area. Few Archaic sites are listed in Table 40 because the project database lacks the detail necessary to determine which of the NRHP-eligible Archaic sites in the UFO truly have the best potential for intact buried deposits and datable materials. As with the Paleoindian sites, Table 39 provides guidance for identifying the best Archaic sites for excavation in the UFO.

Conservation for Future Use

Sites classified for conservation for future use are those that are unique, represent a particularly scarce type of resource, or cannot be adequately studied with current research methods. Sites of special historic or architectural importance are included in this group. Fragile, vulnerable, and rare sites are included in this category, including wickiup sites and masonry architecture sites of the Gateway tradition. Sites in this group might be considered for preservation until excavation and analytical methods superior to those currently available are developed. As defined for this study, this category is *not* mutually exclusive with other categories. Many sites in the scientific category that are also included in this category might be appropriate for either excavation in the near future or conservation for future use, but this is a decision for BLM land and cultural resource managers. Therefore, the sites listed in the table in Appendix B and in the database submitted to the UFO as appropriate for "conservation for future use" represent only a potential pool of sites for actual conservation.

Table 39. Guide to Identifying Sites on the UFO with Data Recovery Potential.

Archaeological Unit	NRHP-eligible sites offering the best data potential	NRHP-eligible sites offering good data potential	NRHP-eligible sites and non-eligible sites/isolated finds offering limited (but still useful) data potential
Paleoindian era	Open or sheltered artifact scatters with a Paleoindian component exhibiting substantial soil depth, good contextual integrity, and moderate to high numbers of artifacts. Sites with known thermal features should rank higher.	Open or sheltered artifact scatters with a Paleoindian component exhibiting shallow to substantial soil depth, at least moderate contextual integrity, and low to moderate numbers of artifacts. Sites with known thermal features should rank higher. Any lithic procurement site with a Paleoindian component is important.	Open or sheltered artifact scatters with a Paleoindian component exhibiting shallow soil depth, low to moderate contextual integrity, and low numbers of artifacts.
Archaic era	Open or sheltered artifact scatters with an Archaic component exhibiting substantial soil depth, good contextual integrity, and moderate to high numbers of artifacts. Sites with known thermal features or obsidian should rank higher.	Open or sheltered artifact scatters with an Archaic component exhibiting substantial soil depth, at least moderate contextual integrity, and low to moderate numbers of artifacts. Sites with known thermal features or obsidian should rank higher. Any lithic procurement site with an Archaic component in important.	Open or sheltered artifact scatters with an Archaic component exhibiting shallow soil depth, at least moderate contextual integrity, and low numbers of artifacts.
Formative era	Sites with Formative-era structures exhibiting substantial and intact deposits inside unexcavated (or partially excavated) rooms, substantial and intact deposits in extramural areas, and overall good contextual integrity. Also, open or sheltered artifact scatters with ceramics. Sites with known thermal features or middens should rank higher.	Open or sheltered artifact scatters with a Formative component exhibiting substantial soil depth, good contextual integrity, and moderate to high numbers of artifacts. Sites with known thermal features or obsidian should rank higher. Sites with Formative-era structures badly damaged by vandalism but where some intact deposits may yet exist. Any lithic procurement site with a Formative component is important.	Open or sheltered artifact scatters with a non-structural Formative component exhibiting shallow soil depth, at least moderate contextual integrity, and low to moderate numbers of artifacts. Sites with small, heavily vandalized structures where extramural areas still retain potential.
Protohistoric era	Sites with Protohistoric wickiups exhibiting some soil deposition (can be shallow), good contextual integrity, and moderate to high numbers of artifacts. Also, open or sheltered artifact scatters with ceramics or Euroamerican trade goods. Thermal features and stripped juniper trees should rank a site higher. Single-component sites are best (i.e., no problems with mixing or palimpsests).	Open or sheltered artifact scatters with a Protohistoric component exhibiting some soil deposition (can be shallow), good contextual integrity, and moderate to high numbers of artifacts. Sites with known thermal features or obsidian should rank higher. Any lithic procurement site with a Protohistoric component is important.	Open or sheltered artifact scatters with a Protohistoric component exhibiting some soil deposition (can be shallow), at least moderate contextual integrity, and low to moderate numbers of artifacts. Sites with cambium-stripped pine trees.

Table 39. Guide to Identifying Sites on the UFO with Data Recovery Potential.

Archaeological Unit	NRHP-eligible sites offering the best data potential	NRHP-eligible sites offering good data potential	NRHP-eligible sites and non-eligible sites/isolated finds offering limited (but still useful) data potential
Historic Euroamerican period	Single component or short duration Homesteads, farming, or ranching sites; placer, coal mining, and radium/vanadium/ uranium sites and sawmills or lumber camps with residential components or technological evidence; short duration small towns and settlements; historic Euroamerican sites pre-dating 1881 representing encroachment on the Ute reservation; railroad construction camps; and sites where ethnicity is evidenced. Construction communities associated with the Uncompahgre Project. Fort Uncompahgre and other fur/hide trade sites if they can be identified. Los Pinos Indian Agency and Cantonment on the Uncompahgre.	Multiple component or long duration Homesteads, farming, or ranching sites or long duration towns and settlements. Camps along important trails or wagon roads that may be associated with use of the route. CCC side camps and work locations. Work camps associated with BOR projects. Work camps associated with early highway construction. Work camps associated with other large irrigation projects. Developed recreational facilities with tourist accommodations.	Sites of unknown function for which archaeological data may identify the historic theme or time period. Rail sidings or maintenance camps without discrete residential components. Sheep herder and cattle camps on the open range. Oil and gas and potassium exploration and extraction sites. Early electrical generating facilities with technological evidence. Dispersed recreational sites, such as hunting camps. Early ski area developments. Carved aspen trees or historic rock art/graffiti.

Table 40. Sites in the UFO[1] with High Research Potential.

Site #	Site Name	Landscape Unit	Cultural Affiliation	Comment
5ME469		DENCA	Protohistoric	Wickiup site
5ME552		DENCA	Protohistoric	Wickiup site
5ME7378		DENCA	Protohistoric	Wickiup site
5ME12290		DENCA	Protohistoric	Wickiup site
5ME14256		DENCA	Protohistoric	Wickiup site
5ME14258	Coyote Skull Wickiup Village	DENCA	Protohistoric	Wickiup site
5ME14260	Brush Corral Wickiup Village	DENCA	Protohistoric	Wickiup site
5ME15280		DENCA	Protohistoric	Wickiup site
5ME15281		DENCA	Protohistoric	Wickiup site
5ME15282		DENCA	Protohistoric	Wickiup site
5ME15283	Hook and Bead Wickiup site	DENCA	Protohistoric (Historic Ute)	Wickiup site with glass seed beads and metal hook
5ME15284		DENCA	Protohistoric	Wickiup site
5MN475		DENCA	Protohistoric	Wickiup site
5MN4349		DENCA	Protohistoric	Wickiup site
5MN4498		DENCA	Protohistoric	Wickiup site
5MN4499		DENCA	Protohistoric	Wickiup site
5MN4680		DENCA	Protohistoric (Historic Ute)	Wickiup site with glass seed beads
5MN4210	Honeycomb Rockshelter	Ouray	Archaic	Looted but retains intact deposits.
5MN863	The Moore site	Uncompahgre Plateau	Archaic	Anecdotally, the Moore site retains intact, unexcavated deposits (Squint Moore, personal communication to Jon Horn). The plan map depicted in Wormington and Lister (1956:Figure 5) seems to confirm that not all of the rockshelter was excavated.
5MN2341	The Harris site	Uncompahgre Plateau	Archaic	Intact, deeply buried deposits in the rockshelter likely still exist.
5MN44	Monitor Mesa Wickiup site—main site (no. 1 of 3)	Uncompahgre Plateau	Protohistoric	Wickiup site
5MN65	Monitor Mesa Wickiup site (no. 2 of 3)	Uncompahgre Plateau	Protohistoric	Wickiup site
5MN2538		Uncompahgre Plateau	Protohistoric	Produced Uncompahgre Brown Ware sherds
5MN3854		Uncompahgre Plateau	Protohistoric (Historic Ute)	Dates to the 1860s: glass beads, cartridges, many metal artifacts
5MN3937		Uncompahgre Plateau	Protohistoric (Historic Ute)	Dates to the 1860s: glass beads, cartridges, many metal artifacts
5MN4022		Uncompahgre Plateau	Protohistoric	Produced Uncompahgre Brown Ware sherds
5MN4903		Uncompahgre Plateau	Protohistoric	Wickiup site
5MN7579		Uncompahgre Plateau	Protohistoric	Wickiup site with Uncompahgre Brown Ware
5SM363		West End	Formative (Gateway)	Produced corrugated grayware sherd
5MN517	Hill I	West End	Formative (Gateway)	MSC's trenching upslope of the excavated structure may have detected a second structure. Extramural areas remain unexcavated.

Table 40. Sites in the UFO[1] with High Research Potential.

Site #	Site Name	Landscape Unit	Cultural Affiliation	Comment
5MN653	Wagon Bend	West End	Formative (Gateway)	The structure was excavated but extramural areas were not, with the possible exception of areas immediately adjacent to the structure.
5MN654	Cottonwood Pueblo	West End	Formative (Gateway)	The rooms have been excavated. The "plaza" area, possible storage features, and extramural areas are unexcavated. There is an unexcavated midden downslope.
5MN1224	The Binder site	West End	Formative (Gateway)	Unexcavated and unvandalized masonry structure.
5MN1609	Tabeguache Pueblo	West End	Formative (Gateway)	Portions of the four masonry rooms remain unexcavated. Extramural areas are unexcavated.
5MN7198	Garvey #3 site	West End	Formative (Gateway)	Masonry structure; shallow soils but apparently unexcavated and unvandalized.
5MN8432	Red Ridge site	West End	Formative (Gateway)	Two masonry structures, shallow but apparently intact deposits (i.e., unexcavated and unvandalized).
5MN8434	Wild Cow site	West End	Formative (Gateway)	The masonry structures generally lack deposition but extramural areas have subsurface potential.
5SM57	Rim Rock Ruin	West End	Formative (Gateway)	Heavily vandalized but extramural areas have subsurface potential. Some rooms appear to retain deposits, but their integrity is not known.
5SM346[2]	The Maze	West End	Formative (Gateway)	Vandalized but not as heavily as Rim Rock Ruin. Unexcavated. Retains intact deposits in extramural areas and at least partially intact deposits inside the structures.
5ME11647		West End	Protohistoric	Produced Uncompahgre Brown Ware sherds
5MN3485		West End	Protohistoric	Wickiup site
5MN3612		West End	Protohistoric (Historic Ute)	Wickiup site with tobacco tins, food cans, and coffee cans
5MN6230		West End	Protohistoric	Produced a ceramic sherd
5MN6920		West End	Protohistoric	Wickiup site
5MN7027		West End	Protohistoric	Wickiup site
5MN8247		West End	Protohistoric	Wickiup site
5MN8517		West End	Protohistoric	Wickiup site
5SM4348		West End	Protohistoric	Wickiup site

1 Includes only sites on BLM federal surface.

2 The Maze is described in Reed and Emslie (2008) as being on land managed by the BLM-UFO. However, GIS data obtained from the UFO show that the site lies just to the west of the field office boundary. It is included in this table because of its high research potential and close proximity to the UFO.

Traditional Use

This category is applied to cultural resources known to be perceived by a specific social and/or cultural group as important in maintaining their cultural identity, heritage, or well being. This group includes sites regarded or designated as properties of traditional religious and cultural importance, also known as traditional cultural properties (TCPs), although TCPs also include

geographic locales, landscapes, or landforms such as mountains that are not necessarily archaeological sites. Sites classified into the traditional use category should be managed in ways that recognize the cultural importance ascribed to them and to accommodate their continuing traditional use.

Prehistoric and historic Native American site types in the UFO that are included in the traditional use category include vision quest sites (though none have been identified on BLM lands within the UFO), shrines, rock art sites, sweat lodges, wickiups, teepee remains, tree platforms, burials, and cambium-stripped pine trees. Historic Euroamerican sites associated with traditional cultural use or important in the history or memory of a particular group might include cemeteries, homesteads, early townsites, old churches, and sites where traditional activities were conducted on a regular basis (e.g., a corral complex where local ranchers conducted annual spring branding).

Public Use

Sites classified into the public use category are those with qualities that make them useful for onsite interpretation, education, or recreational use by the general public. This category may include historic sites such as standing buildings or other types of structures (e.g., a bridge) suitable for continued or adaptive use.

As applied to sites in the UFO study area, the public use category contains a wide variety of site types that are perceived as having potential for interpretation or educating the public about prehistory or history. Examples of prehistoric site types potentially suitable for interpretation include rock art sites and sites with visible architecture such as the masonry structures of the West End LU. The development for public interpretation of some prehistoric site types, however, should be weighed against the possibility that the sites could suffer increased vandalism as a consequence of being singled out for interpretation. For this reason, only sites that can be protected in some fashion should be considered for public interpretation.

Examples of historic Euroamerican site types (or specific sites) suitable for interpretation include mining complexes, tramways, standing buildings with interesting architecture, historic rock art or inscriptions, and, of course, feats of engineering such as the Hanging Flume and the Gunnison Tunnel.

Other site types in the UFO are suitable for recreational use by the public. This group would include historic roads and trails that are open to foot, bicycle, or motorized vehicle traffic; and, as noted above, structures such as standing buildings or bridges that can be adapted for some type of recreational use.

This use category does not include historical sites that continue to be used by the public in the same capacity for which they were originally constructed, such as those related to agriculture (e.g., ditches and canals), stock-raising (e.g., a corral complex), or transportation (e.g., historic roads or railroads that are used primarily non-recreationally).

Experimental Use

Sites in the experimental use category are well suited for controlled scientific study, even when such study results in substantial alteration to or loss of the site. The controlled study does not typically include standard archaeological data recovery. The goals of an experimental program should be to increase understanding of natural or human-caused deterioration, to test the effectiveness of particular protection measures, or to develop new research or interpretation methods. It should not be applied to cultural properties with strong research potential, traditional cultural importance, or good public use potential, if it would significantly diminish those uses. The

data resulting from experimental use should benefit the interpretation or management of cultural resources similar to those subjected to experimentation.

In the UFO study area, no specific sites have been identified for the types of experimental use described above. The category, however, need not be restricted to sites that are intentionally subjected to some type of destructive action in order to achieve the experimental result. There are many sites on the UFO that have already been subjected to destructive natural forces, such as lithic scatters that suffer impacts from ongoing erosion and wickiup sites that fall prey to wildfire. If such sites can be identified and ground-truthed, it may be possible to harness these natural destructive events for innovative experimental studies. For example, there is a known wickiup site near Norwood in the West End LU (5MN4016) that recently mostly burned in the Grammar wildfire (Glade Hadden, personal communication to Rand Greubel). In this particular case, the site was in the process of having the wickiups mapped when the fire occurred. It should be possible to return to the site and, with the structures gone, document the patterning of artifacts—many of which are probably newly exposed because duff and vegetation have burned off—independently of the now-destroyed structures. Since the former locations of the wickiups are known, this exercise has the potential to generate data that might help to identify the former locations of long-since-decayed structures on other, older Protohistoric sites. One can imagine other experimental approaches to sites that have burned. Has the burning hastened erosion and, if so, in what ways and how rapidly? Regular monitoring of recently burned sites may allow insights into such "n-transforms" (Schiffer 1987) as they occur over a period of months or years. Similar opportunistic experiments could be devised for sites undergoing the effects of natural erosion in a variety of settings.

Another way to employ experimental methods but spare cultural resources is to create faux sites and allow them to be subjected to natural and cultural impacts such as erosion, cattle trampling, and vandalism. Such sites could consist of archaeologist-created lithic scatters placed in strategic locations where they can be easily visited, monitored, and subjected to data collection. The result might help land managers to understand the effect of such impacts on real cultural resources. Of course, such experiments can also be carried out simply by monitoring real lithic scatter sites over a lengthy period of time, but the advantage of the faux site is that every aspect of it—particularly the number of artifacts involved and their precise placements—can be controlled and documented.

Discharged from Management

Sites that have no identifiable use are classified into the discharge from management category. This includes sites that are not eligible to the NRHP and that have no obvious value for experimental use—although some ineligible sites are eminently appropriate for experimental use. Most isolated finds are also classified into this category. Sites classified for discharged from management are removed from further management consideration and do not impede other land uses.

Undetermined Use Category

The use category "undetermined" is not one formally used by the BLM, but there are sites within the UFO that cannot be assigned to any other use category because they either lack sufficient data to allow an accurate assessment of eligibility or are NRHP-eligible sites that do not readily fall into the scientific, public, traditional, conservation, or experimental use categories. Sites placed in this category include those evaluated as "need data," "unevaluated," or "not assessed." Also included in this category are sites that are used by the public but not in the ways indicated by the BLM's "public use" category definition, such as ditches and canals, corrals, fences, occupied structures, highways, and functioning railroads.

Management by Use Categories

Cultural resource sites on BLM land in the UFO are classified by use category in the tables in Appendix B and in the database submitted to the BLM along with this Class I overview. Some sites have been classified into more than one category. In general, sites that are eligible for listing on the NRHP because of their potential for yielding important scientific or historic archaeological data are classified into the scientific use category. Some sites classified for scientific use, however, may also be classified into the conservation for future use, traditional use, public use, or experimental use categories. As discussed above, it is not suggested that all sites classified as appropriate for "conservation for future use" be actually conserved. The list should be regarded merely as a pool of sites that might potentially be conserved; careful evaluation of site records and on-the-ground assessment will be necessary to determine which sites are actually worthy of conservation.

Most sites evaluated or determined not eligible to the NRHP are classified for discharge from use, though some—such as isolated finds or sites consisting solely of cambium trees—are classified into the scientific use category because they can yield data such as tree ring dates. Table 41 summarizes the total numbers of sites in the UFO that have been assigned to each use category.

Table 41. Summary of Use Categories Assigned to Sites on BLM Land in the UFO Project Area.

Use Category	Prehistoric Site Count	Historic Site Count	Multi-Component Site Count	Total
Discharged from Management	1303	221	47	**1571**
Scientific Use	433	41	53	**527**
Experimental Use	0	0	0	**0**
Conservation	66	0	5	**71**
Traditional	80	0	11	**91**
Public	76	47	10	**133**
Undetermined	832	98	50	**980**

As discussed above, cultural resource sites in the UFO are subjected to a multiplicity of threats on a daily basis. Sites in the scientific use category have intact cultural deposits. Human activities involving ground disturbances comprise a major threat to sites in this category. When sites are on public lands or are associated with a federal undertaking, the Section 106 process affords some protection for sites in the scientific use category, though Section 106 only requires *consideration* of the sites, which may or may not include preservation or archaeological excavation (King 2008). Other major threats to scientifically important cultural resources on federal land include energy development (e.g., oil and gas wells, pipelines, access roads, transmission lines and substations), livestock grazing, OHV use, prescribed burns, wildfires, timber sales, vegetation treatments, land exchanges, or vandalism, all of which can have highly variable but usually serious impacts to sites in the scientific use category. The impact of these threats is highest when they accelerate soil erosion. Natural soil erosion is also a great threat to sites, but generally is too pervasive to treat except in specific and limited circumstances (e.g., a masonry structure is being undermined by erosion and requires stabilization).

Particularly fragile sites in the conservation for future use category, such as wickiups, tree platforms, and prehistoric masonry structures, are susceptible to the same types of threats as all scientifically valuable sites, only more so. Brush or wooden structures may be destroyed by burning in either prescribed fires or wildfires. Vegetation treatments may destroy wooden structures directly or the trees into which they are incorporated. Cattle, vehicles, or vandals may simply knock over

wickiups whereas some may fall apart by natural deterioration. Brush structures are unlikely to last very long in the archaeological record; therefore, they should be carefully protected and conserved for future use as long as practical. Archaeologists increasingly appreciate the importance of perishable structures for understanding prehistoric sites where traces of such structures have disappeared, and scientific approaches focusing on the structures and their associated activity areas continue to evolve. Some degree of protection can be insured if areas of old growth pinyon and juniper forest are mapped and avoided by energy development projects, prescribed burns, vegetation treatments, and land exchanges, at least until such time as cultural resource inventories can identify wickiups and other fragile sites types in those areas.

Traditional cultural properties (TCPs) or traditional cultural use areas may vary greatly, as they may include landforms or other landmarks, vegetation communities, or archaeological or historical sites. As a result, threats to those resources can also vary greatly. The sites classified in the traditional use category in the UFO include two areas that have been identified by a Native American (Ute) elder—both of which are in the process of being formally nominated as TCPs—and two archaeological sites flagged as potential TCPs by the site recorders. Other potential Native American TCPs in the UFO include vision quest sites, shrines, rock art sites, sweat lodges, wickiups, tree platforms, burials, and possibly cambium-stripped pine trees. Possible Euroamerican TCPs might include cemeteries, homesteads, early townsites, old churches, and sites where traditional activities were conducted on a regular basis—though no Euromamerican TCPs have yet been identified as such on the UFO. Avoidance of such sites by ground-disturbing activities and destructive undertakings such as prescribed burns and and vegetation treatments is key for the protection of the UFO traditional-use sites. Steps should be taken to ensure protection of the integrity of site settings. Potential visual impacts from planned undertakings should also be evaluated. If TCPs or traditional cultural use areas are also classified under scientific, conservation, or public use, their protection should be especially high priority.

Sites in the public use category are also variable, including standing historical architecture, historic roads and trails, mining complexes, historical engineering projects, rock art sites, and certain other types of prehistoric sites. Many of these sites tend to be highly visible and are often readily avoidable by planned ground-disturbing activities.

Vandalism is another pervasive threat that affects sites in many different use categories. Vandalism can be reduced through discouraging vehicular access to important or highly visible sites in remote settings, by placing educational and cautionary signage, or by having BLM law enforcement or site stewards engage in more intensive monitoring of site condition in more accessible areas. It may be possible to enlist the help of other agencies or organizations, such as the county sheriff or the Colorado Divison of Wildlife, to at least report possible cases of site vandalism; special BLM training sessions might be offered to individuals of other agencies who spend considerable time working in, or patrolling, areas where significant sites are present. The BLM should continue or even step up its efforts to enlist the public in site protection; the site stewardship program is an excellent way to accomplish this goal. Public education, however, is probably the best way to combat looting and other types of vandalism.

Management Recommendations

In the preceding sections, potential future research directions for prehistoric and historic archaeology in the UFO have been discussed. Management strategies for dealing with threats to sites in particular use categories have been addressed and recommended. This section presents management recommendations from a more general perspective. Five overarching management objectives are identified. Ideas are suggested for improving the identification, protection, and study of significant cultural resources on the UFO and for enhancing public interpretation and education.

Objective 1: Identify Historic Properties

Within the UFO on lands managed by the BLM, a total of 3,087 sites has been recorded as of the date of this report. The sites are summarized by NRHP status in Table 42. Despite the large number of sites recorded, these cultural resources represent a relatively small fraction of all the cultural resource sites present on the UFO. As noted in Chapter 2, only 5.5 percent of all BLM lands within the UFO have been intensively inventoried for cultural resources. Clearly, more inventory work is needed before a full understanding of the prehistoric and historic occupations of the area can be achieved.

Table 42. Summary of NRHP Status of Sites Located on BLM Land in the UFO Project Area.

NRHP Status	Prehistoric Site Count	Historic Site Count	Multi-Component Site Count	Total
Officially Not Eligible	794	120	28	942
Field Not Eligible	508	101	19	628
Officially Eligible	269	45	35	349
Field Eligible	142	27	13	182
Officially Needs Data	224	13	17	254
Field Needs Data	285	27	26	338
Listed on National Register	0	2	0	2
Listed on State Register	3	1	0	4
No Assessment/Unknown	343	32	12	387
Other	0	1	0	1
TOTAL	**2,568**	**369**	**150**	**3,087**

It is recognized that public funding may not be available for large-scale inventories not directly tied to developments, but narrowly focused, smaller-scale surveys—designed to identify sites of particularly high scientific or historic value, traditional cultural properties, or sites for development for public education—may be more affordable or could be conducted using in-house personnel and resources. As an example, the UFO could perform or fund inventories focused on the identification and documentation of wickiups, tree platforms, and similar wooden Native American architecture. The Dominguez Archaeological Research Group has already implemented a similar effort, but not on the scale of the lands administered by the UFO. Native American wooden features are fragile and are particularly sensitive to disturbances from vegetation treatments, recreation, and grazing. These types of features are unlikely to last many more decades, so a proactive identification and documentation effort would result in the preservation of very important scientific data and would strengthen the link between Ute tribal peoples and the lands their ancestors occupied.

Consideration should also be given to alternative or more intensive inventory methods in higher elevation areas where ground visibility is poor due to dense vegetation and where past inventories have encountered low site densities. Conducting archaeological monitoring of construction disturbances in non-site areas to determine whether cultural deposits have been obscured is one possible method that may reveal the presence of sites where few had been found before (see Hoefer et al. 2002:106). Another approach, though expensive, would be to require the excavation of relatively shallow shovel holes or "shovel scrapes" to remove duff in heavily vegetated areas to determine whether cultural deposits are obscured. If a shovel testing program were implemented, it could be limited to areas in topographic settings conducive for human habitation where the modern ground surface is known to be obscured by duff or vegetation. Another way to reduce the costs of such a procedure would be to employ a sampling approach, such as conducting one or two transects of shovel probes/scrapes across a survey area rather than every transect. Annual review of the procedure could be conducted, because it is possible that sites are generally absent, and not just obscured, in many highland settings. Areas that have recently burned also

present opportunities for more effective inventory, provided duff and vegetation have burned off and the ground surface is fully exposed. In such cases, rapid mobilization of a survey crew will be necessary before vegetation grows back.

Site identification efforts should also include the testing and evaluation of the site sensitivity models developed by this project. Future cultural resource inventories can be compared to the site sensitivity maps created for this study. Site densities in the inventoried areas can be calculated by sensitivity zone and the validity of the model tested. If discordances are found, refinement of the sensitivity model should be considered.

Identification of historic properties should also include traditional cultural properties, or TCPs. The BLM should continue to work with Native American and other cultural groups with historic ties to the region to identify TCPs, so that they can be considered early in the planning phases of projects. Native American groups are sometimes reluctant to identify TCPs, so the BLM should continue its practice of direct consultation with tribes on development projects so that tribes can respond from an informed basis. It is also sometimes forgotten that Euroamericans, such as the descendants of early settlers of the region, may have links to sites or locales that can be characterized as TCPs for those groups or individuals (King 2008).

Accurate assessments of site significance are critical for identifying the types of sites needed to advance archaeological research in the region. As suggested in this document, archaeologists working on the UFO should consider using the site significance ranking scheme devised by Reed and Smith Gebauer (2004) for the UPAP project, or at least closely examine the variables used in the significance matrix and keep them in mind when making evaluations. Obviously, whether or not a site is evaluated as significant determines its fate. As Reed and Metcalf (1999) argue, economic and political concerns make it impractical to classify all sites as significant resources. Cultural resource managers must, therefore, provide guidance to archaeological contractors regarding which sites are worthy of protection and worthy of the economic costs associated with that protection.

Sites dating to the historic period should probably be more rigorously recorded and evaluated than has typically been the case. Competent historic artifact analysis is necessary as a prime source of information about the period of occupation and function of a site. This information will help guide additional historical research whose goal should be to place the site in historic context temporally, functionally, and thematically. All historic-period sites, including structural sites, should be carefully examined and tested, if necessary, to evaluate archaeological potential. It should be remembered that archaeological deposits need not be deeply buried to contain data of importance, and even surficial scatters of artifacts may have data recovery potential. Historic sites found on federal lands will not necessarily be the same as those found on adjacent or nearby private lands, and this should be taken into consideration when significance evaluations are being made. That is, the history of land use and occupation on federal lands should be kept in mind when evaluating historic sites. Of exceptional importance, sites representative of failed or relinquished land acquisition attempts are a class of sites that can be considered typical on federal lands in general and on BLM lands in particular. They are not typical on private lands because successful land acquisitions resulted in lands becoming private and leaving the public domain, whereas failed land acquisition attempts reverted to the public domain and are still in federal ownership. Successful acquisitions developed into full-scale farms and ranches, whereas the failures represent short-term, single-occupation residential components that, on the surface may appear inconsequential, but in reality are frequently repositories of unambiguous data that are clearly focused by theme and function (Church et al. 2007:287-289). Resource procurement sites on federal lands, such as for logging or mining, may have similar clear functional and thematic focuses and specific chronological periods. Short-term, single occupation sites are often an excellent opportunity for exploring ethnicity through archaeology. Realizing this potential requires recognition through artifact analysis and historical research. Site recorders should also realize that large and complex historic resources

might, in fact, be inferior to simpler sites for the purposes of archaeological research. Historic sites occupied for long periods are often characterized by mixing of artifacts of various ages and functions, which complicates interpretations.

Objective 2: Protect Historic Properties

In addition to its obligations under Section 106 of the National Historic Preservation Act, the BLM is encouraged to enlist the cooperation of interested groups and individuals to monitor and protect the region's most important cultural resource sites (i.e., site stewardship or similar programs). The BLM should also be proactive in reaching out to local law enforcement agencies and educating them about the importance of upholding historic preservation and human burial laws.

It is recommended that the BLM be particularly aggressive in protecting cultural resources assigned to its scientific, traditional use, and conservation for future use management categories. Special land-management strategies may be necessary to ensure that prescribed burns, grazing, off-road vehicular travel, recreation, vegetation treatment, or illicit collection or site looting do not adversely impact these important cultural resources. It is recognized that funding may be limited, but creative means of protection such as site stewardship, as noted above, should be used whenever possible. Signage and/or fencing might be considered for some site types. More frequent checking of highly visible and vulnerable sites during patrols conducted primarily for other purposes might help to protect sites as well.

Objective 3: Develop and Interpret Historic Properties

Efforts should be made to promote public understanding of the past in a manner that does not compromise a site's integrity of setting and overall level of protection. One method to further public appreciation of its nation's heritage is to develop a few sites for pubic interpretation. Some types of historic structures are particularly well-suited for interpretation, as they are usually near roads and often visually interesting. Prehistoric sites are more challenging to interpret for the public, as prehistoric architectural remains—except for the masonry structures of the Gateway tradition present in the West End and possibly some wickiup sites—are usually unsuitable for preservation and interpretation. Roadside signs may be an effective way to educate the public about cultural resources. Public education can also include the use of various types of media—brochures, popular books, narrated DVD slideshows—to describe historic and prehistoric sites in the area.

Objective 4: Promote Scientific Research

Scientific analysis of historic properties by universities or non-profit research groups might also be promoted by the BLM. Scientific investigations provide a broader context for the evaluation and interpretation of other, similar sites in the study area. Scientific research is not the sole domain of academic institutions, however. Especially on large development projects where Section 106 is applicable, the BLM should demand high-quality research designs, state-of-the-art methodologies, and reporting of project results at archaeological conferences and in peer-reviewed publications. In some cases, it may be appropriate to enlist the assistance of avocational groups such as the Colorado Archaeological Society for small-scale local research projects.

Objective 5: Public Communication

Currently, the BLM communicates cultural resource information to the general public primarily through signs and brochures. The BLM also supports programs like Project Archaeology, designed to train elementary school teachers about archaeological issues. Brochures, signs, and well-informed educators all reach different segments of the general public and can be regarded as moderately successful in sensitizing the public to cultural resource concerns. There remains, however, a significant segment of the public that has not been reached through the established avenues of communication. Many do not realize the negative impacts of artifact collection or of

driving off-road. Others do not realize the scientific value of many of the cultural resource sites in the UFO. Increased use of mass media by the BLM might potentially reach a broad segment of the general public and would foster the preservation of cultural resources by increasing the public's awareness of the cultural resources on the public lands that they use. The UFO might consider developing cultural resource-related messages for broadcast on commercial radio or television.

Of course, an economical way to communicate with the public is the internet. The UFO should consider building or funding a web site, or adding pages to their existing web site, with abundant and interesting information about archaeology and history on the UFO. Such a web site should include both visually interesting graphics and substantive text. In addition to educating and entertaining the public, the web site could describe the destructive effects of looting, illicit artifact collection, or irresponsible use of public lands. It could contain links to on-line literature and other interesting archaeology and history websites in the region and encourage visitors to join the Colorado Archaeological Society and possibly even become a site steward.

Conclusions

The goals of this study were to gather and organize baseline data on cultural resources within the Uncompahgre Field Office, develop a GIS database, analyze the site and GIS data, create a site sensitivity model and maps covering the study area, prepare a synthetic overview of the prehistoric and historic occupations of the study area, and present management recommendations for cultural resource sites. These goals have been achieved. This Class I overview comprises a description of currently known cultural resources in the UFO, discusses important research issues in the study area and identifies the data needed to address those issues, presents site sensitivity maps for the prehistoric and historic time periods, discusses management options for cultural resources by defining use categories for particular classes of sites, and addresses potential threats to each category of those sites. Databases and sensitivity maps resulting from this study have been provided separately to the UFO.

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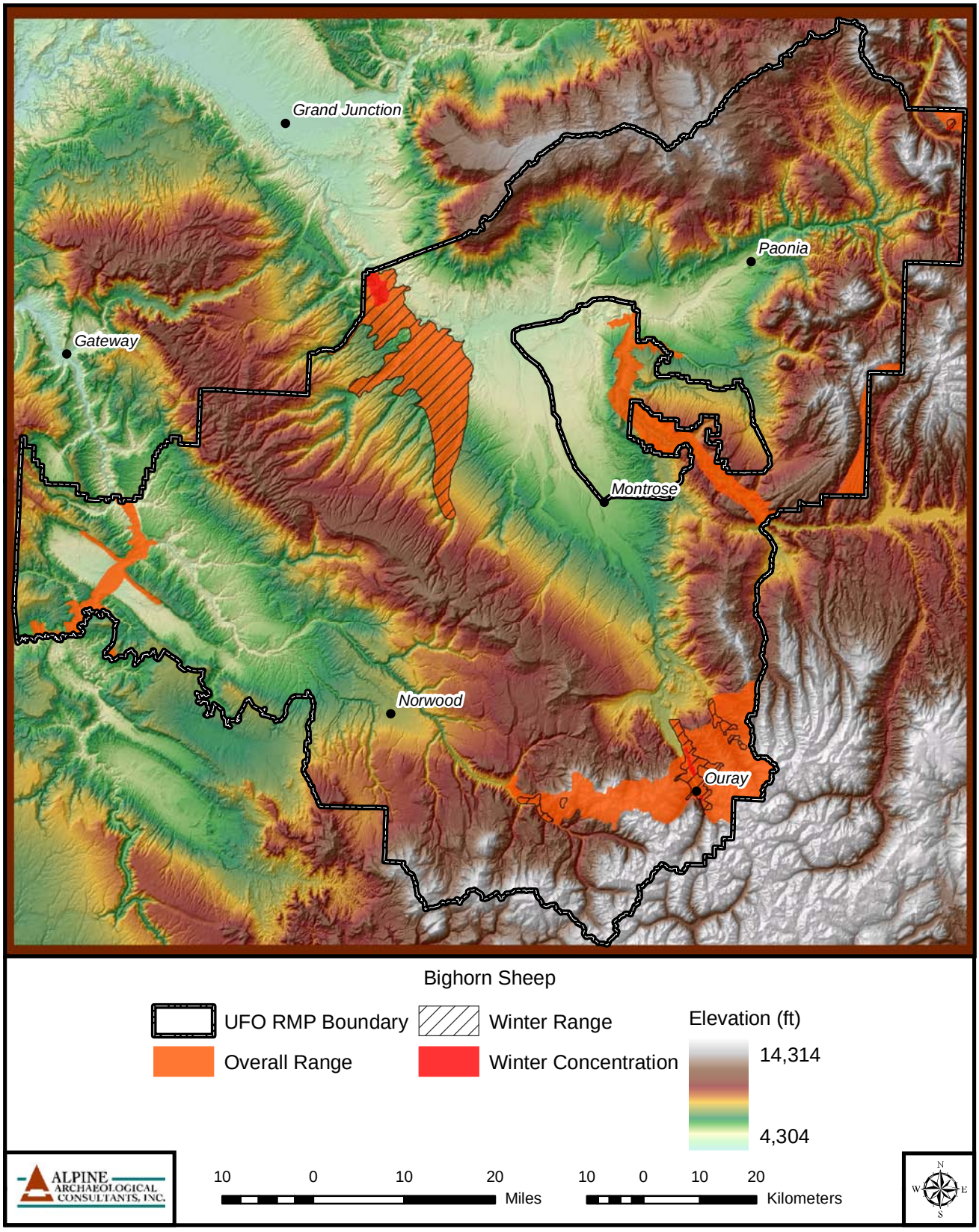
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APPENDIX A

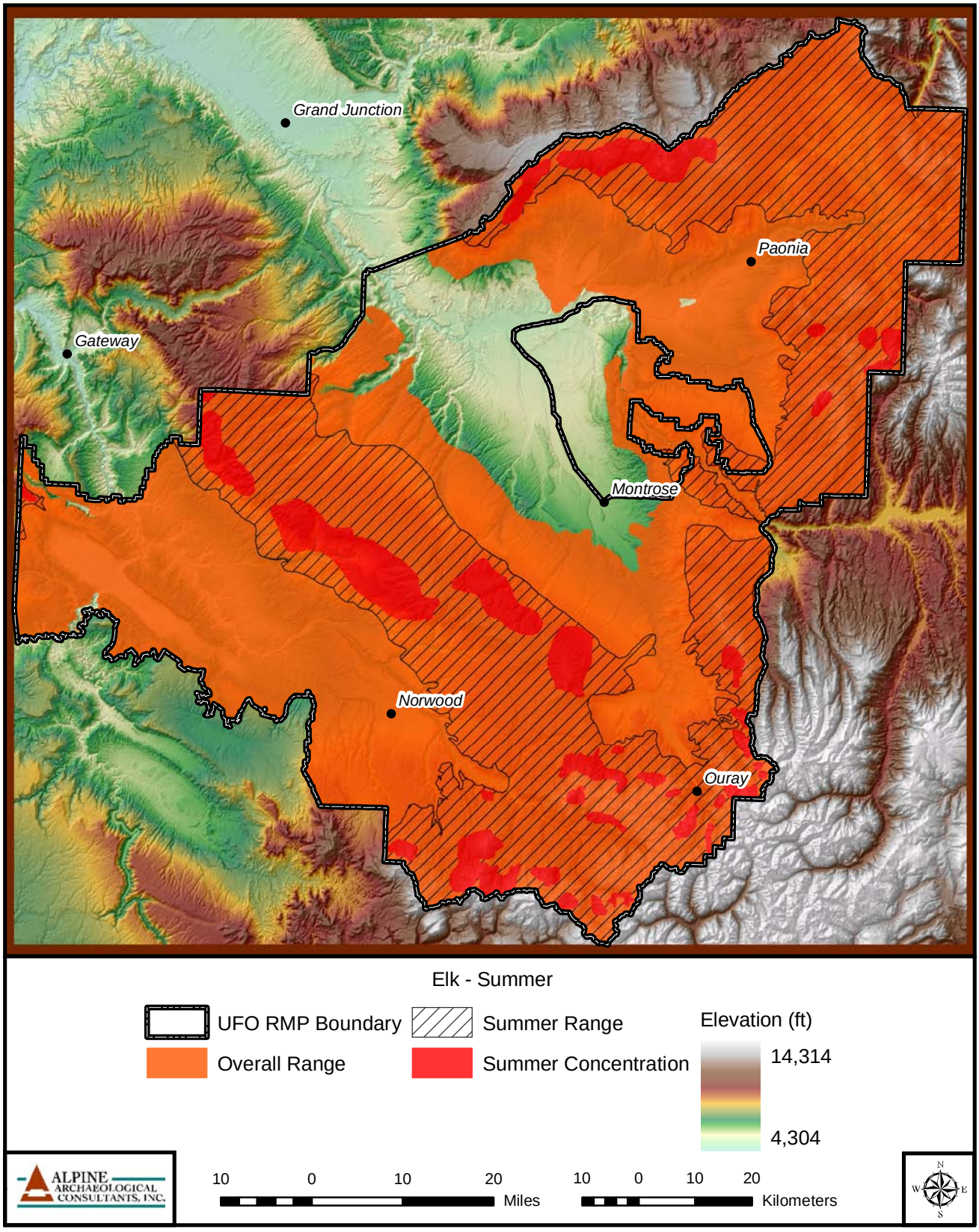
(Faunal Range Maps)

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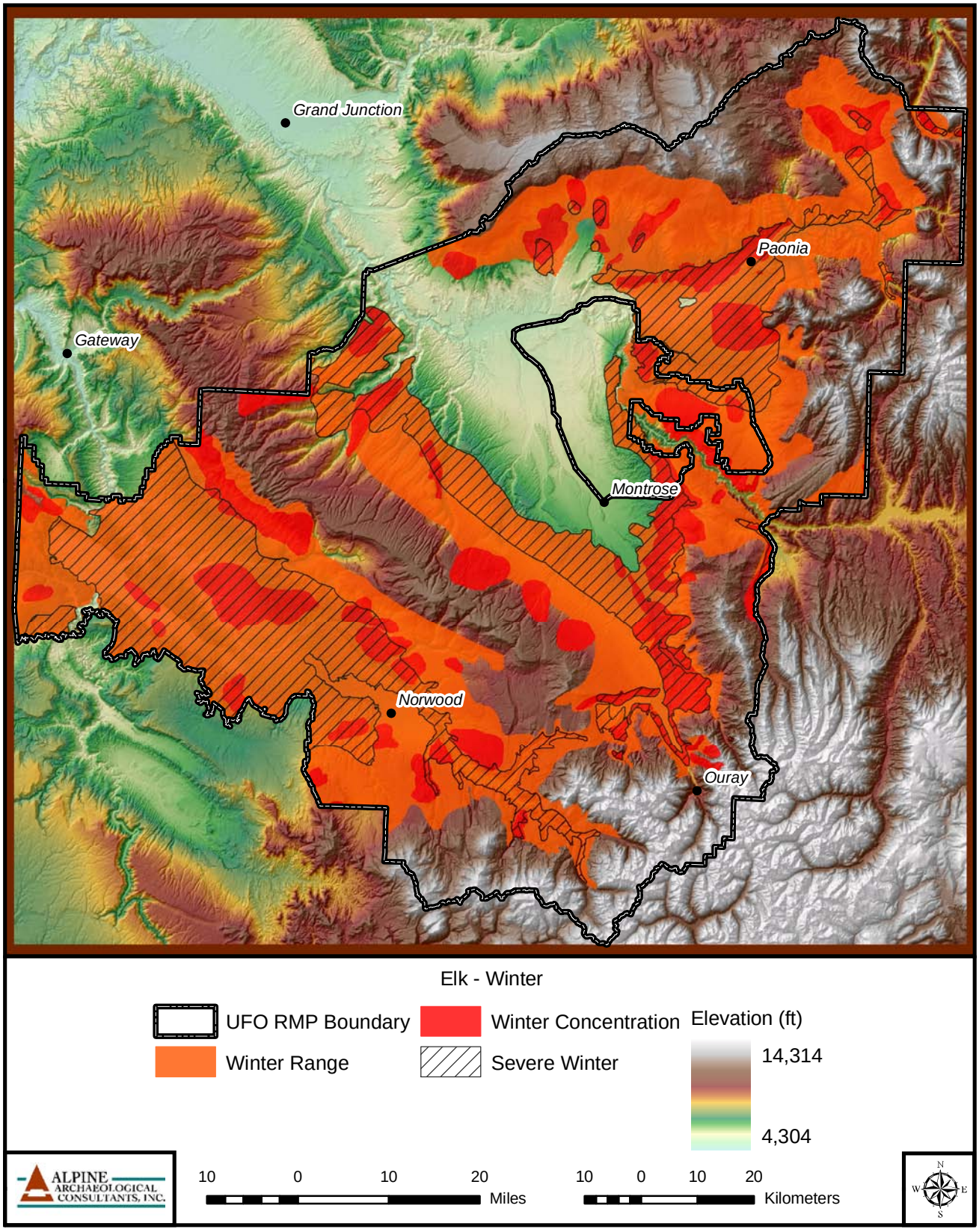
Appendix Map 1

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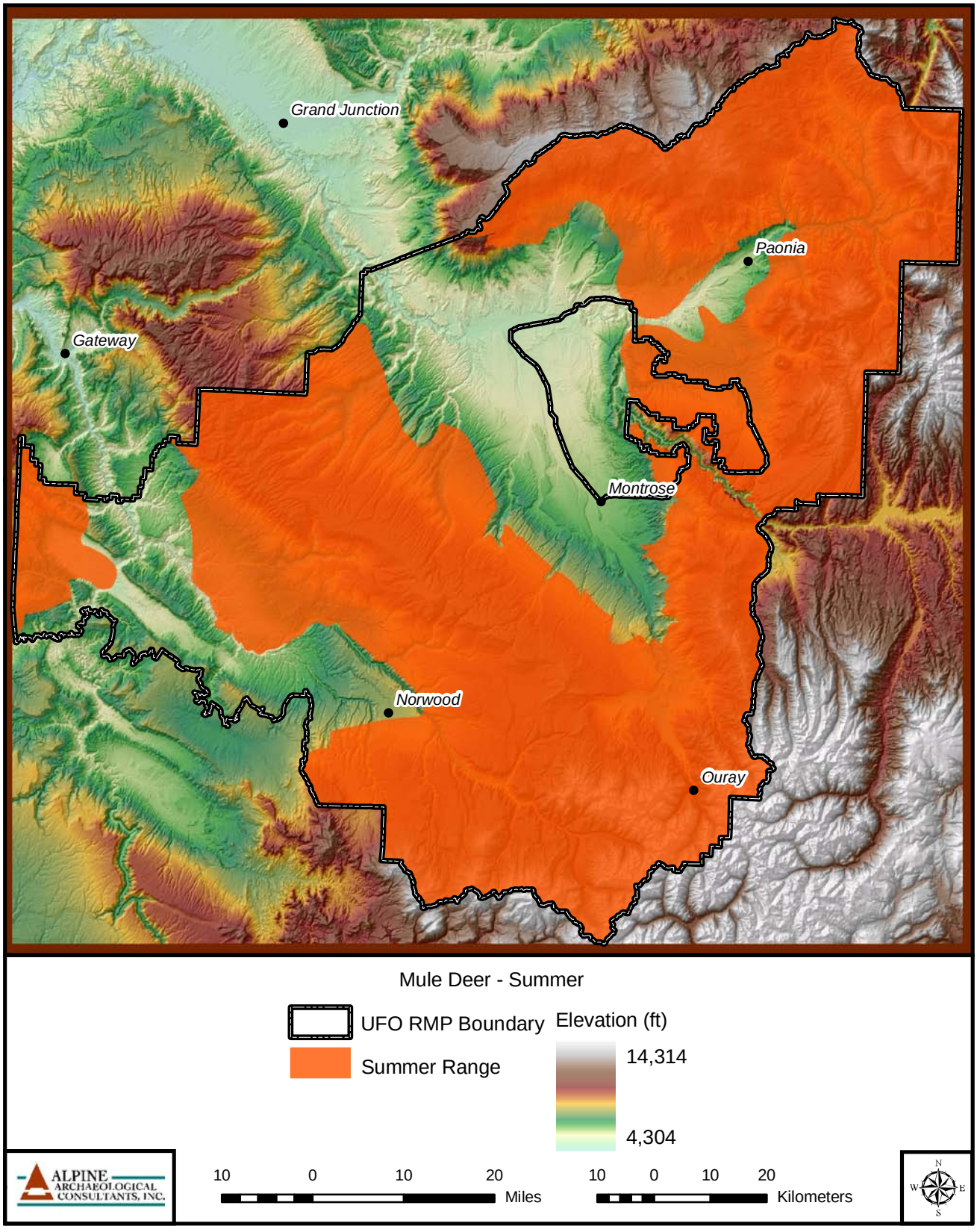
Appendix Map 2

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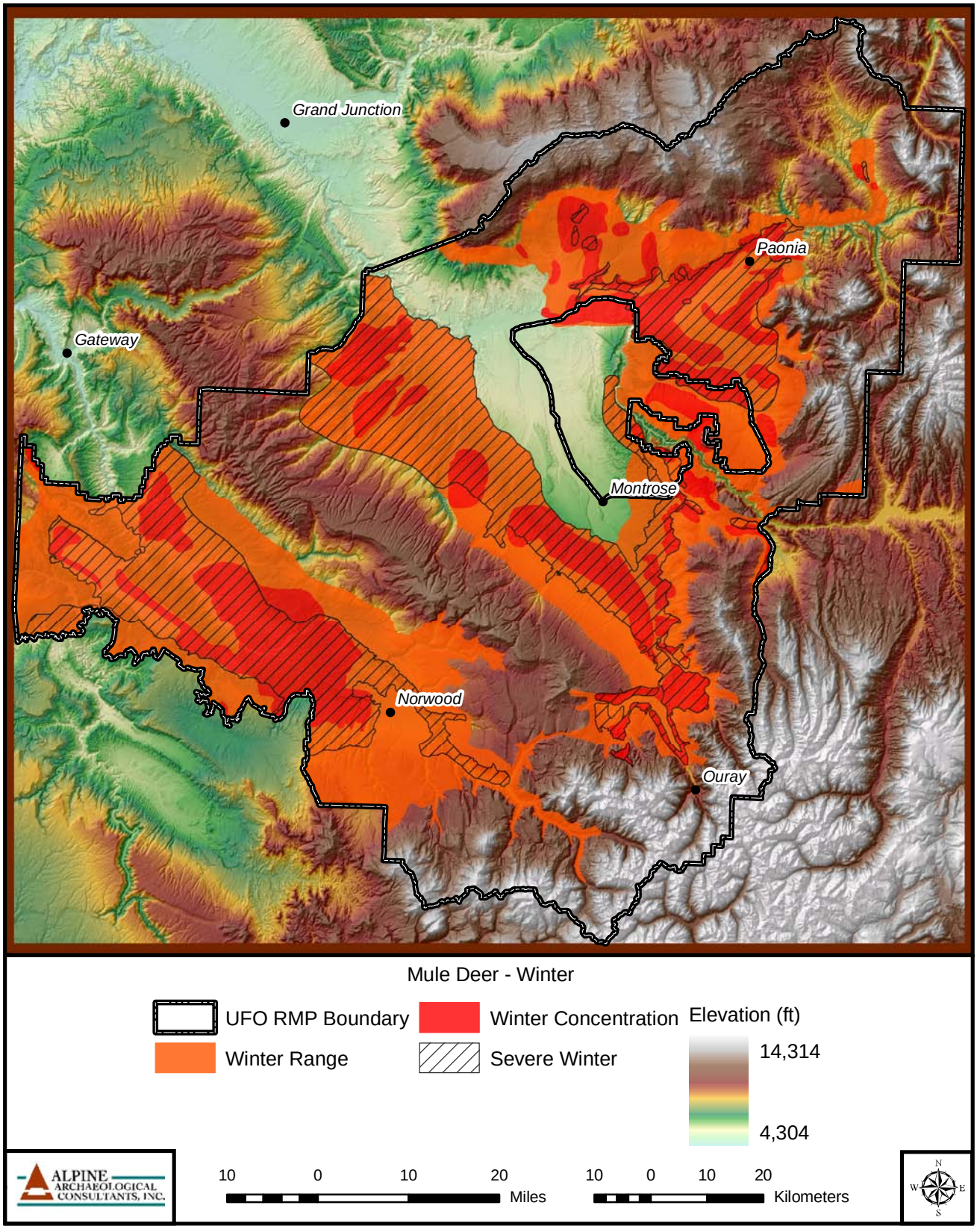
Appendix Map 3

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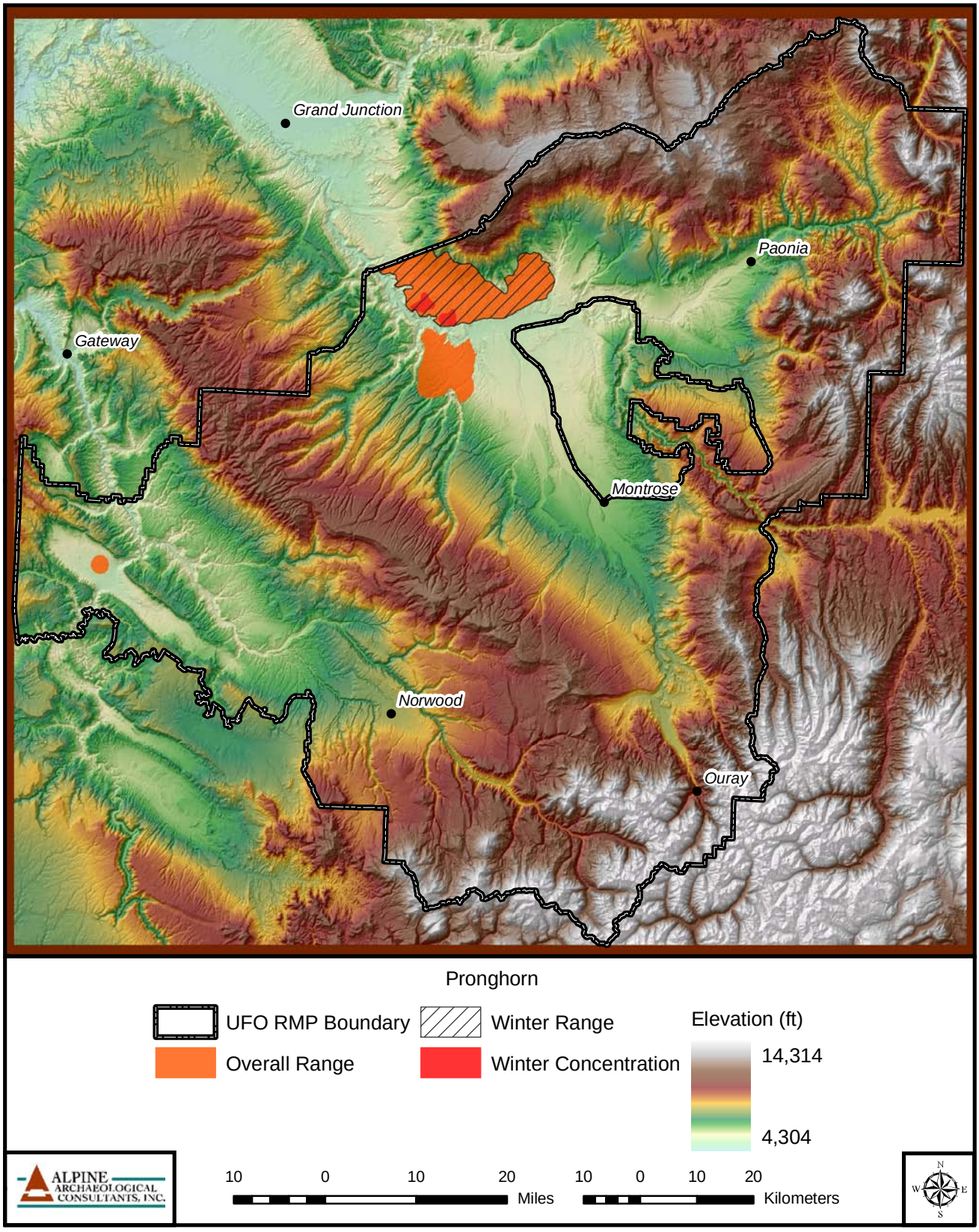
Appendix Map 4

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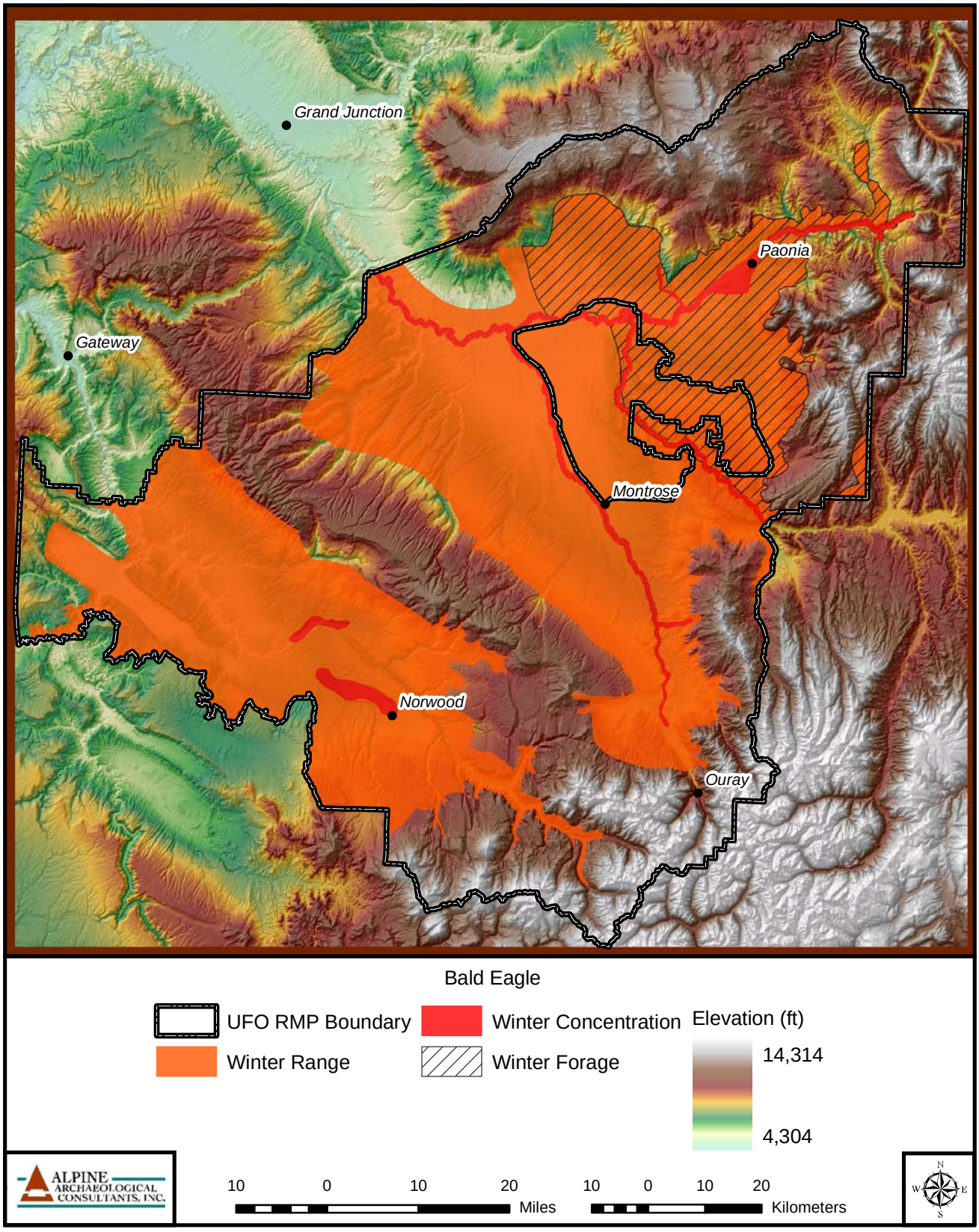
Appendix Map 5

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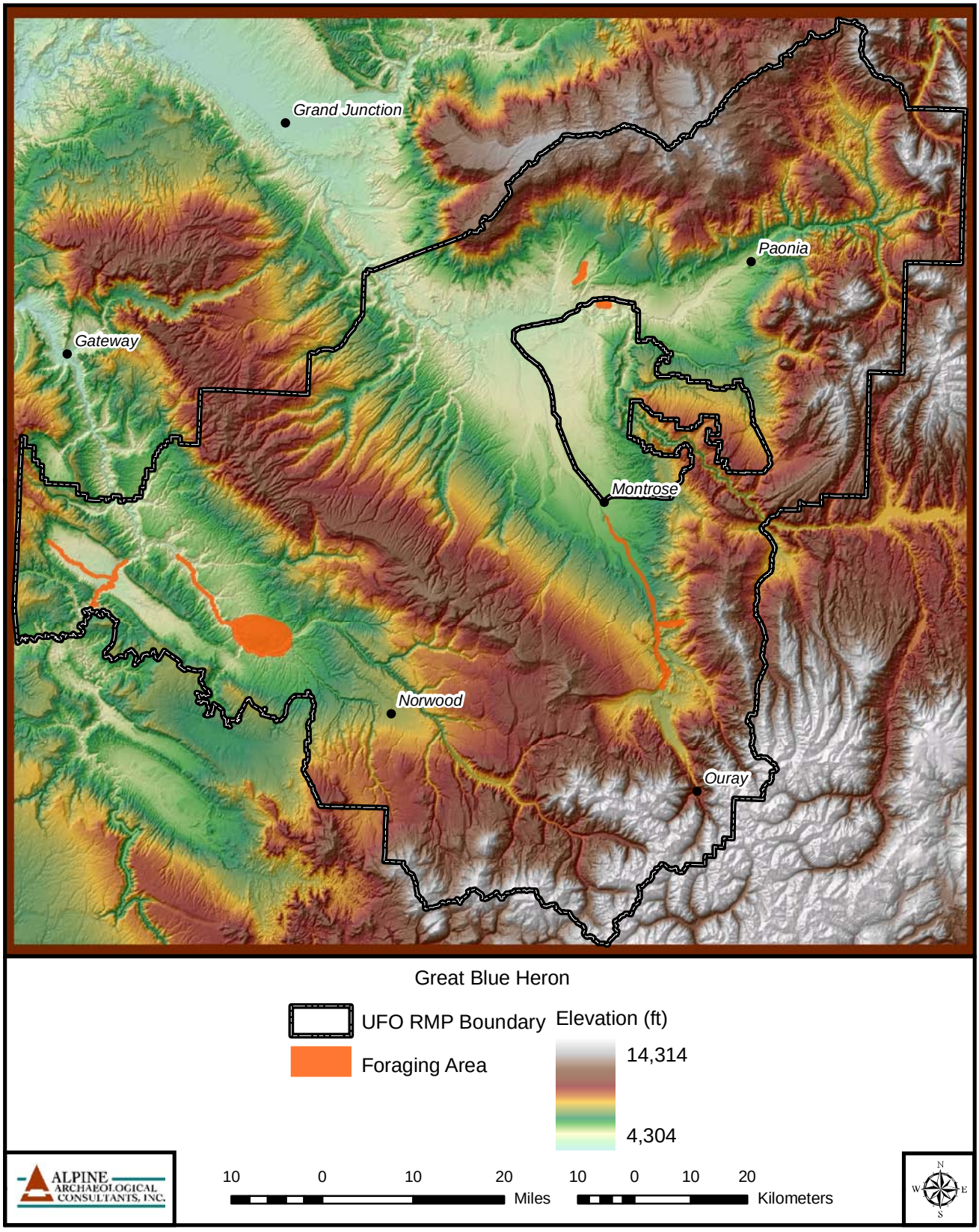
Appendix Map 6

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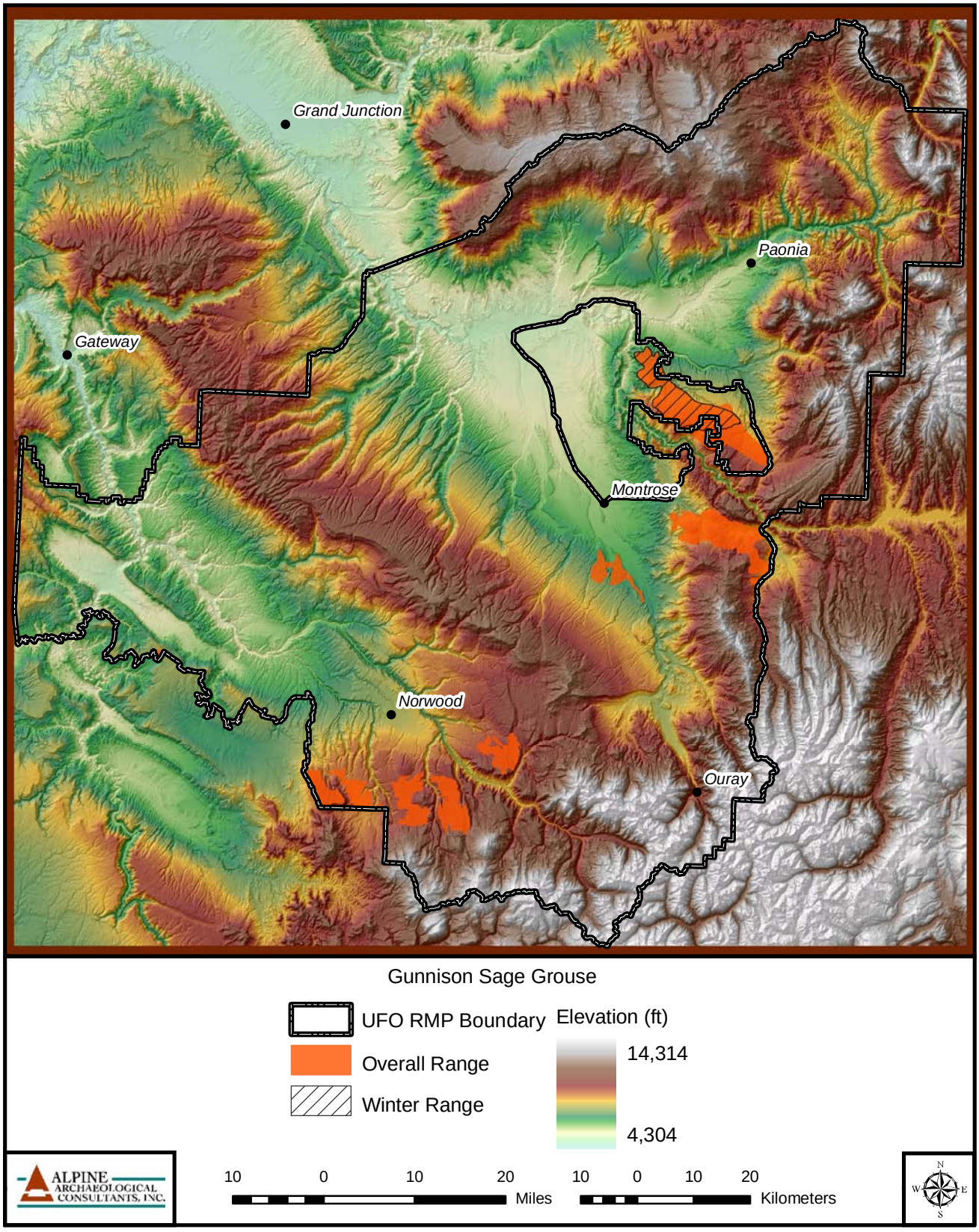
Appendix Map 7

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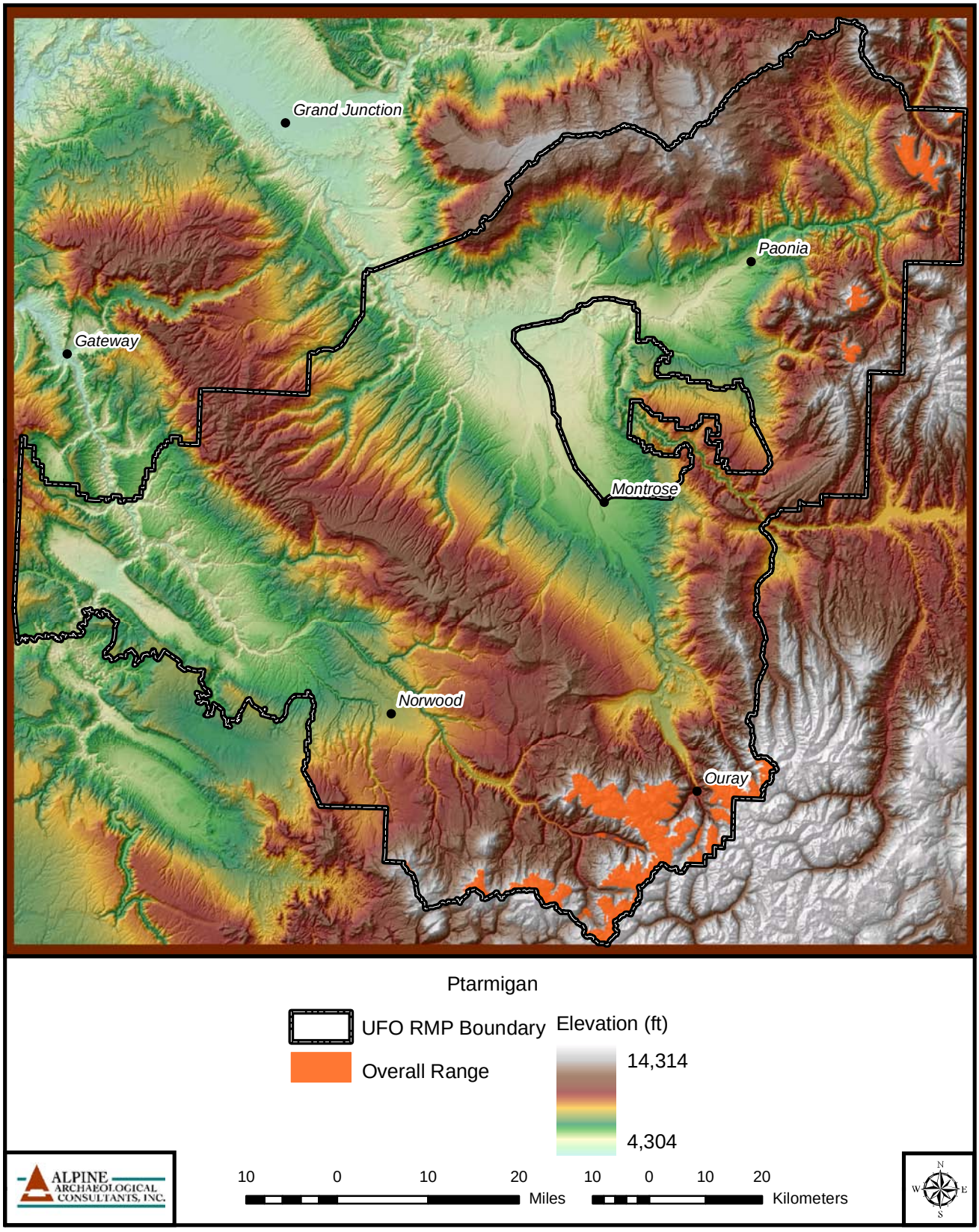
Appendix Map 8

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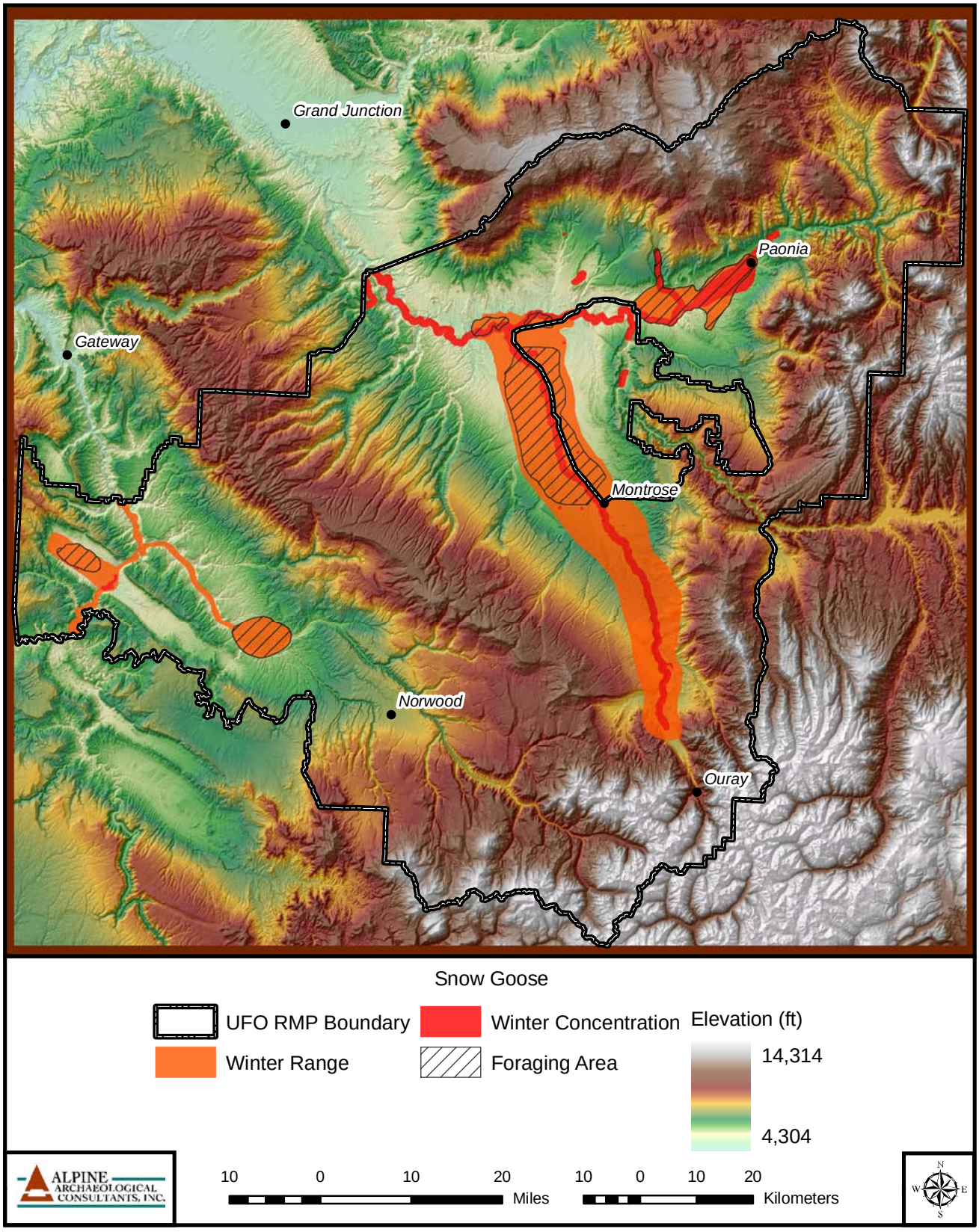
Appendix Map 9

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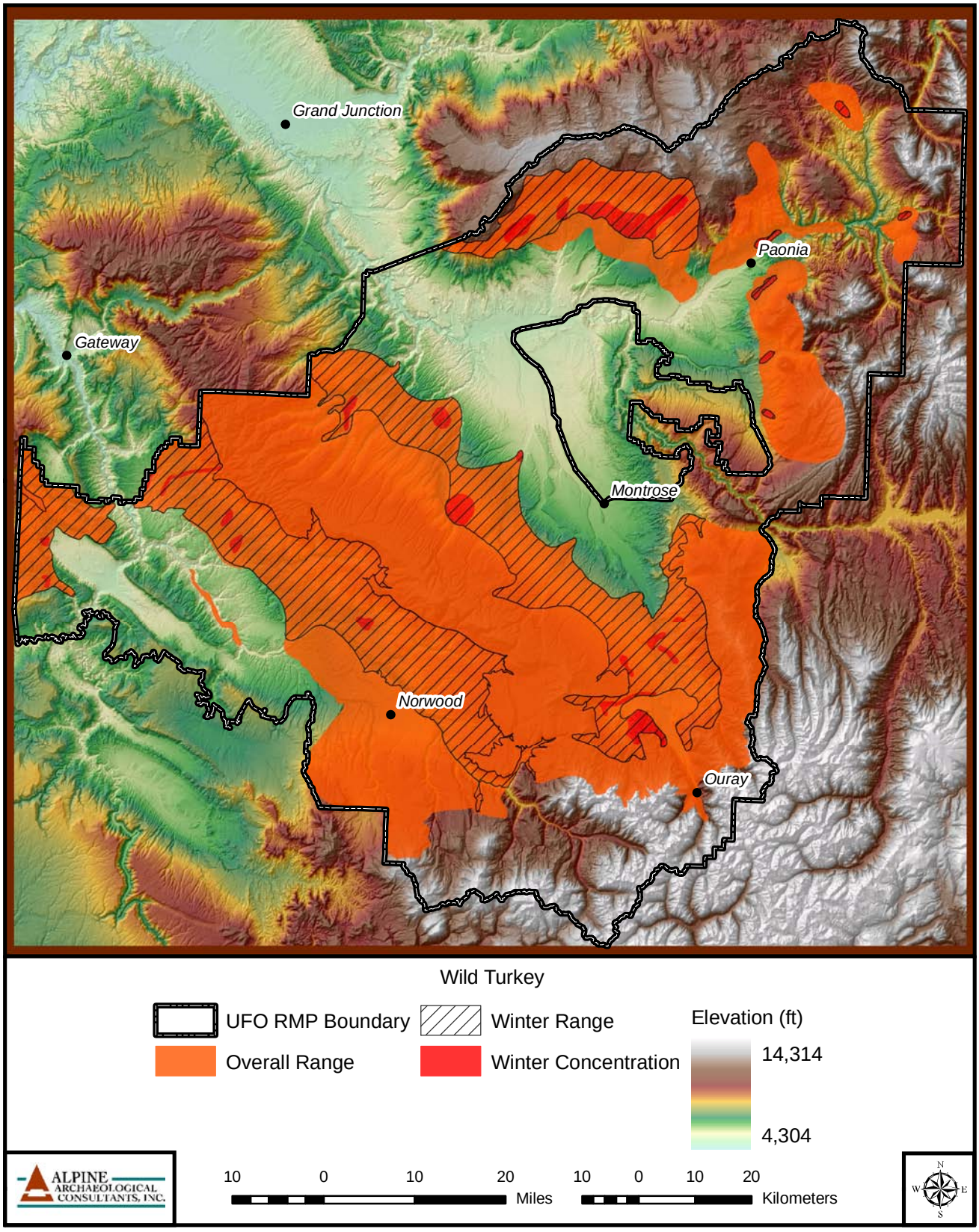
Appendix Map 10

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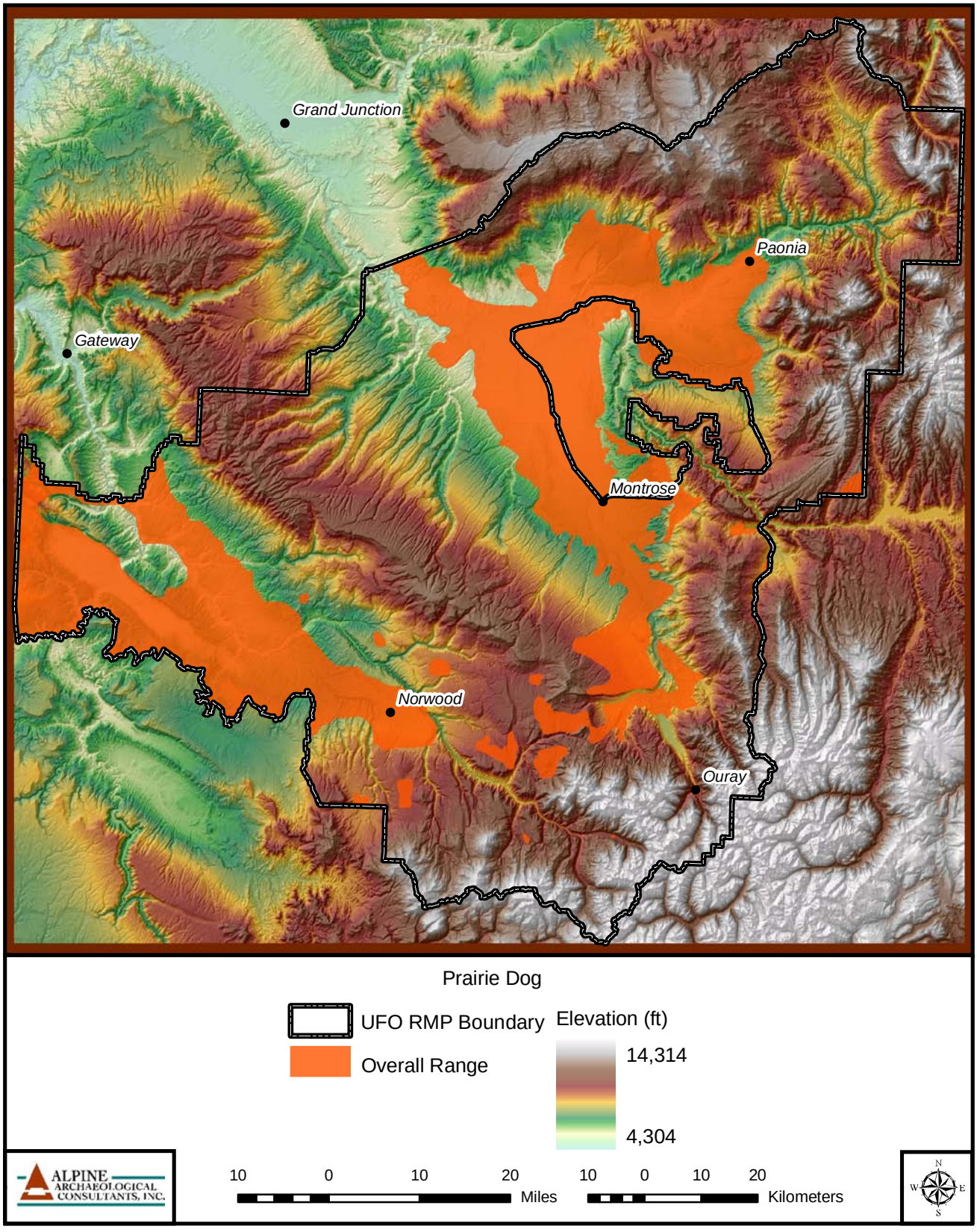
Appendix Map 11

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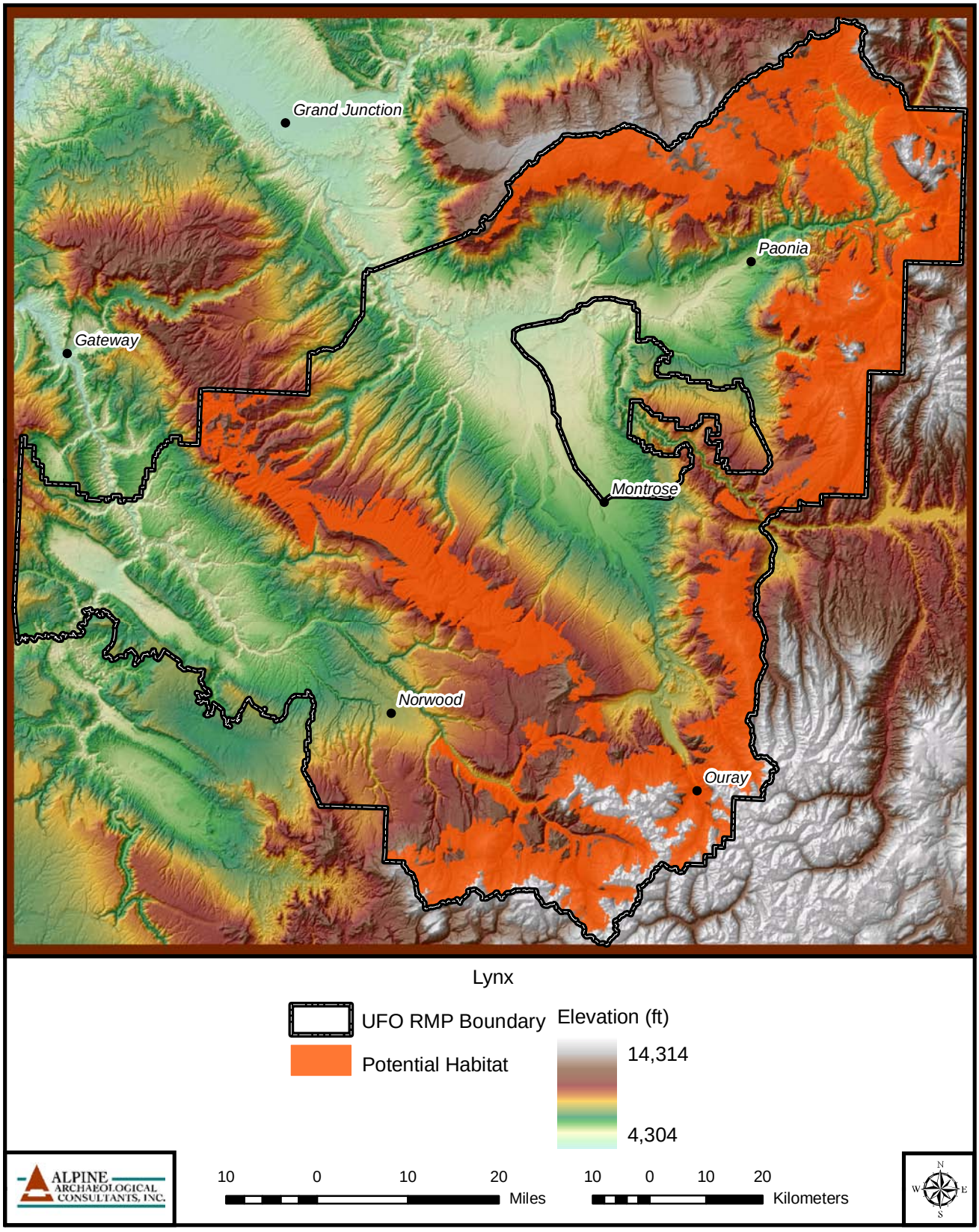
Appendix Map 12

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Appendix Map 13

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Appendix Map 14

APPENDIX B

(Tables of Sites Assigned to Cultural Resource Use Categories)

Appendix Table 1. Uncompahgre Field Office: Sites Classified for Scientific Use.

Site Number	Landscape Unit	Site Type	Site Name	NRHP Status
5DT1	DENCA	Rock Art; Historic, Rock Art	Dry Forks Petroglyph	NA
5DT10	DENCA	Open Architectural		FE
5DT1068	Uncompahgre	Open Lithic; Historic, Isolated Feature		OE
5DT11	DENCA	Stone Quarry		OE
5DT1124	Uncompahgre	Open Camp		OE
5DT113	DENCA	Rock Art		FND
5DT114	DENCA	Rock Art		NA
5DT12	DENCA	Sheltered Lithic		OE
5DT13	DENCA	Open Lithic		OE
5DT14	DENCA	Sheltered Camp		OE
5DT150	Uncompahgre	Open Camp		OE
5DT1690	DENCA	Rock Art		FE
5DT1691	DENCA	Rock Art		FE
5DT1692	DENCA	Rock Art		FE
5DT1693	DENCA	Rock Art		FE
5DT1694	DENCA	Rock Art		FE
5DT1719	North Fork	Open Camp		OE
5DT192	DENCA	Open Architectural; Historic, Camp	Escalante Game Drive/Dominguez Stone Circles	FE
5DT209	DENCA	Sheltered Camp		FE
5DT214	DENCA	Open Architectural		OE
5DT215	DENCA	Open Lithic; Stone Quarry		OE
5DT318	DENCA	Open Camp, Rock Art; Historic, Rock Art		NA
5DT330	DENCA	Sheltered Lithic		FE
5DT331	DENCA	Sheltered Camp		FE
5DT335	DENCA	Sheltered Camp		FE
5DT336	DENCA	Sheltered Camp		FE
5DT4	DENCA	Rock Art; Open Lithic	Musser Petroglyph Site, Escalante Crossing Petroglyph Site	OE
5DT48	DENCA	Sheltered Lithic		OE
5DT49	DENCA	Sheltered Lithic		OE
5DT51	DENCA	Open Lithic		FE
5DT52	DENCA	Open Lithic		FE
5DT53	DENCA	Rock Art	Petroglyphs in Leonard's Basin	FE
5DT54	DENCA	Open Lithic; Rock Art		FE
5DT56	DENCA	Sheltered Lithic?		FE

Appendix Table 1. Uncompahgre Field Office: Sites Classified for Scientific Use.

Site Number	Landscape Unit	Site Type	Site Name	NRHP Status
5DT57	DENCA	Open Architectural		FE
5DT580	DENCA	Open Lithic		FE
5DT59	DENCA	Sheltered Lithic		FE
5DT6	DENCA	Sheltered Camp; Rock Art		OE
5DT60	DENCA	Open Lithic		FE
5DT61	DENCA	Open Lithic		FE
5DT62	DENCA	Open Lithic		FE
5DT63	DENCA	Sheltered Lithic		FE
5DT64	DENCA	Rock Art; Historic, Rock Art		FE
5DT65	DENCA	Sheltered Lithic		FE
5DT659	North Fork	Open Camp		FE
5DT66	DENCA	Sheltered Camp		FE
5DT67	DENCA	Open Lithic		FE
5DT68	DENCA	Sheltered Lithic; Rock Art		FE
5DT759	DENCA	Rock Art		NA
5DT761	DENCA	Rock Art		FE
5DT8	DENCA	Sheltered Camp		FE
5DT853	Uncompahgre	Open Camp; Historic, Trash Dump	Fool's Hill	OE
5DT9	DENCA	Lithic Quarry		FE
5DT945	Uncompahgre	Open Architectural	Wells Gulch Site	OE
5ME11647	West End	Open Camp		OE
5ME12290	DENCA	Open Architectural		OE>FE>FE
5ME12585	West End	Open Camp		OE
5ME12605	West End	Open Camp		OE
5ME14256	DENCA	Open Architectural		OE
5ME14257	DENCA	Open Camp; Burial?		OE
5ME14258	DENCA	Open Architectural	Coyote Skull Wickiup Village	OE
5ME14260	DENCA	Open Architectural	Brush Corral Wickiup Village	OE
5ME15279	DENCA	Rock Art, Open Lithic		OE
5ME15280	DENCA	Open Architectural		OE
5ME15281	DENCA	Open Architectural		OE
5ME15282	DENCA	Open Architectural		OE
5ME15283	DENCA	Open Architectural; Historic, Camp	Hook and Bead Wickiup Site	OE
5ME15284	DENCA	Open Architectural		OE
5ME469	DENCA	Open Architectural		FE
5ME552	DENCA	Open Architectural		FE
5ME7378	DENCA	Open Architectural	Wickiup Village	FE
5MN10	Uncompahgre	Sheltered Camp		FE

Appendix Table 1. Uncompahgre Field Office: Sites Classified for Scientific Use.

Site Number	Landscape Unit	Site Type	Site Name	NRHP Status
5MN1020	Uncompahgre	Open Lithic		FE
5MN1034	West End	Rock Art; Sheltered Camp	Paradox Valley Petroglyphs	FE
5MN1114	West End	Open Camp		FE
5MN1140	West End	Sheltered Camp		FE
5MN1141	West End	Sheltered Architectural		FE
5MN1142	West End	Sheltered Camp		FE
5MN1164	West End	Sheltered Camp		FE
5MN1186	West End	Sheltered Camp; Rock Art		FND
5MN1192	West End	Rock Art; Historic, Isolated Feature		OE
5MN1213	DENCA	Sheltered Architectural		FE
5MN1215	Uncompahgre	Rock Art; Sheltered Lithic; Historic, Isolated Feature	John Davis Site	FND
5MN1218	Uncompahgre	Open Lithic		OE
5MN1262	West End	Historic, Sweat Lodge		OE
5MN14	Uncompahgre	Sheltered Camp; Rock Art	Carlyle Shelter	OE
5MN1402	Uncompahgre	Open Architectural	Serings Hunting Blind	FE
5MN15	Uncompahgre	Sheltered Camp	Juanita's Shelter	OE
5MN159	West End	Open Camp		FE
5MN1609	West End	Open Architectural	Tabeguache Pueblo	LSR>FE
5MN1627	Uncompahgre	Open Lithic		FE
5MN17	Uncompahgre	Sheltered Camp	The Initial Site	OE
5MN1920	Uncompahgre	Open Camp		OE
5MN1929	Uncompahgre	Open Lithic		FE
5MN1934	Uncompahgre	Open Lithic		FE
5MN1935	Uncompahgre	Open Lithic		FE
5MN1937	Uncompahgre	Open Lithic		FE
5MN1938	Uncompahgre	Open Lithic		OE
5MN1944	Uncompahgre	Open Camp		FE
5MN1954	Uncompahgre	Open Lithic		FE
5MN1957	Uncompahgre	Open Camp		FE
5MN1958	Uncompahgre	Sheltered Camp; Rock Art		FE
5MN1961	Uncompahgre	Open Lithic		FE
5MN1962	Uncompahgre	Open Camp		OE
5MN2	Uncompahgre	Sheltered Camp; Rock Art	Hauser Site	FND
5MN220	West End	Open Lithic; Rock Art		FND
5MN2221	West End	Sheltered Architectural	Falcon Crest Shelter	FE
5MN2224	West End	Open Architectural		FE
5MN229	West End	Open Camp		OE
5MN23	Uncompahgre	Sheltered Camp; Burial	Spring Creek Burials	FE

Appendix Table 1. Uncompahgre Field Office: Sites Classified for Scientific Use.

Site Number	Landscape Unit	Site Type	Site Name	NRHP Status
5MN2341	Uncompahgre	Sheltered Camp; Rock Art	Harris Site	FE
5MN2399	Uncompahgre	Open Camp		OE
5MN24	Uncompahgre	Sheltered Camp		FE
5MN2416	Uncompahgre	Open Architectural		OE
5MN2418	Uncompahgre	Open Camp		OE
5MN2439	Uncompahgre	Open Lithic		OE
5MN246	West End	Open Lithic		OE
5MN25	Uncompahgre	Sheltered Camp		FE
5MN2538	Uncompahgre	Open Camp		OE
5MN2542	Uncompahgre	Open Camp; Historic, Trash Scatter		FE
5MN26	Uncompahgre	Sheltered Camp		FE
5MN2736	West End	Open Lithic		FE
5MN2740	West End	Open Lithic		FE
5MN2841	Uncompahgre	Open Camp; Historic, Mine Shaft		OE
5MN2876	Uncompahgre	Open Camp		OE
5MN2954	Uncompahgre	Rock Art	Windy Point Panel	FE
5MN30	Uncompahgre	Sheltered Camp; Rock Art	Monte's Shelter	FND
5MN3001	West End	Open Camp		OE
5MN3004	West End	Open Camp		FE
5MN3006	West End	Open Camp		FE
5MN3007	West End	Open Lithic		FE
5MN3010	West End	Open Lithic		FE
5MN3011	West End	Open Camp		FE
5MN3015	West End	Open Camp		OE
5MN3026	Uncompahgre	Open Camp	Jacobson Site	FE
5MN3034	West End	Open Camp		OE
5MN3036	West End	Open Architectural		OE
5MN3169	West End	Open Lithic		FE
5MN3171	West End	Open Camp		FE
5MN3172	West End	Open Lithic		FE
5MN3204	West End	Open Camp		FE
5MN3205	West End	Open Camp		FE
5MN33	Uncompahgre	Open Camp	Cushman Creek Site	OE
5MN3428	West End	Open Camp		FE
5MN3447	Uncompahgre	Historic, Cabin	Ben Lowe Cabin	FE
5MN3450	Uncompahgre	Rock Art	Roatcap Gulch Panel	FE
5MN3451	Uncompahgre	Sheltered Camp, Rock Art; Historic, Isolated Feature	Shring Site	FND
5MN3485	West End	Historic, Structure		OE

Appendix Table 1. Uncompahgre Field Office: Sites Classified for Scientific Use.

Site Number	Landscape Unit	Site Type	Site Name	NRHP Status
5MN3489	West End	Open Camp		OE
5MN35	Uncompahgre	Open Camp	Bedrock Pit Site	FE
5MN36	Uncompahgre	Open Camp; Sheltered Camp		FE
5MN3612	West End	Open Architectural; Historic, Corral		OND
5MN363	West End	Sheltered Architectural		OE
5MN365	West End	Sheltered Camp; Historic, Sheltered Camp	The Twin Rocks	FE
5MN3668	West End	Open Camp		OE
5MN3672	West End	Open Lithic; Burial		OND
5MN37	Uncompahgre	Sheltered Camp		FE
5MN3854	Uncompahgre	Open Camp; Historic, Campsite?		FE
5MN3858	Uncompahgre	Sheltered Camp; Historic, Camp		OE
5MN3859	Uncompahgre	Open Camp; Historic, Camp		OE
5MN3861	Uncompahgre	Open Camp; Historic, Trash Scatter		OE
5MN3866	Uncompahgre	Open Camp		OE
5MN388	West End	Sheltered Camp, Rock Art		FE
5MN3880	Uncompahgre	Open Camp		OE
5MN3881	Uncompahgre	Open Camp		OE
5MN3883	Uncompahgre	Open Camp; Historic, Trash Dump		OE
5MN3887	Uncompahgre	Open Camp; Historic, Camp		OE
5MN3888	Uncompahgre	Open Camp		OE
5MN3891	Uncompahgre	Open Lithic		OE
5MN3929	Uncompahgre	Open Camp; Historic, Isolated Find		FE
5MN3937	Uncompahgre	Open Camp; Historic, Hunting Camp		FE
5MN3995	West End	Open Camp		OE
5MN4014	West End	Open Camp	3	OE
5MN4015	West End	Open Lithic		OE
5MN4022	Uncompahgre	Open Camp; Historic, Trash Scatter		FE
5MN4032	Uncompahgre	Sheltered Camp; Historic, Rock Art, Trash Dump		FND
5MN4040	Uncompahgre	Open Camp; Historic, Trash Scatter		FE
5MN4075	West End	Open Camp; Historic, Trash Dump		OE
5MN4077	West End	Open Lithic		OE
5MN4081	West End	Open Camp		OE
5MN4210	Ouray	Sheltered Camp	Honeycomb Rock Shelter/Happy Canyon	FE
5MN4238	Uncompahgre	Open Camp		OE
5MN4240	Uncompahgre	Open Lithic		OE
5MN4241	Uncompahgre	Open Camp		OE
5MN4274	West End	Open Camp		OE

Appendix Table 1. Uncompahgre Field Office: Sites Classified for Scientific Use.

Site Number	Landscape Unit	Site Type	Site Name	NRHP Status
5MN4306	West End	Open Camp		FE
5MN4307	West End	Open Camp		FE
5MN433	West End	Sheltered Camp		OE
5MN4349	DENCA	Open Architectural		FE
5MN4350	Uncompahgre	Sheltered Camp	Bundle Rockshelter	FE
5MN4358	West End	Open Camp		OE
5MN4361	West End	Open Camp		OE
5MN4363	West End	Sheltered Camp		OE
5MN439	West End	Rock Art, Sheltered Lithic?	Dolores Petroglyphs	FE
5MN44	Uncompahgre	Open Architectural	Monitor Mesa Wickiup - Main Site (Number 1 of 3)	NA
5MN440	West End	Rock Art; Open Camp		NA
5MN4412	Uncompahgre	Open Camp; Historic, Isolated Find		FE
5MN443	West End	Rock Art; Sheltered Lithic		FE
5MN4477	West End	Historic, Mining Complex	Sunbeam Mine~Stone Building at Sunbeam Mine	OE
5MN4480	West End	Historic, Mining Complex	Wedge No. 2 Mine	OE
5MN4482	West End	Historic, Mining Complex	Rex No. 38 Mine, Rex 36 Mine	OE
5MN4483	West End	Historic, Mining Complex	Joe Dandy #5	OE
5MN4498	DENCA	Open Architectural?		FE
5MN4499	DENCA	Open Architectural		FND
5MN4538	Uncompahgre	Open Lithic		OE
5MN4540	Uncompahgre	Open Lithic		OE
5MN4545	Uncompahgre	Open Camp		OE
5MN4551	Uncompahgre	Open Camp; Historic, Camp		OE
5MN4552	Uncompahgre	Open Lithic		OE
5MN4553	Uncompahgre	Open Camp		OE
5MN4554	Uncompahgre	Open Camp; Historic, Camp		OE
5MN4556	Uncompahgre	Open Camp		OE
5MN4558	Uncompahgre	Open Camp		OE
5MN4563	Uncompahgre	Open Lithic		OE
5MN4568	Uncompahgre	Open Camp		OE
5MN4581	Uncompahgre	Open Camp		OE
5MN4588	Uncompahgre	Open Camp		OE
5MN4600	Uncompahgre	Open Lithic		OE
5MN4607	Uncompahgre	Open Camp; Historic, Wood Cutting Area		OE
5MN4610	Uncompahgre	Open Camp		OE
5MN4614	Uncompahgre	Open Camp		OE
5MN4638	Uncompahgre	Open Lithic		OE

Appendix Table 1. Uncompahgre Field Office: Sites Classified for Scientific Use.

Site Number	Landscape Unit	Site Type	Site Name	NRHP Status
5MN4639	Uncompahgre	Open Camp		OE
5MN4671	West End	Rock Art	Rock Art	FE
5MN4680	DENCA	Open Architectural; Historic, Isolated Find		FND
5MN4702	West End	Open Architectural	Martin's Knob	FE
5MN4710	West End	Open Camp; Historic, Isolated Find		OE
5MN4748	West End	Open Camp; Historic, Transmission Line		OE
5MN475	DENCA	Open Architectural		FE
5MN4761	Uncompahgre	Open Camp; Rock Art; Historic, Trash Dump		FND
5MN4871	Uncompahgre	Open Architectural		OE
5MN4903	Uncompahgre	Open Architectural		FE
5MN4928	West End	Open Camp		OE
5MN4948	Uncompahgre	Rock Art		FE
5MN498	West End	Rock Art; Sheltered Lithic		FE
5MN4995	Uncompahgre	Open Camp	Hauptmann Site	FE
5MN5069	West End	Historic, Mine	Wildcat No. 8 Mine	OE
5MN5110	Uncompahgre	Rock Art; Historic, Inscription	Roubideau Canyon Rock Art Gallery	FE
5MN5134	West End	Open Camp, Rock Art		OE
5MN5136	West End	Sheltered Camp		OE
5MN5137	West End	Open Camp		OE
5MN5142	West End	Open Camp		OND
5MN5146	West End	Open Camp		OE
5MN5148	West End	Sheltered Camp		OE
5MN5153	West End	Historic, Mining Complex	Long Park Townsite	OE
5MN5159	West End	Open Camp		OE
5MN5169	West End	Open Lithic		OE
5MN517	West End	Open Architectural	Hill I	OE
5MN5170	West End	Open Camp		OE
5MN5171	West End	Open Lithic		OE
5MN5177	West End	Open Architectural		OE
5MN5181	West End	Open Camp		OE
5MN5198	West End	Open Camp		OE
5MN5217	West End	Open Camp		OE
5MN523	West End	Open Camp		OE
5MN5231	West End	Open Lithic		OE
5MN5254	West End	Open Camp		OE
5MN5261	West End	Open Camp; Historic, Isolated Feature		OE

Appendix Table 1. Uncompahgre Field Office: Sites Classified for Scientific Use.

Site Number	Landscape Unit	Site Type	Site Name	NRHP Status
5MN5262	West End	Open Camp		OE
5MN5467	Ouray	Open Camp		OE
5MN5473	West End	Isolated Feature		OE
5MN5475	West End	Open Camp		OE
5MN5529	West End	Open Camp		OE
5MN5545	West End	Open Camp		OE
5MN5613	Ouray	Open Camp		OE
5MN5656	West End	Open Camp		OE
5MN5660	West End	Open Camp; Historic, Camp		OE
5MN5690	DENCA	Open Camp		OE
5MN5725	Uncompahgre	Open Camp		OE
5MN576	Uncompahgre	Open Lithic		FE
5MN5796	West End	Open Camp; Historic, Homestead		OE
5MN5801	West End	Open Camp		OE
5MN5844	Uncompahgre	Open Camp		OE
5MN585	DENCA	Open Lithic		FE
5MN590	Uncompahgre	Rock Art		FE
5MN591	Uncompahgre	Sheltered Architectural		FE
5MN592	DENCA	Open Lithic		FE
5MN593	Uncompahgre	Open Lithic		FE
5MN595	DENCA	Open Camp; Historic, Camp?		FE
5MN596	DENCA	Lithic Quarry		FE
5MN5970	West End	Open Architectural		OE
5MN5971	West End	Open Camp		OE
5MN5980	Uncompahgre	Open Camp		FE
5MN5995	West End	Open Camp		OE
5MN5998	West End	Open Camp		OE
5MN6000	West End	Open Camp		OE
5MN6114	West End	Open Camp		OE
5MN6116	West End	Open Camp		OE
5MN6117	West End	Open Camp		OE
5MN6118	West End	Open Camp		OE
5MN615	West End	Sheltered Camp		OE
5MN618	West End	Open Camp; Historic, Fence		OE
5MN621	West End	Sheltered Camp; Rock Art		FND
5MN6230	West End	Open Camp		OE
5MN6265	West End	Sheltered Camp		OE
5MN6295	West End	Open Camp		OE

Appendix Table 1. Uncompahgre Field Office: Sites Classified for Scientific Use.

Site Number	Landscape Unit	Site Type	Site Name	NRHP Status
5MN6298	West End	Open Camp		OE
5MN64	Uncompahgre	Rock Art	Cushman Creek Picture Rock Site	FND
5MN6446	West End	Open Lithic	Mad Cow Site	OE
5MN6456	West End	Historic, Mining Complex	Blue Cap and Black Hat Mines	OE
5MN6476	West End	Open Lithic		OE
5MN6480	West End	Open Camp; Historic, Trash Dump		OE
5MN6484	West End	Open Camp		OE
5MN6487	West End	Open Camp		OE
5MN6489	West End	Open Camp		OE
5MN6491	West End	Open Architectural		OE
5MN65	Uncompahgre	Open Architectural	Monitor Mesa Wickiup Site (Number 2 of 3)	NA
5MN6500	Uncompahgre	Open Lithic		OE
5MN6501	Uncompahgre	Open Camp		OE
5MN6502	Uncompahgre	Open Camp		OE
5MN6503	Uncompahgre	Open Lithic		OE
5MN6506	West End	Open Camp		OE
5MN6513	West End	Open Camp		OE
5MN6515	West End	Open Camp		OE
5MN653	West End	Open Architectural	Wagon Bend	OE
5MN654	West End	Open Architectural; Rock Art; Historic, Trash Scatter	Cottonwood Pueblo	OE
5MN6604	Uncompahgre	Open Lithic		OE
5MN6605	Uncompahgre	Open Lithic		OE
5MN6606	Uncompahgre	Open Camp		OE
5MN6607	Uncompahgre	Open Lithic		OE
5MN6608	Uncompahgre	Open Camp		OE
5MN6627	Uncompahgre	Historic, Homestead		OE
5MN6628	Uncompahgre	Open Lithic		OE
5MN6629	Uncompahgre	Open Lithic		OE
5MN6630	Uncompahgre	Open Lithic		OE
5MN6652	Uncompahgre	Open Camp		OE
5MN6653	Uncompahgre	Open Camp		OE
5MN6666	Uncompahgre	Open Camp, Burial	The Happy Canyon Site	OE
5MN667	Uncompahgre	Open Lithic		FE
5MN6671	Uncompahgre	Open Camp; Historic, Sheep Camp		OE
5MN676	Uncompahgre	Open Camp		FE
5MN682	Ouray	Open Lithic; Historic, Brush Enclosure		FE

Appendix Table 1. Uncompahgre Field Office: Sites Classified for Scientific Use.

Site Number	Landscape Unit	Site Type	Site Name	NRHP Status
5MN6853	West End	Open Architectural		OE
5MN6854	West End	Open Camp		OE
5MN6856	West End	Open Camp		OE
5MN6857	West End	Open Camp		OE
5MN6870	West End	Open Camp		OE
5MN6875	West End	Open Camp		OE
5MN6876	West End	Open Camp		OE
5MN6877	West End	Open Architectural		OE
5MN6920	West End	Open Architectural		OE
5MN6921	West End	Open Architectural?		OE
5MN6925	West End	Open Camp		OE
5MN6930	West End	Open Camp		OE
5MN6931	West End	Open Camp		OE
5MN6936	West End	Open Camp		OE
5MN6979	West End	Open Camp		OE
5MN698	Uncompahgre	Open Lithic		FE
5MN6981	West End	Open Architectural		OE
5MN6986	West End	Open Camp		OE
5MN7004	West End	Open Camp		OE
5MN7026	West End	Open Architectural		OE
5MN7027	West End	Open Architectural		OE
5MN7057	Uncompahgre	Open Camp		OE
5MN7058	Uncompahgre	Open Camp; Historic Trash Scatter		OE
5MN7059	Uncompahgre	Open Camp; Historic, Isolated Find		OE
5MN715	Uncompahgre	Open Lithic		FE
5MN716	Uncompahgre	Open Lithic		FE
5MN7166	Uncompahgre	Open Camp		OE
5MN717	Uncompahgre	Open Lithic		FE
5MN718	Uncompahgre	Open Lithic		FE
5MN719	Uncompahgre	Open Camp		OE
5MN7198	West End	Open Architectural	Garvey #3 Site	FE
5MN723	Uncompahgre	Open Lithic		FE
5MN724	Uncompahgre	Open Lithic		FE
5MN7249	Uncompahgre	Open Camp; Historic, Sheep Camp		OE
5MN726	Uncompahgre	Open Lithic		FE
5MN7409	Uncompahgre	Open Camp		OE
5MN7410	Uncompahgre	Open Camp; Historic, Isolated Find		OE
5MN7412	Uncompahgre	Open Camp		OE

Appendix Table 1. Uncompahgre Field Office: Sites Classified for Scientific Use.

Site Number	Landscape Unit	Site Type	Site Name	NRHP Status
5MN7417	Uncompahgre	Open Camp		OE
5MN7418	Uncompahgre	Open Camp		OE
5MN7419	Uncompahgre	Open Camp		OE
5MN7430	Uncompahgre	Open Camp		FE
5MN7434	Uncompahgre	Open Lithic		FE
5MN7575	Uncompahgre	Open Lithic		OE
5MN7578	Uncompahgre	Open Camp		OE
5MN7579	Uncompahgre	Open Architectural		OE
5MN7580	Uncompahgre	Open Camp		OE
5MN7581	Uncompahgre	Open Camp		OE
5MN7593	Uncompahgre	Open Camp		OE
5MN7596	Uncompahgre	Open Camp		OE
5MN7598	Uncompahgre	Open Camp		OE
5MN7599	Uncompahgre	Open Camp; Historic, Trash Scatter		OE
5MN7604	Uncompahgre	Open Camp		OE
5MN7605	Uncompahgre	Open Camp		OE
5MN7607	Uncompahgre	Open Architectural, Lithic Quarry; Historic, Sheep Camp	Silcrete Campsite	OE
5MN7611	Uncompahgre	Open Lithic; Rock Art		OE
5MN7659	Uncompahgre	Open Camp		OE
5MN7660	Uncompahgre	Open Camp		OE
5MN7661	Uncompahgre	Open Camp; Historic, Isolated Find		OE
5MN7662	Uncompahgre	Open Lithic		OE
5MN77	West End	Open Camp		OE
5MN7787	West End	Historic, Powder House		OE
5MN7845	West End	Historic, Mining Complex	Blackfoot Mine: South Tunnel	OE
5MN7846	West End	Historic, Mining Complex		OE
5MN7847	West End	Historic, Mining Complex	Outlaw Camp	OE
5MN7860	West End	Historic, Mining Complex	Strategic Minerals Mine	OE
5MN7864	West End	Historic, Mining Complex	Sun Down Mine	OE
5MN7865	West End	Historic, Mining Complex	Sun Down Mine Air Shaft	OE
5MN7866	West End	Historic, Mining Complex	Hidden Basin Mine	OE
5MN7877	West End	Open Lithic		OE
5MN7879	West End	Open Camp		OE
5MN7881	West End	Open Lithic		OE
5MN7892	Uncompahgre	Open Camp		FE
5MN7895	Uncompahgre	Open Camp		FE
5MN8049/5SM57	West End	Open Architectural; Historic, Trash Scatter	The Rim Rock Ruin	OE

Appendix Table 1. Uncompahgre Field Office: Sites Classified for Scientific Use.

Site Number	Landscape Unit	Site Type	Site Name	NRHP Status
5MN8055/5SM5319	West End	Open Lithic; Historic Trash Scatter		FE
5MN8056/5SM5320	West End	Open Lithic		FE
5MN806	West End	Rock Art		FE
5MN81	West End	Sheltered Camp		OE
5MN8129	West End	Historic, Mining Complex	Margie Mine	FE
5MN8131	West End	Historic, Mining Complex	Raven Mine	FE
5MN8134	West End	Historic, Mining Complex	Lazy L Mine	FE
5MN8137	West End	Historic, Mining Complex	Tramp Mine	FE
5MN8138	West End	Historic, Mining Camp	Wilson's Camp: Upper Residences	FE
5MN8143	West End	Historic, Mine	Vanadate Mine	FE
5MN8144	West End	Historic, Mining Camp	Radium Luminous Camp	FE
5MN8145	West End	Historic, Mining Complex	Long Park No.1 Mine	FE
5MN8147	West End	Historic, Mining Camp	Republican Camp	FE
5MN8148	West End	Historic, Mining Camp	Hart Camp	FE
5MN8154	West End	Historic, Mine	Van Mine: East Workings	FE
5MN8156	West End	Historic, Mining Complex	Mary Ann Mine	FE
5MN8157	West End	Historic, Mining Complex	Uranus Mine	FE
5MN8158	West End	Historic, Mining Camp	Davis Mesa Camp	FE
5MN8171	West End	Historic, Mining Complex	Cripple Creek Mine, Lower Shaft	FE
5MN8172	West End	Historic, Mine		FE
5MN8174	West End	Historic, Mining Camp	Bitter Creek Camp: Prospectors' Camp	FE
5MN8175	West End	Historic, Mining Camp	Bitter Creek Camp	FE
5MN82	West End	Sheltered Camp		OE
5MN8222	West End	Cambium Tree		Staff - OE
5MN8238	West End	Open Camp; Historic, Homestead		OE
5MN8247	West End	Open Architectural		OE
5MN8266	West End	Historic, Mining Equipment		FE
5MN8268	West End	Historic, Mining Camp	Wilson's Camp: Lower Residences	FE
5MN83	West End	Sheltered Camp; Historic, Homestead		FE
5MN8318	West End	Lithic Scatter		FE
5MN8319	West End	Temporary Camp		FE
5MN8324	West End	Temporary Camp		FE
5MN8333	West End	Lithic Scatter		FE
5MN8335/5SM5736	West End	Open Camp		FE
5MN8379	West End	Sheltered Camp		OE

Appendix Table 1. Uncompahgre Field Office: Sites Classified for Scientific Use.

Site Number	Landscape Unit	Site Type	Site Name	NRHP Status
5MN8380	West End	Open Lithic		OE
5MN84	West End	Sheltered Camp		OE
5MN8425	West End	Open Camp		OE
5MN8432	West End	Open Architectural		FE
5MN8434	West End	Open Architectural		FE
5MN8445	West End	Open Camp		OE
5MN8455	West End	Open Lithic		OE
5MN8472	Ouray	Open Lithic; Historic, Camp		OE
5MN85	West End	Sheltered Camp		OE
5MN8517	West End	Open Architectural		OE
5MN860	DENCA	Rock Art		NA
5MN863	Uncompahgre	Sheltered Camp	Moore Site	FE
5MN8761	West End	Open Camp		OE
5MN8771	West End	Isolated Find; Historic, Mining Camp	Redrock No. 5 Mine	OE
5MN8774	West End	Traditional Cultural Property; Open Lithic		OE
5MN890	West End	Sheltered Architectural	Tabeguache Cave II	LSR>FE
5MN9	Uncompahgre	Sheltered Camp		FE
5MN915	West End	Sheltered Camp	Dolores Cave	LSR>OE
5MN9237	West End	Uranium Mine	Vanadium King No. 5 Mine	FE
5OR1059	Ouray	Historic, Mine Complex	Slide Mine and Access Road	FE
5OR1442	Uncompahgre	Open Camp		OE
5OR1497	Uncompahgre	Historic, Sweat Lodge		OE
5OR1555	Uncompahgre	Open Camp; Historic, Camp Complex		OE
5OR1955	Uncompahgre	Open Camp; Historic, Sheep Camp		OE
5OR1958	Ouray	Open Camp		OE
5OR1960	Uncompahgre	Open Lithic		OE
5OR1961	Uncompahgre	Open Lithic		OE
5OR1962	Uncompahgre	Open Lithic		OE
5OR1964	Uncompahgre	Open Camp		OE
5OR1967	Uncompahgre	Open Lithic		OE
5OR1970	Uncompahgre	Open Camp		OE
5OR56	Ouray	Open Camp		OE
5SM1113	West End	Open Architectural		OE
5SM1437	West End	Open Lithic		OE
5SM1452	West End	Open Camp, Cambium Tree; Historic, Corral		OE
5SM1456	West End	Open Camp		OE
5SM1953	West End	Open Architectural		OE

Appendix Table 1. Uncompahgre Field Office: Sites Classified for Scientific Use.

Site Number	Landscape Unit	Site Type	Site Name	NRHP Status
5SM1954	West End	Open Camp		OE
5SM202	West End	Open Camp		OE
5SM2059	West End	Open Lithic		OE
5SM213	West End	Open Camp		OE
5SM232	West End	Open Camp		FE
5SM2416	West End	Sheltered Camp; Historic, Homestead		OE
5SM2596	West End	Historic, Habitation	Primos No.1 Mill Site House	OE
5SM2654	West End	Open Camp		OE
5SM2659	West End	Open Camp; Historic, Isolated Feature		OE
5SM2720	West End	Open Camp		OE
5SM2721	West End	Open Architectural?		OE
5SM3230	West End	Open Camp		OE
5SM3416	West End	Open Camp		OE
5SM3482	West End	Open Lithic		OE
5SM3497	West End	Open Camp		FE
5SM350	West End	Open Camp; Historic, Isolated Feature		OE
5SM352	West End	Sheltered Camp		OE
5SM3618	West End	Open Camp		OE
5SM363	West End	Sheltered Camp		FE
5SM3870	West End	Open Architectural		FE
5SM3965	West End	Open Camp		OE
5SM3973	West End	Open Camp; Historic, Trash Dump		OE
5SM3974	West End	Open Camp		OE
5SM3975	West End	Open Architectural		OE
5SM4085	West End	Open Camp		OE
5SM4088	West End	Open Camp		OE
5SM4121	West End	Open Camp		OE
5SM4122	West End	Open Camp; Historic, Isolated Find		OE
5SM4124	West End	Sheltered Camp?; Historic, Isolated Find		OE
5SM4125	West End	Open Camp		OE
5SM4129	West End	Open Camp		OE
5SM4131	West End	Open Camp; Historic, Camp		OE
5SM4187	West End	Open Lithic		FE
5SM4341	West End	Open Camp?		OE
5SM4342	West End	Open Camp		OE
5SM4348	West End	Open Architectural		OE
5SM488	West End	Open Lithic		OE

Appendix Table 1. Uncompahgre Field Office: Sites Classified for Scientific Use.

Site Number	Landscape Unit	Site Type	Site Name	NRHP Status
5SM491	West End	Open Camp; Historic, Trash Dump		OE
5SM493	West End	Open Camp; Historic, Habitation?		OE
5SM522	West End	Open Camp		OE
5SM523	West End	Open Camp		OE
5SM5420	West End	Lithic Scatter		FE
5SM5449	West End	Historic Ute Camp		FE
5SM545	West End	Open Camp		OE
5SM5457	West End	Lithic Scatter		FE
5SM546	West End	Open Architectural?, Historic, Isolated Find		OE
5SM655	West End	Open Camp		OE
5SM6682	West End	Lithic scatter and possible TCP	Nucla Cahone Lithic Scatter #7	FE

Appendix Table 2. Uncompahgre Field Office: Sites Classified for Conservation Use.

Site Number	Landscape Unit	Site Type	Site Name	NRHP Status
5DT10	DENCA	Open Architectural		FE
5DT214	DENCA	Open Architectural		OE
5DT57	DENCA	Open Architectural		FE
5DT945	Uncompahgre	Open Architectural	Wells Gulch Site	OE
5ME12290	DENCA	Open Architectural		OE
5ME14256	DENCA	Open Architectural		OE
5ME14257	DENCA	Open Camp; Burial?		OE
5ME14258	DENCA	Open Architectural	Coyote Skull Wickiup Village	OE
5ME14260	DENCA	Open Architectural	Brush Corral Wickiup Village	OE
5ME15280	DENCA	Open Architectural		OE
5ME15281	DENCA	Open Architectural		OE
5ME15282	DENCA	Open Architectural		OE
5ME15283	DENCA	Open Architectural; Historic, Camp	Hook and Bead Wickiup Site	OE
5ME15284	DENCA	Open Architectural		OE
5ME469	DENCA	Open Architectural		FE
5ME552	DENCA	Open Architectural		FE
5ME7378	DENCA	Open Architectural		FE
5MN1141	West End	Sheltered Architectural		FE
5MN1213	DENCA	Sheltered Architectural		FE
5MN1262	West End	Historic, Sweat Lodge		OE
5MN1402	Uncompahgre	Open Architectural	Serings Hunting Blind	FE

Appendix Table 2. Uncompahgre Field Office: Sites Classified for Conservation Use.

Site Number	Landscape Unit	Site Type	Site Name	NRHP Status
5MN1609	West End	Open Architectural	Tabeguache Pueblo	LSR>FE
5MN2221	West End	Sheltered Architectural	Falcon Crest Shelter	FE
5MN2224	West End	Open Architectural		FE
5MN23	Uncompahgre	Sheltered Camp; Burial	Spring Creek Burials	FE
5MN2416	Uncompahgre	Open Architectural		OE
5MN3036	West End	Open Architectural		OE
5MN3485	West End	Historic, Structure		OE
5MN3612	West End	Open Architectural; Historic, Corral		OND
5MN363	West End	Sheltered Architectural		OE
5MN3672	West End	Open Lithic; Burial		OND
5MN4349	DENCA	Open Architectural		FE
5MN44	Uncompahgre	Open Architectural	Monitor Mesa Wickiup - Main Site (Number 1 of 3)	NA
5MN4498	DENCA	Open Architectural?		FE
5MN4499	DENCA	Open Architectural		FND
5MN4680	DENCA	Open Architectural; Historic, Isolated Find		FND
5MN4702	West End	Open Architectural	Martin's Knob	FE
5MN475	DENCA	Open Architectural		FE
5MN4871	Uncompahgre	Open Architectural		OE
5MN4903	Uncompahgre	Open Architectural	Ute Wickiup Camp	FE
5MN517	West End	Open Architectural	Hill I	OE
5MN5177	West End	Open Architectural		OE
5MN5796	West End	Open Camp; Historic, Homestead		OE
5MN591	Uncompahgre	Sheltered Architectural		FE
5MN5970	West End	Open Architectural		OE
5MN6491	West End	Open Architectural		OE
5MN65	Uncompahgre	Open Architectural	Monitor Mesa Wickiup - Main Site (Number 2 of 3)	NA
5MN653	West End	Open Architectural	Wagon Bend	OE
5MN654	West End	Open Architectural; Rock Art; Historic, Trash Scatter	Cottonwood Pueblo	OE
5MN6666	Uncompahgre	Open Camp, Burial	The Happy Canyon Site	OE
5MN6853	West End	Open Architectural		OE
5MN6920	West End	Open Architectural		OE
5MN7026	West End	Open Architectural		OE
5MN7027	West End	Open Architectural		OE
5MN7198	West End	Open Architectural	Garvey #3 Site	FE

Appendix Table 2. Uncompahgre Field Office: Sites Classified for Conservation Use.

Site Number	Landscape Unit	Site Type	Site Name	NRHP Status
5MN7579	Uncompahgre	Open Architectural		OE
5MN7607	Uncompahgre	Open Architectural, Lithic Quarry; Historic, Sheep Camp	Silcrete Campsite	OE
5MN8049/5SM57	West End	Open Architectural; Historic, Trash Scatter	The Rim Rock Ruin on Naturita Creek	OE
5MN8247	West End	Open Architectural		OE
5MN8432	West End	Open Architectural		FE
5MN8434	West End	Open Architectural		FE
5MN8517	West End	Open Architectural		OE
5MN8774	West End	Traditional Cultural Property; Open Lithic		OE
5MN890	West End	Sheltered Architectural	Tabeguache Cave II	LSR>FE
5OR1497	Uncompahgre	Historic, Sweat Lodge		OE
5SM1953	West End	Open Architectural		OE
5SM2721	West End	Open Architectural?		OE
5SM3870	West End	Open Architectural		FE
5SM3975	West End	Open Architectural		OE
5SM4348	West End	Open Architectural		OE
5SM546	West End	Open Architectural?, Historic, Isolated Find		OE

Appendix Table 3. Uncompahgre Field Office: Sites Classified for Traditional Use.

Site Number	Landscape Unit	Site Type	Site Name	NRHP Status
5DT1	DENCA	Rock Art; historic, Rock Art	Dry Forks Petroglyph	NA
5DT113	DENCA	Rock Art		FND
5DT114	DENCA	Rock Art		NA
5DT1690	DENCA	Rock Art		FE
5DT1691	DENCA	Rock Art		FE
5DT1692	DENCA	Rock Art		FE
5DT1693	DENCA	Rock Art		FE
5DT1694	DENCA	Rock Art		FE
5DT318	DENCA	Open camp, Rock Art; Historic Rock Art		NA
5DT4	DENCA	Rock Art; Open Lithic	Musser Petroglyph site, Escalante Crossing Petroglyph site	OE
5DT53	DENCA	Rock Art	Petroglyphs in Leonard's Basin	FE
5DT54	DENCA	Open Lithic; Rock Art		FE
5DT6	DENCA	Sheltered Camp; Rock Art		OE

Appendix Table 3. Uncompahgre Field Office: Sites Classified for Traditional Use.

Site Number	Landscape Unit	Site Type	Site Name	NRHP Status
5DT64	DENCA	Rock Art; Historic, Rock Art		FE
5DT68	DENCA	Sheltered Lithic; Rock Art		FE
5DT759	DENCA	Rock Art		NA
5DT761	DENCA	Rock Art		FE
5ME12290	DENCA	Open Architectural		OE>FE>FE
5ME14256	DENCA	Open Architectural		OE
5ME14257	DENCA	Open Camp; Burial?		OE
5ME14258	DENCA	Open Architectural	Coyote Skull Wickiup Village	OE
5ME14260	DENCA	Open Architectural	Brush Corral Wickiup Village	OE
5ME15279	DENCA	Rock Art, Open Lithic		OE
5ME15280	DENCA	Open Architectural		OE
5ME15281	DENCA	Open Architectural		OE
5ME15282	DENCA	Open Architectural		OE
5ME15283	DENCA	Open Architectural; Historic, Camp	Hook and Bead Wickiup site	OE
5ME15284	DENCA	Open Architectural		OE
5ME469	DENCA	Open Architectural		FE
5ME552	DENCA	Open Architectural		FE
5ME7378	DENCA	Open Architectural		FE
5MN1034	West End	Rock Art; Sheltered Camp	Paradox Valley Petroglyphs	FE
5MN1153	West End	Open Camp; Historic, Sweat Lodge		FND
5MN1186	West End	Sheltered Camp; Rock Art		FND
5MN1192	West End	Rock Art; Historic, Isolated Feature		OE
5MN1215	Uncompahgre	Rock Art; Sheltered Lithic; Historic, Isolated Feature	John Davis site	FND
5MN1262	West End	Historic, Sweat Lodge		OE
5MN14	Uncompahgre	Sheltered Camp; Rock Art	Carlyle Shelter	OE
5MN1958	Uncompahgre	Sheltered Camp; Rock Art		FE
5MN2	Uncompahgre	Sheltered Camp; Rock Art	Hauser site	FND
5MN220	West End	Open Lithic; Rock Art		FND
5MN23	Uncompahgre	Sheltered Camp; Burial	Spring Creek Burials	FE
5MN2341	Uncompahgre	Sheltered Camp; Rock Art	Harris site	FE
5MN2954	Uncompahgre	Rock Art	Windy Point Panel	FE
5MN30	Uncompahgre	Sheltered Camp; Rock Art	Monte's Shelter	FND
5MN3450	Uncompahgre	Rock Art	Roatcap Gulch Panel	FE
5MN3451	Uncompahgre	Sheltered Camp, Rock Art; Historic, Isolated Feature	Shrine site	FND

Appendix Table 3. Uncompahgre Field Office: Sites Classified for Traditional Use.

Site Number	Landscape Unit	Site Type	Site Name	NRHP Status
5MN3485	West End	Historic, Structure		OE
5MN3612	West End	Open Architectural; Historic, Corral		OND
5MN365	West End	Sheltered Camp; Historic, Sheltered Camp	The Twin Rocks	FE
5MN3672	West End	Open Lithic; Burial		OND
5MN388	West End	Sheltered Camp, Rock Art		FE
5MN4032	Uncompahgre	Sheltered Camp; Historic, Rock Art, Trash Dump		FND
5MN4349	DENCA	Open Architectural		FE
5MN439	West End	Rock Art, Sheltered Lithic?	Dolores Petroglyphs	FE
5MN44	Uncompahgre	Open Architectural	Monitor Mesa Wickiup – main site (number 1 of 3)	NA
5MN440	West End	Rock Art; Open Camp		NA
5MN443	West End	Rock Art; Sheltered Lithic		FE
5MN4498	DENCA	Open Architectural?		FE
5MN4499	DENCA	Open Architectural		FND
5MN4671	West End	Rock Art		FE
5MN4680	DENCA	Open Architectural; Historic, Isolated Find		FND
5MN475	DENCA	Open Architectural		FE
5MN4761	Uncompahgre	Open Camp; Rock Art; Historic, Trash Dump		FND
5MN4903	Uncompahgre	Open Architectural		FE
5MN4948	Uncompahgre	Rock Art		FE
5MN498	West End	Rock Art; Sheltered Lithic		FE
5MN5110	Uncompahgre	Rock Art; Historic, Inscription	Roubideau Canyon Rock Art Gallery	FE
5MN5134	West End	Open Camp, Rock Art		OE
5MN5142	West End	Open Camp		OND
5MN5796	West End	Open Camp; Historic, Homestead		OE
5MN590	Uncompahgre	Rock Art		FE
5MN621	West End	Sheltered Camp; Rock Art		FND
5MN64	Uncompahgre	Rock Art	Cushman Creek Picture Rock site	FND
5MN65	Uncompahgre	Open Architectural	Monitor Mesa Wickiup site (number 2 of 3)	NA
5MN6666	Uncompahgre	Open Camp, Burial	Happy Canyon site	OE
5MN6920	West End	Open Architectural		OE
5MN7027	West End	Open Architectural		OE
5MN7579	Uncompahgre	Open Architectural		OE
5MN7611	Uncompahgre	Open Lithic; Rock Art		OE

Appendix Table 3. Uncompahgre Field Office: Sites Classified for Traditional Use.

Site Number	Landscape Unit	Site Type	Site Name	NRHP Status
5MN806	West End	Rock Art		FE
5MN8222	West End	Cambium Tree		Staff - OE
5MN8247	West End	Open Architectural		OE
5MN8517	West End	Open Architectural		OE
5MN860	DENCA	Rock Art		NA
5MN863	Uncompahgre	Sheltered Camp	Moore site	FE
5MN8774	West End	Traditional Cultural Property; Open Lithic		OE
5MN9	Uncompahgre	Sheltered Camp		FE
5OR1497	Uncompahgre	Historic, Sweat Lodge		OE
5SM1452	West End	Open Camp, Cambium Tree; Historic, Corral		OE
5SM4348	West End	Open Architectural		OE

Appendix Table 4. Uncompahgre Field Office: Sites Classified for Public Use.

Site Number	Landscape Unit	Site Type	Site Name	NRHP Status
5DT1	DENCA	Rock Art; Historic, Rock Art	Dry Forks Petroglyph	NA
5DT10	DENCA	Open Architectural		FE
5DT1690	DENCA	Rock Art		FE
5DT1691	DENCA	Rock Art		FE
5DT1692	DENCA	Rock Art		FE
5DT1693	DENCA	Rock Art		FE
5DT1694	DENCA	Rock Art		FE
5DT113	DENCA	Rock Art		FND
5DT114	DENCA	Rock Art		NA
5DT214	DENCA	Open Architectural		OE
5MN3451	Uncompahgre	Sheltered Camp, Rock Art; Historic, Isolated Feature	Shrine Site	FND
5DT945	Uncompahgre	Open Architectural	Wells Gulch Site	OE
5DT68	DENCA	Sheltered Lithic; Rock Art		FE
5MN3450	Uncompahgre	Rock Art	Roatcap Gulch Panel	FE
5DT318	DENCA	Open Camp, Rock Art; Historic, Rock Art		NA
5DT4	DENCA	Rock Art; Open Lithic	Musser Petroglyph Site>Escalante Crossing Petroglyph Site	OE
5DT53	DENCA	Rock Art	Petroglyphs in Leonard's Basin	FE
5DT54	DENCA	Open Lithic; Rock Art		FE
5DT57	DENCA	Open Architectural		FE
5DT6	DENCA	Sheltered Camp; Rock Art		OE
5DT64	DENCA	Rock Art; Historic, Rock Art		FE
5DT759	DENCA	Rock Art		NA
5DT761	DENCA	Rock Art		FE

Appendix Table 4. Uncompahgre Field Office: Sites Classified for Public Use.

Site Number	Landscape Unit	Site Type	Site Name	NRHP Status
5DT854.1	Uncompahgre	Historic, Trail	Old Spanish Trail (North Branch)~Salt Lake Wagon Road (Segment)	OE
5DT854.2	Uncompahgre	Historic, Trail	Old Spanish Trail (North Branch)~Salt Lake Wagon Road (Segment)	Noncontrib. to Officially elig. dist.
5DT854.4	Uncompahgre	Historic, Trail	Old Spanish Trail (North Branch)~Salt Lake Wagon Road (Segment)	OE
5DT854.5	Uncompahgre	Historic, Trail	Old Spanish Trail (North Branch)~Salt Lake Wagon Road (Segment)	OE
5MN2	Uncompahgre	Sheltered Camp; Rock Art	Hauser Site	FND
5ME15279	DENCA	Rock Art, Open Lithic		OE
5MN1034	West End	Rock Art; Sheltered Camp	Paradox Valley Petroglyphs	FE
5MN1141	West End	Sheltered Architectural		FE
5MN1186	West End	Sheltered Camp; Rock Art		FND
5MN1192	West End	Rock Art; Historic, Isolated Feature		OE
5MN1213	DENCA	Sheltered Architectural		FE
5MN1215	Uncompahgre	Rock Art; Sheltered Lithic; Historic, Isolated Feature	John Davis Site	FND
5MN14	Uncompahgre	Sheltered Camp; Rock Art	CarlyleShelter	OE
5MN1402	Uncompahgre	Open Architectural	Serings Hunting BLine	FE
5MN1609	West End	Open Architectural	Tabeguache Pueblo	LSR>FE
5MN1837	Ouray	Gunnison Tunnel	Gunnison Tunnel	LNR
5MN1840	West End	Historic, Flume	Hanging Flume	LNR Multiple Resource Component
5MN1958	Uncompahgre	Sheltered Camp; Rock Art		FE
5MN220	West End	Open Lithic; Rock Art		FND
5MN2341	Uncompahgre	Sheltered Camp; Rock Art	Harris Site	FE
5MN2221	West End	Sheltered Architectural	Falcon Crest Shelter	FE
5MN2224	West End	Open Architectural		FE
5MN2416	Uncompahgre	Open Architectural		OE
5MN30	Uncompahgre	Sheltered Camp; Rock Art	Monte's Shelter	FND
5MN2954	Uncompahgre	Rock Art	Windy Point Panel	FE
5MN2991.1	Uncompahgre	Historic, Wagon Road	Montrose and Old Paradox Road (Segment)	OE
5MN439	West End	Rock Art, Sheltered Lithic?	Dolores Petroglyphs	FE
5MN3036	West End	Open Architectural		OE
5MN498	West End	Rock Art; Sheltered Lithic		FE
5MN363	West End	Sheltered Architectural		OE
5MN365	West End	Sheltered Camp; Historic, Sheltered Camp	The Twin Rocks	FE
5MN4032	Uncompahgre	Sheltered Camp; Historic, Rock Art, Trash Dump		FND
5MN388	West End	Sheltered Camp, Rock Art		FE

Appendix Table 4. Uncompahgre Field Office: Sites Classified for Public Use.

Site Number	Landscape Unit	Site Type	Site Name	NRHP Status
5MN4477	West End	Historic, Mining Complex	Sunbeam Mine~Stone Building at Sunbeam Mine	OE
5MN5153	West End	Historic, Mining Complex	Long Park Townsite	OE
5MN5110	Uncompahgre	Rock Art; Historic, INSCRIPTION	Roubideau Rock Art Gallery	FE
5MN5134	West End	Open Camp, Rock Art		OE
5MN4396	West End	Historic, Bridge	San Miguel Bridge at Uravan	Review Board Recommendation for Listing>OE
5MN440	West End	Rock Art; Open Camp		NA
5MN443	West End	Rock Art; Sheltered Lithic		FE
5MN4480	West End	Historic, Mining Complex	Wedge No. 2 Mine	OE
5MN4482	West End	Historic, Mining Complex	Rex No. 38 Mine~Rex 36 Mine	OE
5MN4483	West End	Historic, Mining Complex	Joe Dandy #5	OE
5MN4671	West End	Rock Art	Rock Art	FE
5MN4702	West End	Open Architectural	Martin's Knob	FE
5MN4761	Uncompahgre	Open Camp; Rock Art; Historic, Trash Dump		FND
5MN4871	Uncompahgre	Open Architectural		OE
5MN4948	Uncompahgre	Rock Art		FE
5MN5069	West End	Historic, Mine	Wildcat No. 8 Mine	OE
5MN517	West End	Open Architectural	Hill I	OE
5MN5177	West End	Open Architectural		OE
5MN6456	West End	Historic, Mining Complex	Blue Cap and Black Hat Mines	OE
5MN590	Uncompahgre	Rock Art		FE
5MN591	Uncompahgre	Sheltered Architectural		FE
5MN5970	West End	Open Architectural		OE
5MN6148	West End	Historic, Tramway	Clay Creek Tramwa	OE
5MN621	West End	Sheltered Camp; Rock Art		FND
5MN64	Uncompahgre	Rock Art	Cushman Creek Picture Rock Site	FND
5MN653	West End	Open Architectural	Wagon Bend	OE
5MN654	West End	Open Architectural; Rock Art; Historic, Trash Scatter	Cottonwood Pueblo	OE
5MN6491	West End	Open Architectural		OE
5MN7198	West End	Open Architectural	Garvey #3 Site	FE
5MN6853	West End	Open Architectural		OE
5SM3870	West End	Open Architectural		FE
5SM2847	West End	Historic, Tramway	Fall Creek Tram at Primos Siding	LSR>FE
5MN8771	West End	Isolated Find; Historic, Mining Camp	RedRock NO. 5 Mine	OE
5MN7026	West End	Open Architectural		OE
5MN7611	Uncompahgre	Open Lithic; Rock Art		OE
5MN7845	West End	Historic, Mining Complex	Blackfoot Mine: South Tunnel	OE
5MN7846	West End	Historic, Mining Complex		OE
5MN7847	West End	Historic, Mining Complex	Outlaw Camp	OE
5MN7860	West End	Historic, Mining Complex	Strategic Minerals Mine	OE

Appendix Table 4. Uncompahgre Field Office: Sites Classified for Public Use.

Site Number	Landscape Unit	Site Type	Site Name	NRHP Status
5MN7864	West End	Historic, Mining Complex	Sun Down Mine	OE
5MN7865	West End	Historic, Mining Complex	Sun Down Mine Air Shaft	OE
5MN7866	West End	Historic, Mining Complex	Hidden Basin Mine	OE
5MN8049/5SM 57	West End	Open Architectural; Historic, Trash Scatter	The Rim Rock Ruin on Naturita Creek	OE
5MN806	West End	Rock Art		FE
5MN8129	West End	Historic, Mining Complex	Margie Mine	FE
5MN8131	West End	Historic, Mining Complex	Raven Mine	FE
5MN8134	West End	Historic, Mining Complex	Lazy L Mine	FE
5MN8137	West End	Historic, Mining Complex	Tramp Mine	FE
5MN8138	West End	Historic, Mining Camp	Wilson's Camp: Upper Residences	FE
5MN8143	West End	Historic, Mine	Vanadate Mine	FE
5MN8144	West End	Historic, Mining Camp	Radium Luminous Camp	FE
5MN8145	West End	Historic, Mining Complex	Long Park No.1 Mine	FE
5MN8147	West End	Historic, Mining Camp	Republican Camp	FE
5MN8148	West End	Historic, Mining Camp	Hart Camp	FE
5MN8154	West End	Historic, Mine	Van Mine: East Workings	FE
5MN8156	West End	Historic, Mining Complex	Mary Ann Mine	FE
5MN8157	West End	Historic, Mining Complex	Uranus Mine	FE
5MN8158	West End	Historic, Mining Camp	Davis Mesa Camp	FE
5MN8171	West End	Historic, Mining Complex	Cripple Creek Mine, Lower Shaft	FE
5MN8172	West End	Historic, Mine		FE
5MN8174	West End	Historic, Mining Camp	Bitter Creek Camp: Prospectors' Camp	FE
5MN8175	West End	Historic, Mining Camp	Bitter Creek Camp	FE
5MN8266	West End	Historic, Mining EQUIPMENT		FE
5MN8268	West End	Historic, Mining Camp	Wilson's Camp: Lower Residences	FE
5MN8432	West End	Open Architectural		FE
5MN8434	West End	Open Architectural		FE
5MN9	Uncompahgre	Sheltered Camp		FE
5MN860	DENCA	Rock Art		NA
5MN863	Uncompahgre	Sheltered Camp	Moore Site	FE
5MN890	West End	Sheltered Architectural	Tabeguache Cave II	LSR>FE
5OR1059	Ouray	Historic, Mine Complex	Slide Mine and Access Road	FE
5SM1953	West End	Open Architectural		OE
5SM3975	West End	Open Architectural		OE
5SM546	West End	Open Architectural?, Historic, Isolated Find		OE
5MN915	West End	Sheltered Camp	Dolores Cave	LSR>OE
5MN9237	West End	Uranium Mine	Vanadium King No. 5 Mine	FE
5SM2721	West End	Open Architectural?		OE

Appendix Table 5. Uncompahgre Field Office: Sites Classified for Discharged from Management.

Site Number	Landscape Unit	Site Type	Site Name	NRHP Status
5DT1064	Uncompahgre	Historic, Mine		ONE
5DT1067	Uncompahgre	Open Lithic		ONE
5DT1069	DENCA	Open Lithic		ONE
5DT1070	Uncompahgre	Open Lithic		ONE
5DT1072	Uncompahgre	Open Lithic		ONE
5DT1077.1	Uncompahgre	Historic, Aqueduct	Dirty George Creek Aqueduct (Segment)	ONE
5DT1077.4	Uncompahgre	Historic, Aqueduct	Dirty George Creek Aqueduct (Segment)	ONE
5DT1079	Uncompahgre	Lithic Quarry		ONE
5DT1090	North Fork	Historic, Trash Dump		ONE
5DT1091	North Fork	Open Camp		ONE
5DT1097	North Fork	Open Lithic		ONE
5DT1122	Uncompahgre	Open Lithic		ONE
5DT1123	Uncompahgre	Open Lithic		ONE
5DT1133	Uncompahgre	Open Lithic; Historic, Trash Scatter		ONE
5DT1136.1	Uncompahgre	Historic, Aqueduct	Dry Gulch Aqueduct	ONE
5DT1136.2	Uncompahgre	Historic, Aqueduct	Dry Gulch Aqueduct	ONE
5DT1136.3	Uncompahgre	Historic, Aqueduct	Dry Gulch Aqueduct	ONE
5DT121	DENCA	Open Architectural; Historic, Trash Scatter		FNE
5DT1227	Uncompahgre	Historic, Bridge	Wells Gulch Culvert	ONE
5DT1522	DENCA	Historic, Camp; Historic, Rock Art	Tyler's Overlook	ONE
5DT1573	North Fork	Historic, Ditch	Gelwick Ditch	ONE
5DT1574	North Fork	Open Camp		ONE
5DT1583	North Fork	Open Lithic		ONE
5DT1584.1	North Fork	Historic, Ditch	Aspen Ditch - Segment	ONE
5DT1584.2	North Fork	Historic, Canal	Aspen Canal (Segment)	ONE
5DT1590	North Fork	Open Lithic		ONE
5DT1710.1	Uncompahgre	Historic, Water Line	Delta Domestic Water Line (Segment)	ONE
5DT1711	Uncompahgre	Historic, Trash Dump		ONE
5DT1712	Uncompahgre	Historic, Trash Dump		ONE
5DT1718	North Fork	Open Lithic		ONE
5DT1721	North Fork	Open Lithic		ONE
5DT1741	Uncompahgre	Historic, Trash Scatter		ONE
5DT1742	Uncompahgre	Historic, Trash Scatter		ONE
5DT1743	Uncompahgre	Historic, Trash Scatter		ONE
5DT1749	North Fork	Historic, Irrigation Ditch	Roberts Stucker Ditch	ONE
5DT208	DENCA	Open Lithic		FNE

Appendix Table 5. Uncompahgre Field Office: Sites Classified for Discharged from Management.

Site Number	Landscape Unit	Site Type	Site Name	NRHP Status
5DT212	DENCA	Sheltered Architectural		FNE
5DT213	DENCA	Open Lithic		FNE
5DT216	DENCA	Open Lithic; Historic, Isolated Feature		ONE
5DT218	DENCA	Open Lithic		FNE
5DT220	North Fork	Historic, Structure		FNE
5DT291	DENCA	Historic, Stone Structure		ONE
5DT351	Uncompahgre	Open Lithic		FNE
5DT46	North Fork	Open Lithic		FNE
5DT47	North Fork	Open Lithic		FNE
5DT5	DENCA	Open Lithic		ONE
5DT550	DENCA	Open Lithic		FNE
5DT551	DENCA	Open Lithic		FNE
5DT552	DENCA	Sheltered Camp		FNE
5DT553	DENCA	Open Lithic		FNE
5DT554	DENCA	Open Lithic		FNE
5DT556	DENCA	Sheltered Camp		FNE
5DT558	Uncompahgre	Open Lithic		FNE
5DT559	Uncompahgre	Open Lithic		FNE
5DT564	Uncompahgre	Open Lithic		FNE
5DT567	Uncompahgre	Open Lithic		ONE
5DT569	Uncompahgre	Open Lithic		FNE
5DT570	DENCA	Stone Quarry		FNE
5DT571	DENCA	Open Lithic		FNE
5DT573	DENCA	Open Architectural		FNE
5DT575	DENCA	Open Lithic		FNE
5DT576	Uncompahgre	Open Lithic		FNE
5DT577	DENCA	Open Lithic		FNE
5DT579	DENCA	Open Lithic		FNE
5DT589	Uncompahgre	Isolated Feature		FNE
5DT607	Uncompahgre	Open Lithic		FNE
5DT623	Uncompahgre	Open Lithic		FNE
5DT624	Uncompahgre	Open Lithic		FNE
5DT638	North Fork	Historic, Mine	Fitzsimmons Mine	ONE
5DT639	North Fork	Historic, Dump Tailings	Burdick	ONE
5DT644	North Fork	Open Camp		FNE
5DT662	Uncompahgre	Open Lithic		ONE
5DT663	Uncompahgre	Open Lithic		ONE
5DT664	Uncompahgre	Open Lithic		ONE

Appendix Table 5. Uncompahgre Field Office: Sites Classified for Discharged from Management.

Site Number	Landscape Unit	Site Type	Site Name	NRHP Status
5DT665	Uncompahgre	Open Lithic		ONE
5DT668	Uncompahgre	Open Lithic		ONE
5DT697	North Fork	Historic, Log Cabin		FNE
5DT745	Uncompahgre	Historic, Water Gauging Equipment		ONE
5DT758	DENCA	Isolated Feature		FNE
5DT760	DENCA	Sheltered Camp		FNE
5DT762	DENCA	Sheltered Camp		FNE
5DT763	North Fork	Historic, Coal Mine	Jenkins and Lewis	ONE
5DT764	North Fork	Historic, Mine	McGruder	ONE
5DT765	North Fork	Historic, Mine	Landerth	ONE
5DT766	North Fork	Historic, Coal Mine	Owens	ONE
5DT767	North Fork	Historic, Mining Complex	Bennett	ONE
5DT812	DENCA	Quarry; Open Lithic		ONE
5DT820	DENCA	Open Lithic		ONE
5DT848	DENCA	Open Lithic; Historic, Isolated Find		ONE
5DT849	Uncompahgre	Open Lithic		ONE
5DT854.2	Uncompahgre	Historic, Trail	Old Spanish Trail (North Branch)~Salt Lake Wagon Road (Segment)	Non-contributing to Eligible District
5DT897	DENCA	Open Lithic		ONE
5DT909	DENCA	Open Lithic		ONE
5DT91	North Fork	Historic, Mine	Converse Mine	ONE
5DT955	Uncompahgre	Open Lithic		ONE
5DT957	Uncompahgre	Open Lithic		ONE
5DT976.1	Uncompahgre	Historic, Road	Unnamed Historic Road (Segment)	ONE
5DT976.2	Uncompahgre	Historic, Road	Unnamed Historic Road (Segment)	ONE
5DT977	Uncompahgre	Historic, Road		ONE
5DT985	Uncompahgre	Open Lithic		ONE
5DT986	Uncompahgre	Open Lithic		ONE
5DT997	North Fork	Historic, Homestead	Shaffer Homestead	ONE
5GN.1562	North Fork	Historic, Corral		ONE
5GN.266	North Fork	Open Lithic; Historic, Trash Scatter		ONE
5GN.4117	Ouray	Historic, Isolated Feature		FNE
5GN.4741	North Fork	Isolated Feature		FNE
5ME11649	West End	Open Lithic		FNE
5ME12005	West End	Open Lithic		FNE
5ME12006	West End	Open Camp		ONE
5ME12008	West End	Open Lithic		ONE

Appendix Table 5. Uncompahgre Field Office: Sites Classified for Discharged from Management.

Site Number	Landscape Unit	Site Type	Site Name	NRHP Status
5ME12009	West End	Open Lithic		ONE
5ME12012	West End	Open Lithic		ONE
5ME12015	West End	Open Camp		ONE
5ME12019	West End	Open Lithic		ONE
5ME12263	DENCA	Open Lithic		ONE
5ME12265	DENCA	Open Lithic		ONE
5ME12267	DENCA	Open Lithic		ONE
5ME12268	DENCA	Open Lithic		ONE
5ME12282	DENCA	Open Lithic		ONE
5ME12283	DENCA	Open Lithic		ONE
5ME12284	DENCA	Open Lithic		ONE
5ME12308	West End	Open Camp		ONE
5ME12314	West End	Open Lithic		FNE
5ME12588	West End	Isolated Feature		ONE
5ME12608	West End	Open Lithic		ONE
5ME12610	West End	Open Camp		ONE
5ME551	DENCA	Open Lithic		FNE
5ME553	DENCA	Open Lithic		FNE
5ME554	DENCA	Open Lithic		FNE
5ME555	DENCA	Open Lithic		FNE
5ME556	DENCA	Open Lithic		FNE
5ME557	DENCA	Open Lithic		FNE
5ME558	DENCA	Open Lithic		FNE
5ME559	DENCA	Open Lithic		FNE
5MN1000	West End	Historic, Camp		FNE
5MN1001	West End	Open Lithic		FNE
5MN1002	West End	Open Lithic		FNE
5MN1003	West End	Open Lithic		FNE
5MN1004	West End	Historic, Temporary Camp		FNE
5MN1005	West End	Open Lithic		FNE
5MN1006	West End	Open Lithic		FNE
5MN1007	West End	Open Lithic		FNE
5MN1008	West End	Open Lithic		FNE
5MN1009	West End	Open Lithic		FNE
5MN1010	West End	Open Lithic		FNE
5MN1011	West End	Open Lithic		FNE
5MN1012	West End	Historic, Mine		FNE
5MN1016	West End	Historic, Coal Mine		FNE

Appendix Table 5. Uncompahgre Field Office: Sites Classified for Discharged from Management.

Site Number	Landscape Unit	Site Type	Site Name	NRHP Status
5MN1017	West End	Historic, Cow Camp?		FNE
5MN1019	Uncompahgre	Open Lithic		FNE
5MN1054	West End	Rock Art	Cottonwood Rim Glyph	FNE
5MN1065	Ouray	Open Lithic		ONE
5MN1076	DENCA	Open Lithic		FNE
5MN1092	Uncompahgre	Open Lithic		FNE
5MN1093	Uncompahgre	Open Lithic		FNE
5MN1094	Uncompahgre	Open Lithic		FNE
5MN1095	Uncompahgre	Open Lithic		FNE
5MN1097	Uncompahgre	Open Lithic		FNE
5MN1098	Uncompahgre	Open Lithic		FNE
5MN1105	West End	Open Camp		FNE
5MN1113	West End	Open Camp		FNE
5MN1119	West End	Open Camp; Historic, Brush Corral		FNE
5MN1121	West End	Open Camp; Historic, Camp		FNE
5MN1122	West End	Open Camp		FNE
5MN1123	West End	Open Camp; Historic, Camp		FNE
5MN1125	West End	Open Camp		FNE
5MN1126	West End	Open Camp		FNE
5MN1136	West End	Open Lithic		FNE
5MN1137	West End	Open Lithic		FNE
5MN1156	West End	Open Lithic		FNE
5MN1165	West End	Open Lithic; Burial?		FNE
5MN1166	West End	Historic, Quarry		FNE
5MN1167	West End	Historic, Trash Dump		FNE
5MN1184	West End	Open Lithic		ONE
5MN1188	West End	Open Camp		FNE
5MN1197	West End	Open Lithic		FNE
5MN1198	West End	Open Lithic		FNE
5MN1212	Uncompahgre	Open Lithic		FNE
5MN1217	Uncompahgre	Historic, Structures		FNE
5MN1220	DENCA	Historic, Corral		FNE
5MN1221	DENCA	Open Lithic		FNE
5MN1222	DENCA	Open Lithic		FNE
5MN1223	DENCA	Open Lithic		FNE
5MN1226	Uncompahgre	Open Camp		ONE
5MN1233	Uncompahgre	Open Lithic		FNE
5MN1234	Uncompahgre	Open Lithic		FNE

Appendix Table 5. Uncompahgre Field Office: Sites Classified for Discharged from Management.

Site Number	Landscape Unit	Site Type	Site Name	NRHP Status
5MN1235	Uncompahgre	Open Lithic		FNE
5MN1236	Uncompahgre	Open Lithic		FNE
5MN1237	Uncompahgre	Open Lithic		FNE
5MN1238	Uncompahgre	Open Lithic		FNE
5MN1240	Uncompahgre	Open Lithic		FNE
5MN1241	Uncompahgre	Sheltered Camp		FNE
5MN1267	West End	Open Lithic		FNE
5MN1280	West End	Open Lithic		FNE
5MN1287	West End	Open Lithic		FNE
5MN1288	West End	Open Camp		FNE
5MN1291	West End	Open Lithic		FNE
5MN1322	Uncompahgre	Open Lithic		FNE
5MN1323	Uncompahgre	Open Lithic		FNE
5MN1326	West End	Open Lithic		FNE
5MN1327	Uncompahgre	Open Lithic		FNE
5MN1404	DENCA	Open Lithic		FNE
5MN147	West End	Open Camp		ONE
5MN1491	DENCA	Open Lithic		FNE
5MN1494	DENCA	Open Lithic		FNE
5MN1521	Uncompahgre	Open Lithic		FNE
5MN1523	Uncompahgre	Open Lithic		FNE
5MN1525	Uncompahgre	Open Lithic		FNE
5MN1539	West End	Open Lithic		ONE
5MN1592	West End	Open Lithic		FNE
5MN1593	West End	Historic, Cabin		FNE
5MN16	Uncompahgre	Sheltered Camp		ONE
5MN1608.2	Ouray	Historic, Railroad Grade	Denver & Rio Grande Railroad-Cimmaroon to Cerro Summit	FNE
5MN1610	Uncompahgre	Open Lithic		FNE
5MN1613	Uncompahgre	Open Lithic		FNE
5MN1630	West End	Open Lithic		FNE
5MN1631	West End	Open Lithic		FNE
5MN1638	West End	Open Lithic		FNE
5MN1641	West End	Open Lithic		ONE
5MN1644	West End	Open Lithic		FNE
5MN1713	West End	Open Lithic		FNE
5MN1714	West End	Open Lithic		FNE
5MN1715	West End	Historic, Airstrip	Spring Creek Airfield	FNE

Appendix Table 5. Uncompahgre Field Office: Sites Classified for Discharged from Management.

Site Number	Landscape Unit	Site Type	Site Name	NRHP Status
5MN1717	West End	Open Lithic		FNE
5MN1718	West End	Open Lithic		FNE
5MN1719	West End	Open Lithic		FNE
5MN1720	West End	Open Lithic		FNE
5MN1722	West End	Open Lithic		FNE
5MN1723	West End	Open Camp		FNE
5MN1724	West End	Open Lithic		FNE
5MN1725	West End	Open Camp		FNE
5MN1726	West End	Open Lithic		FNE
5MN1727	West End	Open Lithic		FNE
5MN1728	West End	Open Lithic		FNE
5MN1729	West End	Open Lithic		FNE
5MN1731	West End	Open Lithic		FNE
5MN1732	West End	Open Lithic		FNE
5MN1733	West End	Open Lithic		FNE
5MN1735	West End	Open Camp		FNE
5MN1736	West End	Open Lithic		FNE
5MN1737	West End	Open Camp		FNE
5MN1738	West End	Open Lithic		FNE
5MN1739	West End	Open Lithic		FNE
5MN1740	West End	Open Camp		FNE
5MN1742	West End	Open Camp		FNE
5MN1743	West End	Open Camp		FNE
5MN1744	West End	Open Lithic		FNE
5MN1745	West End	Open Camp		FNE
5MN1746	West End	Open Camp		FNE
5MN1747	West End	Open Lithic		FNE
5MN1748	West End	Open Lithic		FNE
5MN1749	West End	Open Camp		FNE
5MN1750	West End	Open Camp		FNE
5MN1752	West End	Open Lithic		FNE
5MN1753	West End	Open Camp		FNE
5MN1754	West End	Open Lithic		FNE
5MN1755	West End	Open Lithic		FNE
5MN1756	West End	Open Camp		FNE
5MN1757	West End	Open Camp		FNE
5MN1758	West End	Open Lithic		FNE
5MN1759	West End	Open Lithic		FNE

Appendix Table 5. Uncompahgre Field Office: Sites Classified for Discharged from Management.

Site Number	Landscape Unit	Site Type	Site Name	NRHP Status
5MN1775	West End	Open Lithic		FNE
5MN1777	West End	Open Lithic		FNE
5MN1803	West End	Open Lithic		FNE
5MN1824	West End	Open Lithic		FNE
5MN1858	West End	Open Lithic		FNE
5MN1859	West End	Open Lithic		FNE
5MN1862	Uncompahgre	Historic, Brush Enclosure		FNE
5MN1863	Uncompahgre	Open Lithic		FNE
5MN1864	Uncompahgre	Open Lithic		FNE
5MN1884	Uncompahgre	Open Lithic		FNE
5MN1895	Uncompahgre	Open Lithic; Historic, Camp		FNE
5MN1899	Uncompahgre	Open Lithic		FNE
5MN1903	Uncompahgre	Open Lithic		FNE
5MN1904	Uncompahgre	Open Camp		FNE
5MN1905	Uncompahgre	Open Lithic		FNE
5MN1906	Uncompahgre	Open Lithic		FNE
5MN1907	Uncompahgre	Open Lithic		FNE
5MN1913	Uncompahgre	Open Lithic		ONE
5MN1914	Uncompahgre	Open Lithic		FNE
5MN1915	Uncompahgre	Open Lithic		FNE
5MN1916	Uncompahgre	Open Lithic		FNE
5MN1917	Uncompahgre	Open Lithic		ONE
5MN1922	Uncompahgre	Open Lithic		ONE
5MN1925	Uncompahgre	Open Lithic		FNE
5MN1926	Uncompahgre	Open Lithic		FNE
5MN1927	Uncompahgre	Open Lithic		FNE
5MN1928	Uncompahgre	Open Lithic		ONE
5MN1930	Uncompahgre	Open Lithic		FNE
5MN1931	Uncompahgre	Lithic Quarry		FNE
5MN1932	Uncompahgre	Open Camp		ONE
5MN1933	Uncompahgre	Open Lithic		ONE
5MN1936	Uncompahgre	Open Camp		FNE
5MN1939	Uncompahgre	Open Lithic		FNE
5MN1940	Uncompahgre	Open Lithic		FNE
5MN1941	Uncompahgre	Open Camp; Historic, Trash Scatter		ONE
5MN1942	Uncompahgre	Open Lithic		FNE
5MN1943	Uncompahgre	Open Lithic; Historic, Isolated Find		FNE
5MN1945	Uncompahgre	Open Lithic		FNE

Appendix Table 5. Uncompahgre Field Office: Sites Classified for Discharged from Management.

Site Number	Landscape Unit	Site Type	Site Name	NRHP Status
5MN1946	Uncompahgre	Open Lithic		FNE
5MN1947	Uncompahgre	Open Lithic		FNE
5MN1951	Uncompahgre	Open Lithic		ONE
5MN1952	Uncompahgre	Open Camp		ONE
5MN1953	Uncompahgre	Open Lithic; Historic, Trash Scatter		ONE
5MN1955	Uncompahgre	Open Lithic		FNE
5MN1956	Uncompahgre	Open Lithic; Historic, Isolated Find		FNE
5MN1959	Uncompahgre	Open Lithic		ONE
5MN1960	Uncompahgre	Open Lithic		ONE
5MN2035	Ouray	Historic, Canal	Loutsenhizer Canal	ONE
5MN2066	West End	Historic, Herding Camp		FNE
5MN2087	West End	Open Lithic		FNE
5MN2088	West End	Open Lithic		FNE
5MN2183	West End	Open Lithic		FNE
5MN2191	West End	Open Lithic		FNE
5MN2207	West End	Open Lithic		FNE
5MN2208	West End	Open Lithic		FNE
5MN2210	West End	Open Camp		FNE
5MN2223	West End	Open Architectural		FNE
5MN2225	West End	Open Lithic		FNE
5MN2229	Uncompahgre	Open Lithic		ONE
5MN2295	West End	Open Lithic		FNE
5MN2297	West End	Open Camp		FNE
5MN2298	West End	Open Lithic		FNE
5MN2301	West End	Open Lithic		FNE
5MN2304	Uncompahgre	Open Camp		FNE
5MN2305	Uncompahgre	Open Lithic		FNE
5MN2307	Uncompahgre	Open Lithic		FNE
5MN2351	Ouray	Historic, Trash Scatter		ONE
5MN2375	Uncompahgre	Open Lithic		ONE
5MN2376	Uncompahgre	Open Camp		ONE
5MN2377	Uncompahgre	Open Lithic		ONE
5MN2378	Uncompahgre	Open Lithic		ONE
5MN2379	Uncompahgre	Open Lithic		ONE
5MN2380	Uncompahgre	Open Lithic		ONE
5MN2381	Uncompahgre	Open Lithic		ONE
5MN2382	Uncompahgre	Open Lithic		ONE
5MN2383	Uncompahgre	Open Lithic		ONE

Appendix Table 5. Uncompahgre Field Office: Sites Classified for Discharged from Management.

Site Number	Landscape Unit	Site Type	Site Name	NRHP Status
5MN2384	Uncompahgre	Open Lithic		ONE
5MN2385	Uncompahgre	Open Lithic		ONE
5MN2386	Uncompahgre	Open Lithic		ONE
5MN2387	Uncompahgre	Open Lithic		ONE
5MN2388	Uncompahgre	Open Lithic		ONE
5MN2389	Uncompahgre	Open Lithic		ONE
5MN2390	Uncompahgre	Open Lithic		ONE
5MN2391	Uncompahgre	Open Lithic		ONE
5MN2392	Uncompahgre	Open Lithic		ONE
5MN2393	Uncompahgre	Open Lithic		ONE
5MN2394	Uncompahgre	Open Lithic		ONE
5MN2395	Uncompahgre	Open Lithic		ONE
5MN2396	Uncompahgre	Open Lithic		ONE
5MN2397	Uncompahgre	Open Architectural		ONE
5MN2398	Uncompahgre	Open Lithic		ONE
5MN2400	Uncompahgre	Open Lithic		ONE
5MN2401	Uncompahgre	Open Camp		ONE
5MN2402	Uncompahgre	Open Lithic		ONE
5MN2403	Uncompahgre	Open Lithic		ONE
5MN2404	Uncompahgre	Open Lithic; Historic, Hunting Camp		ONE
5MN2405	Uncompahgre	Open Lithic		ONE
5MN2406	Uncompahgre	Open Lithic		ONE
5MN2407	Uncompahgre	Open Camp; Historic, Herding Camp		ONE
5MN2408	Uncompahgre	Open Lithic		ONE
5MN2409	Uncompahgre	Open Lithic		ONE
5MN2410	Uncompahgre	Open Camp; Historic, Trash Dump		ONE
5MN2411	Uncompahgre	Open Lithic		ONE
5MN2412	Uncompahgre	Open Camp; Historic, Isolated Find		ONE
5MN2413	Uncompahgre	Open Lithic		ONE
5MN2414	Uncompahgre	Open Camp		ONE
5MN2415	Uncompahgre	Open Lithic		ONE
5MN2417	Uncompahgre	Open Lithic		ONE
5MN2419	Uncompahgre	Open Lithic		ONE
5MN2420	Uncompahgre	Open Lithic		ONE
5MN2421	Uncompahgre	Open Lithic		ONE
5MN2422	Uncompahgre	Open Lithic		ONE
5MN2424	Uncompahgre	Open Lithic; Historic, Trash Scatter		ONE

Appendix Table 5. Uncompahgre Field Office: Sites Classified for Discharged from Management.

Site Number	Landscape Unit	Site Type	Site Name	NRHP Status
5MN2425	Uncompahgre	Open Lithic		ONE
5MN2427	Uncompahgre	Open Lithic		ONE
5MN2436	Uncompahgre	Open Lithic		ONE
5MN2440	Uncompahgre	Open Lithic		ONE
5MN2499	Uncompahgre	Open Lithic		ONE
5MN2500	Uncompahgre	Open Architectural		ONE
5MN2501	Uncompahgre	Open Lithic		ONE
5MN2502	Uncompahgre	Open Lithic		ONE
5MN2503	Uncompahgre	Open Lithic		ONE
5MN2504	Uncompahgre	Open Lithic		ONE
5MN2505	Uncompahgre	Open Lithic; Historic, Isolated Feature		ONE
5MN2506	Uncompahgre	Open Lithic		ONE
5MN2507	Uncompahgre	Open Lithic		ONE
5MN2508	Uncompahgre	Open Lithic		ONE
5MN2509	Uncompahgre	Open Lithic		ONE
5MN2510	Uncompahgre	Open Lithic		ONE
5MN2511	Uncompahgre	Open Lithic		ONE
5MN2512	Uncompahgre	Open Lithic		ONE
5MN2513	Uncompahgre	Open Architectural; Historic, Isolated Feature		ONE
5MN2514	Uncompahgre	Open Lithic		ONE
5MN2515	Uncompahgre	Open Lithic		ONE
5MN2516	Uncompahgre	Open Lithic		ONE
5MN2517	Uncompahgre	Open Lithic		ONE
5MN2518	Uncompahgre	Open Lithic		ONE
5MN2519	Uncompahgre	Open Lithic		ONE
5MN2520	Uncompahgre	Open Lithic		ONE
5MN2521	Uncompahgre	Open Lithic		ONE
5MN2522	Uncompahgre	Open Lithic		ONE
5MN2523	Uncompahgre	Open Lithic		ONE
5MN2524	Uncompahgre	Open Lithic		ONE
5MN2525	Uncompahgre	Open Camp		ONE
5MN2526	Uncompahgre	Open Lithic		ONE
5MN2527	Uncompahgre	Open Lithic		ONE
5MN2528	Uncompahgre	Historic, Camp		ONE
5MN2529	Uncompahgre	Open Lithic		ONE
5MN2530	Uncompahgre	Open Lithic		ONE
5MN2531	Uncompahgre	Open Lithic		ONE

Appendix Table 5. Uncompahgre Field Office: Sites Classified for Discharged from Management.

Site Number	Landscape Unit	Site Type	Site Name	NRHP Status
5MN2534	Uncompahgre	Open Lithic		ONE
5MN2535	Uncompahgre	Open Lithic		ONE
5MN2536	Uncompahgre	Open Lithic		ONE
5MN2537	Uncompahgre	Open Lithic		ONE
5MN2539	Uncompahgre	Open Lithic		ONE
5MN2540	Uncompahgre	Open Lithic		ONE
5MN2541	Uncompahgre	Open Camp		ONE
5MN2543	Uncompahgre	Open Lithic		ONE
5MN2544	Uncompahgre	Open Lithic		ONE
5MN2545	Uncompahgre	Open Camp		ONE
5MN2546	Uncompahgre	Open Lithic		ONE
5MN2547	Uncompahgre	Open Lithic		ONE
5MN2548	Uncompahgre	Open Lithic		ONE
5MN2554	Uncompahgre	Open Lithic		ONE
5MN2665	West End	Open Lithic		FNE
5MN2691	West End	Open Camp		FNE
5MN2747	West End	Historic, Mine	Bitter Creek Mines>Radium King	ONE
5MN2748	West End	Historic, Mining Complex	Long Park Problem>Sharkey Mine>Honeymoon Mine	ONE
5MN2768	West End	Historic, Homestead		ONE
5MN2808	Uncompahgre	Open Lithic		FNE
5MN2809	Uncompahgre	Open Lithic		ONE
5MN2810	Uncompahgre	Open Lithic		ONE
5MN2811	Uncompahgre	Open Lithic		FNE
5MN2812	Uncompahgre	Open Lithic		ONE
5MN2813	Uncompahgre	Open Lithic		ONE
5MN2814	Uncompahgre	Open Lithic		ONE
5MN2815	Uncompahgre	Open Lithic		ONE
5MN2837	Uncompahgre	Open Camp		ONE
5MN2838	Uncompahgre	Open Lithic		ONE
5MN2840	Uncompahgre	Open Camp		ONE
5MN2842	Uncompahgre	Open Lithic		ONE
5MN2852	Uncompahgre	Open Lithic		ONE
5MN2854	Uncompahgre	Open Lithic		ONE
5MN2857	Uncompahgre	Open Lithic; Historic, Isolated Find		ONE
5MN2862	Uncompahgre	Open Camp		ONE
5MN2863	Uncompahgre	Open Lithic		ONE
5MN2922	Uncompahgre	Open Camp		ONE

Appendix Table 5. Uncompahgre Field Office: Sites Classified for Discharged from Management.

Site Number	Landscape Unit	Site Type	Site Name	NRHP Status
5MN2958	West End	Open Camp		ONE
5MN3002	West End	Open Lithic		FNE
5MN3005	West End	Open Lithic		ONE
5MN3008	West End	Historic, Camp		FNE
5MN3020	West End	Open Lithic		FNE
5MN3027	Uncompahgre	Open Lithic		FNE
5MN3030	West End	Rock Art		ONE
5MN3185	Ouray	Open Camp		ONE
5MN3186	Ouray	Open Lithic		ONE
5MN3189	Uncompahgre	Open Lithic		ONE
5MN32	Uncompahgre	Open Camp		FNE
5MN3216	Uncompahgre	Open Lithic		ONE
5MN3218	Uncompahgre	Open Camp		ONE
5MN3220	Uncompahgre	Sheltered Camp		ONE
5MN3329	West End	Open Lithic		ONE
5MN3330	West End	Open Lithic		ONE
5MN3340	Uncompahgre	Open Camp		ONE
5MN3341	Uncompahgre	Open Lithic		ONE
5MN3342	Uncompahgre	Open Camp		ONE
5MN3344	Uncompahgre	Open Camp		ONE
5MN3415	West End	Open Lithic		ONE
5MN3417	West End	Open Lithic; Quarry		ONE
5MN3421	West End	Open Lithic		ONE
5MN3426	West End	Open Lithic		ONE
5MN3431	West End	Open Camp		ONE
5MN3446	Uncompahgre	Historic, Isolated Feature		FNE
5MN3482	West End	Open Lithic		ONE
5MN3488	West End	Open Lithic; Quarry		ONE
5MN3606	West End	Open Lithic		ONE
5MN3607	West End	Open Lithic		ONE
5MN3608	West End	Open Lithic		ONE
5MN3614	West End	Open Camp		ONE
5MN3629	West End	Historic, Trash Scatter		FNE
5MN3634	West End	Historic, Isolated Feature, GRAVE		FNE
5MN3653	DENCA	Open Lithic; Historic, Trash Scatter		FNE
5MN3654	DENCA	Open Lithic		FNE
5MN3657	Uncompahgre	Open Lithic; Historic, Trash Scatter		FNE
5MN3664	West End	Open Lithic; Historic, Trash Dump		ONE

Appendix Table 5. Uncompahgre Field Office: Sites Classified for Discharged from Management.

Site Number	Landscape Unit	Site Type	Site Name	NRHP Status
5MN3669	West End	Open Camp?		ONE
5MN3676	West End	Open Lithic		ONE
5MN3677	West End	Open Camp		ONE
5MN3682	Uncompahgre	Open Architectural		ONE
5MN3731	Uncompahgre	Open Camp		ONE
5MN3732	Uncompahgre	Open Lithic		ONE
5MN3733	Uncompahgre	Open Camp		ONE
5MN3846	Uncompahgre	Open Lithic		FNE
5MN3847	Uncompahgre	Open Lithic		FNE
5MN3848	Uncompahgre	Open Lithic; Historic, Trash Scatter		FNE
5MN3849	Uncompahgre	Historic, Sheep Camp		FNE
5MN3850	Uncompahgre	Open Lithic		FNE
5MN3852	Uncompahgre	Historic, Trash Dump		FNE
5MN3853	Uncompahgre	Open Lithic		FNE
5MN3855	Uncompahgre	Open Lithic		ONE
5MN3856	Uncompahgre	Open Lithic		ONE
5MN3857	Uncompahgre	Open Lithic		ONE
5MN3860	Uncompahgre	Open Camp		ONE
5MN3862	Uncompahgre	Open Lithic		ONE
5MN3863	Uncompahgre	Open Lithic		ONE
5MN3864	Uncompahgre	Open Lithic		ONE
5MN3865	Uncompahgre	Open Lithic		ONE
5MN3876	Uncompahgre	Open Architectural	Transfer Road Hamlet Site	FNE
5MN3877	Uncompahgre	Open Lithic		ONE
5MN3878	Uncompahgre	Open Camp		ONE
5MN3879	Uncompahgre	Open Lithic		ONE
5MN3882	Uncompahgre	Open Lithic		ONE
5MN3884	Uncompahgre	Historic, Camp; Historic, Grave?		ONE
5MN3885	Uncompahgre	Open Lithic		ONE
5MN3892	Uncompahgre	Open Lithic		ONE
5MN3893	Uncompahgre	Open Lithic		ONE
5MN3894	Uncompahgre	Open Camp		ONE
5MN3895	Uncompahgre	Open Camp		ONE
5MN3896	Uncompahgre	Open Lithic		ONE
5MN3898	Uncompahgre	Open Lithic		ONE
5MN3899	Uncompahgre	Open Lithic		ONE
5MN3900	Uncompahgre	Open Camp		ONE
5MN3933	Uncompahgre	Open Lithic		FNE

Appendix Table 5. Uncompahgre Field Office: Sites Classified for Discharged from Management.

Site Number	Landscape Unit	Site Type	Site Name	NRHP Status
5MN3938	Uncompahgre	Open Lithic		FNE
5MN3939	Uncompahgre	Open Lithic		FNE
5MN4007	West End	Open Lithic		ONE
5MN4008	West End	Open Lithic		ONE
5MN4011	West End	Open Lithic		ONE
5MN4012	West End	Open Lithic		ONE
5MN4013	West End	Open Lithic		ONE
5MN4023	Uncompahgre	Open Lithic		FNE
5MN4025	Uncompahgre	Open Lithic; Historic, Isolated Find		FNE
5MN4026	Uncompahgre	Historic, Trash Scatter		FNE
5MN4029	Uncompahgre	Historic, Tin Can Scatter		FNE
5MN4034	Uncompahgre	Open Lithic		FNE
5MN4035	Uncompahgre	Open Lithic		FNE
5MN4036	Uncompahgre	Open Lithic		FNE
5MN4045	Uncompahgre	Open Lithic; Historic, Trash Scatter		FNE
5MN4076	West End	Open Lithic		ONE
5MN4082	West End	Open Camp		FNE
5MN4083	West End	Open Camp		ONE
5MN4084	West End	Open Lithic		ONE
5MN4085	West End	Open Lithic		ONE
5MN4094	West End	Open Camp		ONE
5MN4095	West End	Open Lithic		ONE
5MN4096	West End	Open Lithic		ONE
5MN4097	West End	Open Lithic		ONE
5MN4105	West End	Historic, Isolated Feature, Grave		FNE
5MN4108	Uncompahgre	Road; Historic	Transfer Road	ONE
5MN4108.1	Uncompahgre	Historic, Road	Transfer Road	ONE
5MN4216	Uncompahgre	Open Lithic		ONE
5MN4217	Uncompahgre	Sheltered Camp; Historic, Trash Scatter		ONE
5MN4224	Uncompahgre	Open Lithic		ONE
5MN4225	Uncompahgre	Open Lithic		ONE
5MN4226	Uncompahgre	Sheltered Lithic		ONE
5MN4239	Uncompahgre	Open Lithic		ONE
5MN4252	West End	Open Lithic		ONE
5MN4298	Uncompahgre	Open Lithic		ONE
5MN4327.1	Uncompahgre	Historic, Road	Unnamed Road	ONE
5MN4327.2	Uncompahgre	Historic, Road		ONE
5MN434	West End	Sheltered Architectural; Open Camp		FNE

Appendix Table 5. Uncompahgre Field Office: Sites Classified for Discharged from Management.

Site Number	Landscape Unit	Site Type	Site Name	NRHP Status
5MN4362	West End	Open Camp		ONE
5MN4389	West End	Historic, Ranch	Spring Creek Ranch	FNE
5MN4391	West End	Historic, Mine	Whitney Mines	FNE
5MN4395	West End	Historic, Homestead		FNE
5MN4397	Uncompahgre	Open Lithic		FNE
5MN4398	Uncompahgre	Open Lithic		FNE
5MN4399	Uncompahgre	Open Lithic		FNE
5MN4403	Uncompahgre	Open Camp; Historic, Trash Scatter	The Dunham Site/Historic Sheep Camp	FNE
5MN4414	Uncompahgre	Open Lithic		FNE
5MN4417	Uncompahgre	Open Lithic		FNE
5MN4419	Uncompahgre	Open Lithic		FNE
5MN4422	Uncompahgre	Open Camp		FNE
5MN4427	Uncompahgre	Open Lithic		FNE
5MN4428	Uncompahgre	Open Lithic; Historic, Isolated Find		FNE
5MN4441.2	Uncompahgre	Historic, Irrigation System	Evergreen Heights Ditch~Segment	ONE
5MN4456	West End	Historic, Mine	Virgin Mine	ONE
5MN4459	West End	Historic, Mine	Firebird Mine	ONE
5MN4460	West End	Historic, Mine	CFC Mine	ONE
5MN4463	West End	Historic, Mine	Groundhog Mine	ONE
5MN4464	West End	Historic, Mine	Guada Canal Mine	ONE
5MN4467	West End	Historic, Mine Complex	Triangulation Mine	ONE
5MN4479	West End	Historic, Mining Complex	Eagle Basin Mine	ONE
5MN4481	West End	Historic, Mining Complex	Blackfoot Mine~Unidentified Eagle Basin Mine II	ONE
5MN4484	West End	Historic, Mining Complex	Mineral Joe II Mine	ONE
5MN4491	West End	Historic, Mining Complex	Golden Cycle Mine	ONE
5MN45	Uncompahgre	Open Camp		FNE
5MN4542	Uncompahgre	Open Lithic		ONE
5MN4543	Uncompahgre	Open Camp; Historic, CampSite		ONE
5MN4549	Uncompahgre	Open Lithic		ONE
5MN4550	Uncompahgre	Open Lithic		ONE
5MN4557	Uncompahgre	Open Lithic		ONE
5MN4560	Uncompahgre	Open Camp		ONE
5MN4561	Uncompahgre	Open Lithic		ONE
5MN4562	Uncompahgre	Open Lithic		ONE
5MN4567	Uncompahgre	Open Camp		ONE
5MN4569	Uncompahgre	Open Lithic		ONE

Appendix Table 5. Uncompahgre Field Office: Sites Classified for Discharged from Management.

Site Number	Landscape Unit	Site Type	Site Name	NRHP Status
5MN4570	Uncompahgre	Open Camp		ONE
5MN4571	Uncompahgre	Open Lithic		ONE
5MN4573	Uncompahgre	Open Lithic		ONE
5MN4574	Uncompahgre	Open Camp		ONE
5MN4576	Uncompahgre	Open Lithic		ONE
5MN4577	Uncompahgre	Open Lithic		ONE
5MN4578	Uncompahgre	Open Lithic		ONE
5MN4587	Uncompahgre	Open Lithic		ONE
5MN4593	Uncompahgre	Open Lithic		ONE
5MN4595	Uncompahgre	Open Lithic		ONE
5MN4602	Uncompahgre	Open Lithic		ONE
5MN4643	Uncompahgre	Historic, Sheep Camp		ONE
5MN4646	Uncompahgre	Open Camp		ONE
5MN4647	Uncompahgre	Open Lithic		ONE
5MN4659	West End	Open Lithic	Fenceline Site	ONE
5MN4665	West End	Open Camp	Dos Manos Camp	ONE
5MN4688	West End	Open Camp	Twenty Acre Scatter	ONE
5MN4690	Ouray	Open Camp	Three Hearth Site	ONE
5MN4711	West End	Lithic Quarry		ONE
5MN472	DENCA	Open Lithic		FNE
5MN474	DENCA	Open Lithic		FNE
5MN4746	Uncompahgre	Historic, Homestead		ONE
5MN476	DENCA	Open Lithic		FNE
5MN477	DENCA	Open Lithic		FNE
5MN4771	Ouray	Open Architectural		ONE
5MN4772	West End	Historic, Camp		FNE
5MN4775	Uncompahgre	Open Lithic		ONE
5MN478	DENCA	Open Lithic		FNE
5MN479	DENCA	Open Lithic		FNE
5MN480	DENCA	Open Lithic		FNE
5MN4813	West End	Historic, Mining Complex	East Carpenter Flats Mines	FNE
5MN4814	West End	Historic, Mining Complex	East Carpenter Flats Mines	FNE
5MN4815	Uncompahgre	Open Lithic		ONE
5MN4872	West End	Open Lithic		ONE
5MN4874	West End	Historic, Mining Complex	Climax Camp	FNE
5MN4875	West End	Historic, Mining Complex	Mineral Joe #2	FNE
5MN4894	West End	Open Camp		ONE

Appendix Table 5. Uncompahgre Field Office: Sites Classified for Discharged from Management.

Site Number	Landscape Unit	Site Type	Site Name	NRHP Status
5MN4895	West End	Open Lithic		ONE
5MN4896	West End	Open Lithic		ONE
5MN4897	West End	Open Lithic		ONE
5MN4918	West End	Historic, Mining Camp		FNE
5MN4920	West End	Open Lithic		ONE
5MN4921	West End	Open Lithic		ONE
5MN4922	West End	Open Lithic		ONE
5MN4923	West End	Open Lithic		ONE
5MN4925	West End	Open Lithic		ONE
5MN493	West End	Open Lithic		FNE
5MN496	West End	Open Lithic		FNE
5MN497	West End	Open Camp		ONE
5MN4985	West End	Historic, Mining Camp		FNE
5MN499	West End	Open Lithic		FNE
5MN4993	West End	Open Lithic		ONE
5MN500	West End	Open Lithic		FNE
5MN5000	Ouray	Open Lithic		ONE
5MN5004	Ouray	Open Lithic		ONE
5MN5005	Ouray	Open Lithic		ONE
5MN5008	Ouray	Open Lithic		ONE
5MN5011	Ouray	Open Lithic		ONE
5MN5014	Ouray	Open Lithic		ONE
5MN5015	Ouray	Open Lithic		ONE
5MN5017	Ouray	Open Lithic		ONE
5MN5024	Ouray	Open Lithic		ONE
5MN504	West End	Historic, Habitation		FNE
5MN5050	West End	Open Camp		ONE
5MN5056	West End	Historic, Isolated Feature		FNE
5MN5059	West End	Historic, Isolated Feature		FNE
5MN5060	West End	Historic, Isolated Feature		FNE
5MN5061	West End	Historic, Isolated Feature		FNE
5MN5063	West End	Historic, Isolated Feature		FNE
5MN5065	West End	Historic, Isolated Feature, Adit		FNE
5MN5066	West End	Historic, Isolated Feature		FNE
5MN5067	West End	Historic, Mine	Martin Mesa Mines	FNE
5MN5068	West End	Historic, Isolated Feature		FNE
5MN507	West End	Open Lithic	Barry's Hearth Site	ONE
5MN5070	West End	Historic, Isolated Feature		FNE

Appendix Table 5. Uncompahgre Field Office: Sites Classified for Discharged from Management.

Site Number	Landscape Unit	Site Type	Site Name	NRHP Status
5MN5071	West End	Historic, Isolated Feature		FNE
5MN5073	West End	Historic, Mine	Martin Mesa Mines ~Betty Jean Mine	FNE
5MN5074	West End	Historic, Mine	Martin Mesa Mines	FNE
5MN5079	West End	Historic, Mine	Carpenters Flats Mine	FNE
5MN5080	West End	Historic, Mine	Little Buckhorn Mine	FNE
5MN5081	West End	Historic, Mining Complex	Martin Mesa Mines	FNE
5MN5082	West End	Historic, Mining Complex	Crown Prince Mine~Badger Mine	FNE
5MN5083	West End	Historic, Mining Complex	Farmer Girl Mine	ONE
5MN5085	West End	Historic, Mining Complex	Incline #5	FNE
5MN5086	West End	Historic, Mine	Carpenter Flats Mines	FNE
5MN5087	Uncompahgre	Open Camp		FNE
5MN5135	West End	Open Lithic		ONE
5MN5143	West End	Open Lithic		ONE
5MN5144	West End	Open Lithic		ONE
5MN5145	West End	Open Camp		ONE
5MN5147	West End	Open Lithic		ONE
5MN5149	West End	Historic, Cistern		ONE
5MN515	West End	Open Camp	Chained Out Camps	ONE
5MN5150	West End	Open Lithic		ONE
5MN5157	West End	Open Lithic		ONE
5MN5158	West End	Open Camp		ONE
5MN5160	West End	Open Lithic		ONE
5MN5161	West End	Sheltered Lithic		ONE
5MN5162	West End	Open Lithic		ONE
5MN5164	West End	Open Lithic		ONE
5MN5166	West End	Open Lithic		ONE
5MN5168	West End	Open Lithic		ONE
5MN5176	West End	Open Lithic		ONE
5MN5178	West End	Open Camp		ONE
5MN5180	West End	Open Lithic		ONE
5MN5183	West End	Open Camp		ONE
5MN5192	West End	Open Lithic		ONE
5MN5194	West End	Open Lithic		ONE
5MN5195	West End	Open Camp		ONE
5MN5199	West End	Historic, Trash Dump		ONE
5MN52	Uncompahgre	Sheltered Camp		FNE
5MN5200	West End	Open Camp		ONE

Appendix Table 5. Uncompahgre Field Office: Sites Classified for Discharged from Management.

Site Number	Landscape Unit	Site Type	Site Name	NRHP Status
5MN5204	West End	Open Camp?		ONE
5MN5205	West End	Open Lithic		ONE
5MN5208	West End	Open Camp		ONE
5MN5209	West End	Open Lithic		ONE
5MN521	West End	Open Lithic	Barry and Jim's Site	ONE
5MN5211	West End	Open Camp		ONE
5MN5215	West End	Open Lithic; Historic, Isolated Feature		ONE
5MN5216	West End	Open Lithic		ONE
5MN5220	West End	Open Lithic		ONE
5MN5235	West End	Open Camp		ONE
5MN5236	West End	Open Lithic		ONE
5MN5239	West End	Open Camp		ONE
5MN5242	West End	Open Camp		ONE
5MN5246	West End	Open Lithic		ONE
5MN5247	West End	Open Lithic; Historic, Trash Scatter		ONE
5MN5248	West End	Open Lithic		ONE
5MN5266	West End	Open Lithic		ONE
5MN5268	Uncompahgre	Open Lithic		ONE
5MN5278	Ouray	Open Lithic		ONE
5MN5279	Ouray	Open Lithic		ONE
5MN5280	Ouray	Open Lithic		ONE
5MN5281	Ouray	Open Lithic		ONE
5MN5288	Ouray	Open Lithic		ONE
5MN529	West End	Open Camp		ONE
5MN5317	West End	Historic, Isolated Feature		FNE
5MN5390	West End	Open Lithic		ONE
5MN5392	West End	Open Camp?		ONE
5MN5395	West End	Open Lithic		ONE
5MN5398	West End	Open Lithic		ONE
5MN5400	West End	Open Lithic		ONE
5MN5401	West End	Open Lithic		ONE
5MN5403	West End	Open Lithic		ONE
5MN5404	West End	Open Lithic		ONE
5MN5406	West End	Open Architectural		ONE
5MN5408	West End	Open Lithic		ONE
5MN5409	West End	Open Lithic		ONE
5MN5410	West End	Open Lithic		ONE
5MN5412	West End	Open Camp		ONE

Appendix Table 5. Uncompahgre Field Office: Sites Classified for Discharged from Management.

Site Number	Landscape Unit	Site Type	Site Name	NRHP Status
5MN5413	West End	Open Architectural		ONE
5MN5434	West End	Open Lithic		ONE
5MN5441	DENCA	Open Lithic		ONE
5MN5442	DENCA	Open Lithic		ONE
5MN5476	West End	Open Lithic		ONE
5MN5522	West End	Open Lithic		ONE
5MN5523	West End	Open Lithic		ONE
5MN5526	West End	Open Lithic		ONE
5MN5528	West End	Open Lithic		ONE
5MN5530	West End	Open Lithic		ONE
5MN5531	West End	Open Lithic		ONE
5MN5534	West End	Open Lithic		ONE
5MN5536	West End	Open Lithic		ONE
5MN5537	West End	Open Lithic		ONE
5MN5541	West End	Open Lithic		ONE
5MN5543	West End	Open Camp		ONE
5MN5551	West End	Open Lithic		ONE
5MN5567	Uncompahgre	Open Lithic		ONE
5MN5569	Uncompahgre	Open Lithic		ONE
5MN5573	Uncompahgre	Open Lithic		ONE
5MN5575	Uncompahgre	Open Lithic		ONE
5MN5577	Uncompahgre	Open Lithic		ONE
5MN5579	Uncompahgre	Open Lithic		ONE
5MN5580	Uncompahgre	Open Lithic		ONE
5MN5586	Uncompahgre	Historic, Trash Scatter		ONE
5MN5588	Uncompahgre	Open Lithic		ONE
5MN5606	Uncompahgre	Historic, Trash Scatter		ONE
5MN5614	Ouray	Open Lithic		ONE
5MN5615	Ouray	Open Lithic		ONE
5MN5616	Ouray	Open Camp		ONE
5MN5617	Ouray	Open Lithic		ONE
5MN5618	Ouray	Open Lithic		ONE
5MN5619	Ouray	Open Lithic		ONE
5MN5620	Ouray	Open Lithic		ONE
5MN5621	Ouray	Open Lithic		ONE
5MN5622	Ouray	Open Lithic		ONE
5MN5623	Ouray	Open Lithic		ONE
5MN5624	Ouray	Open Lithic		ONE

Appendix Table 5. Uncompahgre Field Office: Sites Classified for Discharged from Management.

Site Number	Landscape Unit	Site Type	Site Name	NRHP Status
5MN5650	West End	Sheltered Camp		FNE
5MN5653	West End	Open Lithic		ONE
5MN5659	West End	Open Lithic		ONE
5MN5661	West End	Open Lithic		ONE
5MN5689	DENCA	Open Camp		ONE
5MN5691	DENCA	Open Lithic		ONE
5MN5698	West End	Open Camp		ONE
5MN5699	West End	Open Lithic		ONE
5MN5700	Uncompahgre	Isolated Feature		FNE
5MN5724	Uncompahgre	Open Lithic		ONE
5MN5728	Uncompahgre	Open Lithic		ONE
5MN5729	Uncompahgre	Historic, Camp		ONE
5MN5733	West End	Open Camp		ONE
5MN5734	West End	Open Lithic		ONE
5MN5744	Uncompahgre	Historic, Trash Scatter		ONE
5MN5745	Uncompahgre	Open Lithic		ONE
5MN5746	Uncompahgre	Open Lithic		ONE
5MN5748	Uncompahgre	Historic, Trash Scatter		ONE
5MN5749	Uncompahgre	Open Lithic		ONE
5MN5753	West End	Historic, Rock Art	Campbell Rock	FNE
5MN577	Uncompahgre	Open Lithic		FNE
5MN578	Uncompahgre	Open Lithic		FNE
5MN5782	West End	Historic, Camp		ONE
5MN5783	West End	Historic, Lambing Pen		ONE
5MN5784	West End	Historic, Shephard Camp		ONE
5MN579	Uncompahgre	Open Lithic		FNE
5MN5792	West End	Open Lithic		ONE
5MN5793	West End	Open Lithic		ONE
5MN5794	West End	Open Lithic		ONE
5MN5795	West End	Open Lithic		ONE
5MN5797	West End	Open Lithic		ONE
5MN580	DENCA	Open Lithic		FNE
5MN5800	West End	Open Lithic		ONE
5MN5802	West End	Historic, Trash Dump		ONE
5MN5803	West End	Open Camp		ONE
5MN5804	West End	Historic, Trash Scatter		ONE
5MN581	Uncompahgre	Open Lithic		FNE
5MN5818	West End	Open Camp		ONE

Appendix Table 5. Uncompahgre Field Office: Sites Classified for Discharged from Management.

Site Number	Landscape Unit	Site Type	Site Name	NRHP Status
5MN5819	West End	Open Lithic		ONE
5MN582	DENCA	Open Lithic		FNE
5MN5821	West End	Quarry		ONE
5MN5822	West End	Historic, Water CONTROL		ONE
5MN5823	West End	Open Camp		ONE
5MN5824	West End	Open Lithic; Historic, Mining Camp		ONE
5MN583	DENCA	Open Lithic; Historic, Isolated Feature		FNE
5MN584	DENCA	Open Lithic		FNE
5MN5841	West End	Open Lithic		ONE
5MN5842	West End	Historic, Mining PROSPECT		ONE
5MN5845	Uncompahgre	Open Lithic		ONE
5MN5846	Uncompahgre	Open Lithic		ONE
5MN586	DENCA	Open Lithic		FNE
5MN5865	Uncompahgre	Open Lithic		ONE
5MN5866	Uncompahgre	Open Lithic; Historic, Isolated Find		ONE
5MN5867	Uncompahgre	Open Lithic; Historic, Isolated Find		ONE
5MN5868	Uncompahgre	Open Camp		ONE
5MN587	Uncompahgre	Open Camp?; Historic, Wall		FNE
5MN5874	West End	Open Camp		ONE
5MN5877	West End	Open Lithic		ONE
5MN588	Uncompahgre	Open Lithic; Historic, Shelter		FNE
5MN589	Uncompahgre	Sheltered Lithic		FNE
5MN5906	West End	Isolated Feature		FNE
5MN594	Uncompahgre	Historic, Rock Alignment		FNE
5MN597	DENCA	Open Lithic		FNE
5MN5972	Uncompahgre	Historic, Camp		ONE
5MN5973	Uncompahgre	Open Camp		ONE
5MN5974	Uncompahgre	Open Camp		ONE
5MN598	DENCA	Open Lithic		FNE
5MN599	DENCA	Open Lithic		FNE
5MN5994	West End	Open Camp		ONE
5MN5997	West End	Open Camp		ONE
5MN5999	West End	Open Camp		ONE
5MN600	DENCA	Open Lithic		FNE
5MN6002	West End	Open Camp		ONE
5MN6038	West End	Open Camp		ONE
5MN6039	West End	Open Lithic		ONE
5MN6040	West End	Open Camp; Historic, Camp		ONE

Appendix Table 5. Uncompahgre Field Office: Sites Classified for Discharged from Management.

Site Number	Landscape Unit	Site Type	Site Name	NRHP Status
5MN611	West End	Open Lithic		ONE
5MN6115	West End	Historic, Camp		ONE
5MN6120	West End	Open Camp		ONE
5MN6232	West End	Open Lithic		ONE
5MN6264	West End	Sheltered Camp		ONE
5MN6273	West End	Open Lithic		ONE
5MN6273	West End	Open Lithic		ONE
5MN6289	West End	Open Camp		ONE
5MN6291	West End	Open Lithic		ONE
5MN6292	West End	Open Lithic		ONE
5MN6294	West End	Open Camp		ONE
5MN6296	West End	Open Lithic		ONE
5MN6297	West End	Open Camp		ONE
5MN6394	West End	Open Lithic		FNE
5MN6395	West End	Open Lithic; Historic, Trash Scatter		FNE
5MN6424	Uncompahgre	Open Lithic		ONE
5MN6428	Uncompahgre	Historic, Camp		ONE
5MN6445	West End	Open Camp	Wishing for a Mano Site	ONE
5MN6447	West End	Open Lithic		ONE
5MN6448	West End	Open Lithic	Hanging Shed	ONE
5MN6449	West End	Open Lithic	Long Mesa I	ONE
5MN6450	West End	Open Lithic		ONE
5MN6455	West End	Historic, Mine	St. Patrick Mine	ONE
5MN6462	West End	Open Lithic		ONE
5MN6463	West End	Isolated Feature		FNE
5MN6465	West End	Open Lithic		ONE
5MN6469	West End	Open Lithic		ONE
5MN6471	West End	Open Lithic		ONE
5MN6475	West End	Open Lithic		ONE
5MN6485	West End	Open Camp		ONE
5MN6486	West End	Open Camp		ONE
5MN6488	West End	Open Lithic		ONE
5MN6490	West End	Open Lithic		ONE
5MN6496	West End	Open Lithic		ONE
5MN6499	Uncompahgre	Open Lithic		ONE
5MN6504	Uncompahgre	Open Lithic		ONE
5MN6512	West End	Open Lithic		ONE
5MN6556	West End	Open Lithic	Wee Lithic Scatter	ONE

Appendix Table 5. Uncompahgre Field Office: Sites Classified for Discharged from Management.

Site Number	Landscape Unit	Site Type	Site Name	NRHP Status
5MN659	West End	Historic, Structure		ONE
5MN6596	West End	Isolated Feature		FNE
5MN6598	West End	Open Lithic		ONE
5MN6599	West End	Open Lithic		ONE
5MN6600	West End	Open Lithic		ONE
5MN6602	Uncompahgre	Open Lithic		ONE
5MN6603	Uncompahgre	Open Lithic		ONE
5MN6648	Uncompahgre	Open Lithic		ONE
5MN6649	Uncompahgre	Open Camp		ONE
5MN6651	Uncompahgre	Open Camp		ONE
5MN666	Uncompahgre	Open Lithic		FNE
5MN6661	Uncompahgre	Open Camp; Historic, Isolated Find		ONE
5MN6663	Uncompahgre	Open Lithic		ONE
5MN6667	Uncompahgre	Open Lithic		ONE
5MN669	Uncompahgre	Open Lithic		FNE
5MN670	Uncompahgre	Open Lithic		FNE
5MN671	Uncompahgre	Open Camp		FNE
5MN672	Uncompahgre	Open Lithic		FNE
5MN673	Uncompahgre	Open Lithic		FNE
5MN674	Uncompahgre	Open Lithic		FNE
5MN675	Uncompahgre	Open Lithic		FNE
5MN677	Uncompahgre	Open Lithic		FNE
5MN678	Uncompahgre	Open Lithic		FNE
5MN679	Ouray	Open Lithic		FNE
5MN680	Ouray	Open Lithic		FNE
5MN681	Ouray	Open Lithic		FNE
5MN683	Ouray	Open Lithic		FNE
5MN6852	West End	Open Lithic		ONE
5MN6855	West End	Open Lithic		ONE
5MN6858	West End	Open Camp		ONE
5MN686	Uncompahgre	Open Camp		ONE
5MN6860	West End	Open Lithic		ONE
5MN6864	West End	Open Lithic		ONE
5MN6865	West End	Open Lithic		ONE
5MN6866	West End	Open Lithic		ONE
5MN6868	West End	Open Lithic		ONE
5MN687	Uncompahgre	Open Lithic		ONE
5MN6871	West End	Open Lithic		ONE

Appendix Table 5. Uncompahgre Field Office: Sites Classified for Discharged from Management.

Site Number	Landscape Unit	Site Type	Site Name	NRHP Status
5MN6873	West End	Open Lithic		ONE
5MN6878	West End	Open Lithic		ONE
5MN6879	West End	Open Lithic		ONE
5MN688	Uncompahgre	Open Camp		ONE
5MN6880	West End	Open Camp		ONE
5MN6881	West End	Open Lithic		ONE
5MN6882	West End	Open Lithic		ONE
5MN6883	West End	Open Camp		ONE
5MN6884	West End	Open Lithic		ONE
5MN6885	West End	Open Camp		ONE
5MN6886	West End	Open Lithic		ONE
5MN6887	West End	Open Lithic		ONE
5MN6888	West End	Open Lithic		ONE
5MN689	Uncompahgre	Open Lithic		ONE
5MN6890	West End	Open Lithic		ONE
5MN6891	West End	Open Lithic		ONE
5MN6892	West End	Open Camp		ONE
5MN6893	West End	Open Camp		ONE
5MN6894	West End	Open Lithic		ONE
5MN6896	West End	Open Camp		ONE
5MN6897	West End	Open Lithic		ONE
5MN6898	West End	Open Lithic		ONE
5MN690	Uncompahgre	Open Lithic		FNE
5MN6901	West End	Open Lithic		ONE
5MN6903	West End	Open Lithic		ONE
5MN6906	West End	Open Lithic		ONE
5MN6907	West End	Open Camp; Historic, Isolated Find		ONE
5MN6909	West End	Open Lithic		ONE
5MN691	Uncompahgre	Open Lithic		FNE
5MN6910	West End	Open Lithic		ONE
5MN6912	West End	Open Camp		ONE
5MN6913	West End	Open Lithic		ONE
5MN6914	West End	Open Lithic		ONE
5MN6915	West End	Open Lithic		ONE
5MN6916	West End	Open Lithic		ONE
5MN6918	West End	Open Lithic		ONE
5MN692	Uncompahgre	Open Lithic		FNE
5MN6922	West End	Open Camp		ONE

Appendix Table 5. Uncompahgre Field Office: Sites Classified for Discharged from Management.

Site Number	Landscape Unit	Site Type	Site Name	NRHP Status
5MN6923	West End	Open Camp		ONE
5MN6926	West End	Open Lithic		ONE
5MN6927	West End	Open Camp		ONE
5MN6928	West End	Open Camp		ONE
5MN693	Uncompahgre	Historic, Corral		FNE
5MN6932	West End	Open Camp		ONE
5MN6933	West End	Open Lithic		ONE
5MN6934	West End	Open Camp		ONE
5MN6935	West End	Open Lithic		ONE
5MN6937	West End	Open Lithic		ONE
5MN6938	West End	Open Lithic		ONE
5MN6939	West End	Open Lithic		ONE
5MN694	Uncompahgre	Open Lithic		FNE
5MN6942	West End	Open Lithic		ONE
5MN6944	West End	Open Lithic		ONE
5MN6947	West End	Open Lithic		ONE
5MN6948	West End	Open Lithic		ONE
5MN695	Uncompahgre	Open Lithic		FNE
5MN6951	West End	Open Lithic		ONE
5MN6952	West End	Open Camp		ONE
5MN6953	West End	Open Camp		ONE
5MN6954	West End	Open Lithic		ONE
5MN6955	West End	Open Camp		ONE
5MN6956	West End	Open Lithic		ONE
5MN6957	West End	Open Lithic		ONE
5MN6959	West End	Open Lithic		ONE
5MN696	Uncompahgre	Open Lithic		FNE
5MN6960	West End	Open Camp		ONE
5MN6963	West End	Open Lithic		ONE
5MN6964	West End	Open Lithic		ONE
5MN6966	West End	Open Lithic		ONE
5MN6967	West End	Open Lithic		ONE
5MN6968	West End	Open Lithic		ONE
5MN6969	West End	Open Lithic		ONE
5MN697	Uncompahgre	Open Lithic; Historic, Fences		FNE
5MN6970	West End	Open Lithic		ONE
5MN6971	West End	Open Lithic		ONE
5MN6972	West End	Open Lithic		ONE

Appendix Table 5. Uncompahgre Field Office: Sites Classified for Discharged from Management.

Site Number	Landscape Unit	Site Type	Site Name	NRHP Status
5MN6973	West End	Open Lithic		ONE
5MN6975	West End	Open Camp		ONE
5MN6977	West End	Open Lithic		ONE
5MN6978	West End	Open Lithic		ONE
5MN6983	West End	Open Camp		ONE
5MN6984	West End	Open Camp		ONE
5MN6985	West End	Open Lithic		ONE
5MN6988	West End	Open Lithic		ONE
5MN6989	West End	Open Lithic		ONE
5MN699	Uncompahgre	Open Lithic		FNE
5MN6991	West End	Open Lithic		ONE
5MN6992	West End	Open Camp		ONE
5MN6993	West End	Open Lithic		ONE
5MN6994	West End	Open Lithic		ONE
5MN6995	West End	Open Camp		ONE
5MN6996	West End	Open Lithic		ONE
5MN6998	West End	Open Camp		ONE
5MN700	Uncompahgre	Open Lithic		FNE
5MN7001	West End	Open Lithic		ONE
5MN7003	West End	Open Lithic		ONE
5MN7005	West End	Open Camp		ONE
5MN7006	West End	Open Lithic		ONE
5MN7007	West End	Open Lithic		ONE
5MN7008	West End	Open Lithic		ONE
5MN7009	West End	Open Lithic		ONE
5MN701	Uncompahgre	Open Lithic		FNE
5MN7010	West End	Open Camp		ONE
5MN7011	West End	Open Camp		ONE
5MN7012	West End	Open Lithic		ONE
5MN7016	West End	Open Lithic		ONE
5MN7017	West End	Open Lithic		ONE
5MN7018	West End	Open Lithic		ONE
5MN7019	West End	Open Camp		ONE
5MN702	Uncompahgre	Open Lithic		FNE
5MN7020	West End	Open Lithic		ONE
5MN7021	West End	Open Lithic		ONE
5MN7023	West End	Open Camp		ONE
5MN7024	West End	Open Lithic		ONE

Appendix Table 5. Uncompahgre Field Office: Sites Classified for Discharged from Management.

Site Number	Landscape Unit	Site Type	Site Name	NRHP Status
5MN7025	West End	Open Lithic		ONE
5MN7028	West End	Open Lithic		ONE
5MN703	Uncompahgre	Open Architectural		FNE
5MN7030	West End	Open Lithic		ONE
5MN704	Uncompahgre	Open Lithic		FNE
5MN705	Uncompahgre	Open Lithic		FNE
5MN7055	Uncompahgre	Open Camp; Historic Trash Scatter		ONE
5MN7056.1	Uncompahgre	Historic, Ditch	Dry Creek Ditch (Segment)~Baldy Ditch (Segment)	ONE
5MN706	Uncompahgre	Open Lithic		FNE
5MN7060	Uncompahgre	Open Lithic		ONE
5MN7062	Uncompahgre	Open Lithic		ONE
5MN7063	Uncompahgre	Open Lithic		ONE
5MN707	Uncompahgre	Open Lithic		FNE
5MN709	Uncompahgre	Open Lithic		FNE
5MN710	Uncompahgre	Open Lithic		FNE
5MN711	Uncompahgre	Open Lithic		FNE
5MN712	Uncompahgre	Open Lithic		FNE
5MN713	Uncompahgre	Open Lithic		FNE
5MN714	Uncompahgre	Open Lithic		FNE
5MN7161	Uncompahgre	Open Lithic	Monster Truck Booyah, Site 1	ONE
5MN7162	Uncompahgre	Open Lithic	Monster Truck Booyah, Site 2	ONE
5MN7163	Uncompahgre	Open Lithic	Monster Truck Booyah, Site 3	ONE
5MN7164	Uncompahgre	Open Lithic	Monster Truck Booyah, Site 4	ONE
5MN7167	Uncompahgre	Open Lithic		ONE
5MN720	Uncompahgre	Open Lithic		FNE
5MN721	Uncompahgre	Open Lithic		ONE
5MN722	Uncompahgre	Open Lithic		ONE
5MN725	Uncompahgre	Open Lithic		FNE
5MN7250	Uncompahgre	Open Lithic	Site 5, Dry Creek Basin Roads Survey	ONE
5MN7251	Uncompahgre	Open Lithic	Site 4 Dry Creek Basin Roads Survey	ONE
5MN7252	Uncompahgre	Open Lithic	Site 3, Dry Creek Basin Roads Survey	ONE
5MN7253	Uncompahgre	Open Lithic	Site 2, Dry Creek Basin Roads Survey	ONE
5MN7254	Uncompahgre	Open Lithic	Site 1, Dry Creek Basin Roads Survey	ONE

Appendix Table 5. Uncompahgre Field Office: Sites Classified for Discharged from Management.

Site Number	Landscape Unit	Site Type	Site Name	NRHP Status
5MN7256	Uncompahgre	Open Lithic		ONE
5MN7323	West End	Open Lithic		FNE
5MN7405	Uncompahgre	Open Lithic		ONE
5MN7407	Uncompahgre	Open Camp		ONE
5MN7408	Uncompahgre	Open Lithic		ONE
5MN7411	Uncompahgre	Open Camp		ONE
5MN7420	Uncompahgre	Open Camp; Historic, Temporary Camp		ONE
5MN7421	Uncompahgre	Open Camp		ONE
5MN7422	Uncompahgre	Open Camp		ONE
5MN7423	Uncompahgre	Open Lithic; Historic, Habitation		ONE
5MN7431	Uncompahgre	Open Lithic		FNE
5MN7433	Uncompahgre	Open Camp		FNE
5MN7576	Uncompahgre	Open Camp		ONE
5MN7577	Uncompahgre	Open Lithic; Historic, Isolated Find		ONE
5MN7582	Uncompahgre	Open Camp		ONE
5MN7583	Uncompahgre	Open Lithic		ONE
5MN7584	Uncompahgre	Open Lithic		ONE
5MN7585	Uncompahgre	Open Lithic		ONE
5MN7586	Uncompahgre	Open Lithic		ONE
5MN7587	Uncompahgre	Open Lithic		ONE
5MN7588	Uncompahgre	Open Lithic		ONE
5MN7589	Uncompahgre	Historic, Sheep Camp		ONE
5MN7590	Uncompahgre	Open Lithic		ONE
5MN7591	Uncompahgre	Open Camp		ONE
5MN7592	Uncompahgre	Open Lithic		ONE
5MN7594	Uncompahgre	Open Lithic		ONE
5MN7597	Uncompahgre	Open Lithic		ONE
5MN7600	Uncompahgre	Open Lithic		ONE
5MN7601	Uncompahgre	Open Camp		ONE
5MN7602	Uncompahgre	Historic, Herding Camp		ONE
5MN7603	Uncompahgre	Open Camp		ONE
5MN7658	Uncompahgre	Open Lithic		ONE
5MN7761	Uncompahgre	Open Lithic		ONE
5MN7762	Uncompahgre	Open Lithic		ONE
5MN7763	Uncompahgre	Open Lithic		ONE
5MN7764	Uncompahgre	Open Lithic		ONE
5MN7765	West End	Open Camp		ONE
5MN7805	Uncompahgre	Open Lithic		ONE

Appendix Table 5. Uncompahgre Field Office: Sites Classified for Discharged from Management.

Site Number	Landscape Unit	Site Type	Site Name	NRHP Status
5MN7848	West End	Historic, Mining Complex	Fairy King Mine	ONE
5MN7849	West End	Historic, Mining Complex	Red Fox Prospect	ONE
5MN7852	West End	Historic, Mining Complex		ONE
5MN7859	West End	Historic, Mining Complex		ONE
5MN7861	West End	Historic, Mining Complex	Cannon Ball Mine	ONE
5MN7862	West End	Historic, Mining Complex	High Ball Mine	ONE
5MN7863	West End	Historic, Mining Complex		ONE
5MN7867	West End	Historic, Mining Complex		ONE
5MN7868	West End	Historic, Mining Complex	Incline, Firebird Claim	ONE
5MN7869	West End	Historic, Mining Complex	Unknown No. 9 Mine	ONE
5MN7875	West End	Open Lithic		ONE
5MN7880	West End	Open Lithic		ONE
5MN7890	Uncompahgre	Open Camp		FNE
5MN79	West End	Open Architectural		ONE
5MN7910	Uncompahgre	Open Lithic		FNE
5MN7913	Uncompahgre	Open Lithic		FNE
5MN7985	West End	Open Camp		ONE
5MN8	Uncompahgre	Sheltered Lithic		ONE
5MN80	West End	Open Camp		ONE
5MN803	West End	Open Lithic		FNE
5MN8050	West End	Lithic Scatter		FNE
5MN8051/5SM5 315	West End	Lithic Scatter		FNE
5MN8053/5SM5 317	West End	Open Lithic Scatter		FNE
5MN8054/5SM5 318	West End	Open Lithic Scatter		FNE
5MN8105	West End	Open Camp		ONE
5MN8109	West End	Open Lithic; Historic, Trash Dump		ONE
5MN8110	West End	Historic, Temporary Camp		ONE
5MN8113	West End	Open Lithic		ONE
5MN8133	West End	Historic, Mining Complex	Bunker Mine	FNE
5MN8135	West End	Historic, Mining Complex	Buckshot Mine	FNE
5MN8139	West End	Historic, Mine	Peggy Mine	FNE
5MN8146	West End	Historic, Mine		FNE
5MN8149	West End	Historic, Mine	Paradox View No. 1 Mine	FNE
5MN8150	West End	Historic, Mine	Paradox View No. 1 Mine: Lower Workings	FNE
5MN8151	West End	Historic, Mine	Columbus Mine	FNE
5MN8152	West End	Historic, Mine	Bitter Creek Group Mine	FNE
5MN8153	West End	Historic, Mine	Van Mine: West Workings	FNE

Appendix Table 5. Uncompahgre Field Office: Sites Classified for Discharged from Management.

Site Number	Landscape Unit	Site Type	Site Name	NRHP Status
5MN8155	West End	Historic, Mine	Donna K Mine	FNE
5MN8169	Uncompahgre	Open Camp		ONE
5MN817	West End	Open Lithic		FNE
5MN8173	West End	Historic, Mining Camp	Cripple Creek Camp	FNE
5MN8176	West End	Historic, Mining Camp	Bitter Creek Camp: Lower Residence	FNE
5MN8177	West End	Historic, Mining Camp	Bitter Creek Camp: Upper Residence	FNE
5MN8178	West End	Historic, Mine		FNE
5MN8201	West End	Open Lithic; Historic, Trash Scatter		ONE
5MN821	West End	Open Camp		FNE
5MN8218	West End	Historic, PROSPECT PITS		ONE
5MN8231	West End	Open Lithic		ONE
5MN8232	West End	Open Lithic		ONE
5MN8233	West End	Open Camp		ONE
5MN8239	West End	Open Lithic		ONE
5MN8241	West End	Open Lithic; Historic, Isolated Find		ONE
5MN8248	West End	Open Lithic		FNE
5MN8249	West End	Open Camp		ONE
5MN825	DENCA	Historic, Powder House	Delta Powdermagazine	FNE
5MN8255	West End	Open Camp		ONE
5MN8257	West End	Open Lithic; Historic, Trash Scatter		ONE
5MN8259	West End	Open Lithic		ONE
5MN8260	West End	Open Lithic		ONE
5MN8262.1	West End	Historic, Road	Unnamed Road - Segment	ONE
5MN8305	West End	Lithic Scatter		FNE
5MN8307	West End	Lithic Scatter		FNE
5MN8308	West End	Lithic Scatter		FNE
5MN8309	West End	Lithic Scatter		FNE
5MN8310	West End	Lithic Scatter		FNE
5MN8313	West End	Lithic Scatter		FNE
5MN8315	West End	Lithic Scatter		FNE
5MN8317	West End	Lithic Scatter		FNE
5MN8320	West End	Lithic Scatter		FNE
5MN8321	West End	Lithic Scatter		FNE
5MN8322	West End	Lithic Scatter		FNE
5MN8332	West End	Lithic Scatter		FNE
5MN8373	West End	Open Lithic; Historic, Isolated Find		ONE
5MN840	West End	Open Lithic		FNE

Appendix Table 5. Uncompahgre Field Office: Sites Classified for Discharged from Management.

Site Number	Landscape Unit	Site Type	Site Name	NRHP Status
5MN842	West End	Open Camp		FNE
5MN8424	West End	Historic, Mine		ONE
5MN8426	West End	Open Camp		ONE
5MN8433	West End	Open Architectural		FNE
5MN8437	West End	Open Lithic		ONE
5MN8444	West End	Historic, Mine	Donna K Mine	ONE
5MN8456	West End	Historic, Trash Dump		ONE
5MN8469	Ouray	Open Lithic		ONE
5MN8470	Ouray	Open Lithic; Historic, Isolated Find		ONE
5MN8473	Ouray	Historic, Trash Dump		ONE
5MN849	West End	Open Lithic		FNE
5MN850	West End	Open Lithic		FNE
5MN851	West End	Open Lithic		FNE
5MN852	West End	Open Lithic		FNE
5MN853	West End	Open Lithic		FNE
5MN854	West End	Open Lithic		FNE
5MN855	West End	Open Lithic		FNE
5MN856	West End	Open Lithic		FNE
5MN857	West End	Open Lithic		FNE
5MN858	West End	Open Lithic		ONE
5MN8678	West End	Open Camp		ONE
5MN8716	West End	Historic, Mine	Wedge Mine	ONE
5MN8717	Ouray	Historic, Ditch	Supply Ditch AP2	ONE
5MN8738	Ouray	Open Camp		ONE
5MN8759	West End	Open Camp		ONE
5MN8763	West End	Open Lithic		ONE
5MN8765	West End	Open Lithic		ONE
5MN8769	West End	Open Lithic		ONE
5MN8772	West End	Open Lithic; Historic, Isolated Feature		ONE
5MN8775	West End	Open Lithic		ONE
5MN8776	West End	Open Lithic		ONE
5MN8777	West End	Open Lithic		ONE
5MN900	West End	Open Camp		NA
5MN9089.1	West End	Historic, Transmission Line	Unnamed Utility Line - Segment	ONE
5MN91	West End	Open Lithic		ONE
5MN917	West End	Open Lithic		FNE
5MN918	West End	Open Lithic		FNE

Appendix Table 5. Uncompahgre Field Office: Sites Classified for Discharged from Management.

Site Number	Landscape Unit	Site Type	Site Name	NRHP Status
5MN919	West End	Open Lithic		ONE
5MN92	West End	Open Lithic		ONE
5MN920	West End	Open Lithic		ONE
5MN921	West End	Open Lithic		ONE
5MN922	West End	Open Lithic		ONE
5MN923	West End	Open Lithic		FNE
5MN9235	West End	Waste-Rock Disposal Adit - Uranium Mine	Dolores Mine, Wast-Rock Disposal Adit	FNE
5MN9236	West End	Vent Shaft - Uranium Mine		FNE
5MN9238	West End	Vent Shaft - Uranium Mine		FNE
5MN9239	West End	Vent Shaft - Uranium Mine		FNE
5MN924	West End	Open Lithic		FNE
5MN9240	West End	Uranium Mine	First National Bank Mine	FNE
5MN9241	West End	Vent Shaft - Uranium Mine		FNE
5MN9242	West End	Vent Shaft - Uranium Mine		FNE
5MN9245	West End	Vent Shaft - Uranium Mine		FNE
5MN9246	West End	Vent Shaft - Uranium Mine		FNE
5MN9247	West End	Vent Shaft - Uranium Mine		FNE
5MN9248	West End	Vent Shaft - Uranium Mine		FNE
5MN9249	West End	Vent Shaft - Uranium Mine		FNE
5MN925	West End	Open Camp		FNE
5MN9250	West End	Uranium Mine	TNT No. 2 Mine	FNE
5MN9251	West End	Vent Shaft - Uranium Mine		FNE
5MN926	West End	Open Lithic		FNE
5MN927	West End	Open Lithic		FNE
5MN928	West End	Open Lithic		FNE
5MN929	West End	Open Lithic		FNE
5MN93	West End	Open Lithic		ONE
5MN930	West End	Open Lithic		FNE
5MN931	West End	Open Camp		FNE
5MN932	West End	Open Lithic		FNE
5MN933	West End	Open Lithic		FNE
5MN934	West End	Open Lithic		FNE
5MN935	West End	Open Lithic		FNE
5MN936	West End	Open Lithic		FNE
5MN937	West End	Open Lithic		FNE
5MN938	West End	Open Lithic		FNE
5MN939	West End	Open Lithic		FNE
5MN94	West End	Open Lithic		ONE

Appendix Table 5. Uncompahgre Field Office: Sites Classified for Discharged from Management.

Site Number	Landscape Unit	Site Type	Site Name	NRHP Status
5MN940	West End	Open Lithic		FNE
5MN941	West End	Open Lithic		FNE
5MN942	West End	Open Lithic		FNE
5MN943	West End	Open Lithic		FNE
5MN944	West End	Open Lithic		FNE
5MN945	West End	Open Lithic		FNE
5MN946	West End	Open Lithic		FNE
5MN947	West End	Open Lithic		FNE
5MN948	West End	Open Lithic		FNE
5MN949	West End	Open Lithic		FNE
5MN950	West End	Open Lithic		FNE
5MN951	West End	Open Lithic		FNE
5MN952	West End	Open Lithic		FNE
5MN953	West End	Open Lithic		ONE
5MN954	West End	Historic, Temporary Camp		FNE
5MN955	West End	Open Lithic		FNE
5MN956	West End	Open Lithic		FNE
5MN957	West End	Open Lithic		FNE
5MN958	West End	Open Lithic		FNE
5MN959	West End	Open Camp?; Historic, Temporary Camp		FNE
5MN960	West End	Open Lithic		FNE
5MN961	West End	Open Lithic		FNE
5MN962	West End	Open Lithic		FNE
5MN963	West End	Open Lithic		FNE
5MN964	West End	Open Lithic		FNE
5MN965	West End	Open Lithic		FNE
5MN966	West End	Open Lithic		FNE
5MN967	West End	Open Lithic		FNE
5MN968	West End	Open Architectural, Open Lithic		ONE
5MN969	West End	Open Lithic		FNE
5MN970	West End	Open Lithic		ONE
5MN971	West End	Open Lithic		FNE
5MN972	West End	Open Lithic		FNE
5MN973	West End	Open Lithic; Historic?		FNE
5MN974	West End	Open Lithic		FNE
5MN975	West End	Open Lithic		FNE
5MN976	West End	Open Lithic		FNE
5MN977	West End	Open Lithic		FNE

Appendix Table 5. Uncompahgre Field Office: Sites Classified for Discharged from Management.

Site Number	Landscape Unit	Site Type	Site Name	NRHP Status
5MN978	West End	Open Lithic		FNE
5MN979	West End	Open Lithic		FNE
5MN980	West End	Open Lithic		FNE
5MN981	West End	Open Lithic		FNE
5MN982	West End	Open Lithic		FNE
5MN983	West End	Open Lithic		FNE
5MN984	West End	Open Lithic		FNE
5MN985	West End	Open Lithic		FNE
5MN986	West End	Open Lithic		FNE
5MN987	West End	Open Lithic		FNE
5MN988	West End	Open Lithic		FNE
5MN989	West End	Open Lithic		FNE
5MN990	West End	Open Lithic		FNE
5MN991	West End	Open Lithic		FNE
5MN992	West End	Open Lithic		FNE
5MN993	West End	Open Lithic		FNE
5MN994	West End	Open Lithic		FNE
5MN995	West End	Open Lithic		FNE
5MN996	West End	Open Lithic		FNE
5MN997	West End	Historic, Camp		FNE
5MN998	West End	Open Lithic		FNE
5MN999	West End	Open Lithic		FNE
5OR1051	Ouray	Open Lithic		ONE
5OR1067	Ouray	Historic, Dump		ONE
5OR1150	Ouray	Open Camp		ONE
5OR1152	Ouray	Open Lithic		ONE
5OR1153	Ouray	Historic, Water Control		ONE
5OR122	Ouray	Historic, Mine	Colona Mine	FNE
5OR1422	Uncompahgre	Open Lithic		ONE
5OR1433	Ouray	Historic, Corral		FNE
5OR1447	Uncompahgre	Open Camp		ONE
5OR1449	Uncompahgre	Open Lithic		ONE
5OR1450	Uncompahgre	Open Lithic		ONE
5OR1451	Uncompahgre	Open Camp		ONE
5OR1452	Uncompahgre	Open Lithic		ONE
5OR1453	Uncompahgre	Open Lithic		ONE
5OR1499	Uncompahgre	Historic, Herding Camp		ONE
5OR1954	Uncompahgre	Open Lithic		ONE

Appendix Table 5. Uncompahgre Field Office: Sites Classified for Discharged from Management.

Site Number	Landscape Unit	Site Type	Site Name	NRHP Status
5OR1959	Ouray	Open Lithic		ONE
5OR196	Ouray	Isolated Find; Historic; Quarry		FNE
5OR1963	Uncompahgre	Open Lithic		ONE
5OR1965	Uncompahgre	Open Lithic		ONE
5OR1966	Uncompahgre	Open Lithic		ONE
5OR1968	Uncompahgre	Open Lithic; Historic, Huting Camp		ONE
5OR1971	Uncompahgre	Open Lithic		ONE
5OR1972.1	Uncompahgre	Historic, Two Track Road	Unnamed Road Segment	ONE
5OR36	Ouray	Open Lithic		FNE
5OR37	Ouray	Open Lithic		FNE
5OR38	Ouray	Open Lithic		FNE
5OR39	Ouray	Open Lithic		FNE
5OR41	Ouray	Open Lithic		FNE
5OR42	Ouray	Isolated Find; Historic, Brush Corral		FNE
5OR421	Ouray	Homestead	Hunt Ranch	FNE
5OR456	Ouray	Historic, Trash Scatter		FNE
5OR464.1	Ouray	Historic, Road	Unnamed Road Segment	ONE
5OR525	Uncompahgre	Open Lithic		FNE
5OR575	Uncompahgre	Open Lithic		FNE
5OR634	Uncompahgre	Open Lithic		FNE
5OR660	Uncompahgre	Open Camp		FNE
5OR661	Uncompahgre	Open Lithic		FNE
5OR662	Uncompahgre	Open Lithic; Historic, Dugout		FNE
5OR695	Uncompahgre	Open Lithic		FNE
5OR696	Uncompahgre	Open Lithic		FNE
5OR697	Uncompahgre	Open Lithic		FNE
5OR712	Uncompahgre	Open Lithic; Historic Trash Scatter		FNE
5OR717	Uncompahgre	Open Lithic		FNE
5OR732	Uncompahgre	Open Camp		FNE
5OR733	Uncompahgre	Open Lithic		FNE
5OR761	Uncompahgre	Open Lithic		FNE
5OR86	Uncompahgre	Open Lithic		FNE
5OR87	Uncompahgre	Open Lithic		FNE
5OR870	Uncompahgre	Open Camp		FNE
5OR871	Uncompahgre	Open Lithic		FNE
5OR88	Uncompahgre	Open Lithic		FNE
5SM1439	West End	Open Lithic		ONE
5SM1465	West End	Open Lithic		ONE

Appendix Table 5. Uncompahgre Field Office: Sites Classified for Discharged from Management.

Site Number	Landscape Unit	Site Type	Site Name	NRHP Status
5SM1524	West End	Open Camp		ONE
5SM1525	West End	Lithic Quarry		ONE
5SM1532	West End	Open Lithic		ONE
5SM183	West End	Open Camp		ONE
5SM203	West End	Historic, Mine	Dorie Mine	FNE
5SM2030.3	West End	Historic, Railroad	Rio Grande Southern Railroad	ONE
5SM204	West End	Historic, Habitation		FNE
5SM2139	West End	Open Lithic		ONE
5SM2140	West End	Open Lithic		ONE
5SM2143	West End	Open Camp; Historic, Logging Camp		ONE
5SM2415	West End	Open Camp		ONE
5SM2436	West End	Open Camp		ONE
5SM256	West End	Historic, Mine	Vanadium #11	ONE
5SM2593	West End	Historic, Trash Scatter		ONE
5SM2594	West End	Historic, Log Structure		ONE
5SM2658	West End	Historic, Road	Nelson Road and Bridge Abutment	ONE
5SM2667	West End	Open Lithic		ONE
5SM2668	West End	Open Lithic		ONE
5SM2672	West End	Open Camp		ONE
5SM2673	West End	Stone Quarry		ONE
5SM2695	West End	Open Lithic		ONE
5SM2698	West End	Open Camp		ONE
5SM2818	West End	Historic, Mine	BLM Claims	ONE
5SM2819	West End	Historic, Mine	Impson	ONE
5SM2821	West End	Historic, Mine	Blue Bird	ONE
5SM2823	West End	Historic, Mine	BLM Mine Claims	ONE
5SM2825	West End	Historic, Mine	Wildcat	ONE
5SM2829	West End	Historic, Mine	BLM Claims	ONE
5SM2866	West End	Historic, Mine	Omega	ONE
5SM2867	West End	Historic, Mine	Vanadis #1	ONE
5SM2869	West End	Historic, Mine	Fall Creek #1-#4	ONE
5SM340	West End	Open Camp		ONE
5SM3412	West End	Open Lithic		ONE
5SM3448	West End	Open Lithic		ONE
5SM348	West End	Open Lithic		ONE
5SM3491	West End	Open Lithic		ONE
5SM3493	West End	Open Lithic		ONE

Appendix Table 5. Uncompahgre Field Office: Sites Classified for Discharged from Management.

Site Number	Landscape Unit	Site Type	Site Name	NRHP Status
5SM3496	West End	Open Camp		FNE
5SM3499	West End	Open Lithic		FNE
5SM353	West End	Open Camp; Historic, Sawmill		ONE
5SM356	West End	Open Lithic		ONE
5SM3610	West End	Quarry?		ONE
5SM3611	West End	Open Camp		ONE
5SM3612	West End	Open Lithic		ONE
5SM3613	West End	Open Camp		ONE
5SM3615	West End	Open Camp		ONE
5SM3616	West End	Open Lithic		ONE
5SM3617	West End	Open Camp		ONE
5SM3619	West End	Open Lithic		ONE
5SM3620	West End	Open Camp		ONE
5SM3621	West End	Open Architectural, Open Lithic		ONE
5SM3658	West End	Open Lithic		ONE
5SM3663	West End	Open Lithic		ONE
5SM3664	West End	Open Lithic		ONE
5SM3861	West End	Open Camp; Historic, Trash Dump		FNE
5SM3873.1	West End	Historic, Wagon Road	Homestead Wagon Trail	ONE
5SM3882	West End	Open Lithic		ONE
5SM3891	West End	Open Lithic		FNE
5SM3962	West End	Open Lithic		ONE
5SM3964	West End	Open Camp		ONE
5SM3966	West End	Open Lithic		ONE
5SM3967	West End	Open Lithic		ONE
5SM3972	West End	Open Lithic		ONE
5SM3976	West End	Open Camp		ONE
5SM3980	West End	Open Lithic		ONE
5SM3985	West End	Open Camp		ONE
5SM3986	West End	Open Camp		ONE
5SM3988	West End	Open Camp		ONE
5SM3990	West End	Open Lithic		ONE
5SM4003	West End	Open Lithic		ONE
5SM4004	West End	Open Lithic		ONE
5SM4006	West End	Open Camp		ONE
5SM4007	West End	Open Lithic		ONE
5SM4038	West End	Open Camp		ONE
5SM4039	West End	Open Lithic		ONE

Appendix Table 5. Uncompahgre Field Office: Sites Classified for Discharged from Management.

Site Number	Landscape Unit	Site Type	Site Name	NRHP Status
5SM4040	West End	Open Camp		FNE
5SM4080	West End	Open Lithic		ONE
5SM4081	West End	Open Camp; Historic, Habitation		ONE
5SM4086	West End	Open Lithic		ONE
5SM4087	West End	Open Lithic		ONE
5SM4089	West End	Open Lithic		ONE
5SM4118	West End	Open Camp		ONE
5SM4123	West End	Open Lithic; Historic, Trash Scatter		ONE
5SM4126	West End	Sheltered Camp		ONE
5SM4127	West End	Open Lithic		ONE
5SM4128	West End	Open Camp		ONE
5SM4130	West End	Open Camp		ONE
5SM4132	West End	Open Camp		ONE
5SM4133	West End	Open Camp		ONE
5SM4134	West End	Open Lithic		ONE
5SM4135	West End	Open Camp		ONE
5SM4136	West End	Open Lithic		ONE
5SM4137	West End	Open Lithic		ONE
5SM4183	West End	Open Lithic		FNE
5SM4188	West End	Historic, Camp	Historic Camp	FNE
5SM4193	West End	Open Lithic		ONE
5SM4194	West End	Open Camp		ONE
5SM4195	West End	Open Lithic		ONE
5SM4340	West End	Open Lithic		ONE
5SM4343	West End	Open Lithic		ONE
5SM4347	West End	Open Lithic		ONE
5SM436	West End	Open Lithic		FNE
5SM437	West End	Open Lithic		FNE
5SM4373	West End	Open Lithic		ONE
5SM4379	West End	Open Lithic		ONE
5SM438	West End	Open Lithic		FNE
5SM4380	West End	Open Lithic		FNE
5SM4384	West End	Open Lithic		ONE
5SM439	West End	Open Lithic		FNE
5SM440	West End	Open Lithic		FNE
5SM441	West End	Open Lithic		FNE
5SM442	West End	Open Lithic		FNE
5SM443	West End	Open Lithic		FNE

Appendix Table 5. Uncompahgre Field Office: Sites Classified for Discharged from Management.

Site Number	Landscape Unit	Site Type	Site Name	NRHP Status
5SM444	West End	Open Camp		FNE
5SM447	West End	Open Lithic		FNE
5SM448	West End	Open Lithic		FNE
5SM449	West End	Open Lithic		FNE
5SM450	West End	Open Lithic		FNE
5SM451	West End	Open Lithic		FNE
5SM452	West End	Open Lithic		FNE
5SM453	West End	Open Camp		FNE
5SM454	West End	Open Lithic		FNE
5SM4540	West End	Open Lithic		ONE
5SM455	West End	Open Lithic		FNE
5SM456	West End	Open Lithic		FNE
5SM459	West End	Open Camp		FNE
5SM461	West End	Open Lithic		FNE
5SM4615	Ouray	Historic, Ranch	Green Mountain Ranch	FNE
5SM462	West End	Open Lithic		FNE
5SM463	West End	Open Lithic		FNE
5SM464	West End	Open Lithic		FNE
5SM465	West End	Open Lithic		FNE
5SM476	West End	Open Lithic		FNE
5SM477	West End	Open Lithic		FNE
5SM478	West End	Open Lithic		FNE
5SM479	West End	Open Lithic		FNE
5SM480	West End	Open Lithic		FNE
5SM481	West End	Open Lithic		FNE
5SM482	West End	Open Lithic		FNE
5SM483	West End	Open Lithic		FNE
5SM490	West End	Open Lithic		FNE
5SM492	West End	Open Lithic		ONE
5SM494	West End	Open Lithic		ONE
5SM5094	West End	Open Lithic		ONE
5SM5095	West End	Open Lithic		ONE
5SM514	West End	Open Camp; Historic, Isolated Find		FNE
5SM517	West End	Open Lithic		FNE
5SM520	West End	Open Camp		ONE
5SM527	West End	Open Camp		ONE
5SM54	West End	Open Lithic		FNE
5SM5414	West End	Lithic Scatter		FNE

Appendix Table 5. Uncompahgre Field Office: Sites Classified for Discharged from Management.

Site Number	Landscape Unit	Site Type	Site Name	NRHP Status
5SM5415	West End	Lithic Scatter		FNE
5SM5416	West End	Lithic Scatter		FNE
5SM5417	West End	Lithic Scatter		FNE
5SM5445	West End	Lithic Scatter		FNE
5SM5446	West End	Lithic Scatter		FNE
5SM5447	West End	Lithic Scatter		FNE
5SM5448	West End	Lithic Scatter		FNE
5SM5450	West End	Lithic Scatter		FNE
5SM5451	West End	Lithic Scatter		FNE
5SM5452	West End	Lithic Scatter		FNE
5SM5459	West End	Lithic Scatter		FNE
5SM5460	West End	Lithic Scatter		FNE
5SM547	West End	Open Camp		ONE
5SM5493	West End	Lithic Reduction		FNE
5SM5494	West End	Lithic Scatter		FNE
5SM5495	West End	Lithic Scatter		FNE
5SM5496	West End	Lithic Scatter		FNE
5SM6362	West End	Open Lithic		ONE
5SM657	West End	Open Camp		ONE
5SM6675	West End	Lithic procurement area	Nucla Cahone Lithic Procurement #1	FNE
5SM6676	West End	Lithic procurement area	Nucla Cahone Lithic Procurement #2	FNE
5SM6677	West End	Lithic Scatter	Nucla Cahone Lithic Procurement #2	FNE
5SM6678	West End	Lithic Scatter	Nucla Cahone Lithic Scatter #3	FNE
5SM6679	West End	Lithic Scatter	Nucla Cahone Lithic Procurement #4	FNE
5SM6680	West End	Lithic Scatter	Nucla Cahone Lithic Scatter #5	FNE
5SM6683	West End	Lithic Scatter	Nucla Cahone Lithic Scatter #8	FNE
5SM6684	West End	Lithic Scatter	Nucla Cahone Lithic Scatter #9	FNE
5SM6685	West End	Lithic Scatter	Nucla Cahone Lithic Scatter #10	FNE
5SM729	West End	Open Lithic		FNE
5SM730	West End	Open Lithic		FNE
5SM748	West End	Open Lithic		FNE
5SM749	West End	Open Lithic		ONE
5SM85	West End	Open Lithic		FNE
5SM987	West End	Open Camp		ONE

Appendix Table 6. Uncompahgre Field Office: Sites Classified as Undetermined Use.

Site Number	Landscape Unit	Site Type	Site Name	NRHP Status
5DT1065	DENCA	Sheltered Camp		OND
5DT108	DENCA	Historic, Wagon Road		NA
5DT1080	Uncompahgre	Open Camp		OND
5DT110	DENCA	Historic, Lime Kiln		NA
5DT112	DENCA	Water Wheel	Water Wheel	NA
5DT1136	Uncompahgre	Historic, Aqueduct	Dry Gulch Aqueduct	NA
5DT125	North Fork	Historic, Tailings Pile	Conine Mine No. 2	FND
5DT129	North Fork	Open Camp		OND
5DT1327	DENCA	Historic, Rock Cairn		OE
5DT147	North Fork	Open Lithic		FND
5DT1708	Uncompahgre	Historic, Dugout		OE
5DT1720	North Fork	Open Lithic		OND
5DT1723	North Fork	Historic, Trash Dump		OND
5DT1738.1	Uncompahgre	Historic, Canal	North Delta Canal (Segment)	OE
5DT269	DENCA	Open Lithic		FND
5DT271	North Fork	Open Camp	Roatcap Game Trail Site	FND
5DT282	North Fork	Open Lithic		NA
5DT283	North Fork	Open Lithic		NA
5DT285	North Fork	Open Lithic		NA
5DT286	North Fork	Open Lithic		NA
5DT287	North Fork	Open Lithic		NA
5DT289	North Fork	Open Lithic		NA
5DT303	DENCA	Sheltered Lithic; Historic, Trash Scatter		NA
5DT304	DENCA	Sheltered Camp		NA
5DT305	DENCA	Open Lithic		NA
5DT306	DENCA	Sheltered Lithic		NA
5DT307	DENCA	Open Camp		NA
5DT308	DENCA	Historic, Cairn		NA
5DT309	DENCA	Sheltered Camp		NA
5DT310	DENCA	Isolated Find; Historic, Cairn		NA
5DT311	DENCA	Open Lithic		NA
5DT312	DENCA	Lithic Quarry		NA
5DT313	DENCA	Open Lithic		NA
5DT317	DENCA	Sheltered Lithic		NA
5DT319	DENCA	Open Lithic; Historic, Camp		NA
5DT320	DENCA	Open Lithic		NA
5DT321	DENCA	Open Lithic; Historic, Root Cellar		NA

Appendix Table 6. Uncompahgre Field Office: Sites Classified as Undetermined Use.

Site Number	Landscape Unit	Site Type	Site Name	NRHP Status
5DT322	DENCA	Historic, Dry-Laid Stone Wall		NA
5DT323	DENCA	Historic, Trail		NA
5DT324	DENCA	Open Lithic		NA
5DT325	DENCA	Sheltered Lithic		NA
5DT326	DENCA	Open Lithic		NA
5DT327	DENCA	Sheltered Lithic		NA
5DT329	DENCA	Open Lithic		FND
5DT332	DENCA	Sheltered Lithic		NA
5DT333	DENCA	Open Lithic; Historic, Camp		NA
5DT334	DENCA	Open Camp		FND
5DT337	DENCA	Sheltered Camp		NA
5DT340	DENCA	Historic, Misc. Structure		NA
5DT40	North Fork	Open Camp		FND
5DT42	North Fork	Open Lithic		NA
5DT43	North Fork	Open Lithic		NA
5DT44	North Fork	Open Lithic		NA
5DT45	North Fork	Open Lithic		NA
5DT540	Uncompahgre	Open Lithic		OND
5DT55	DENCA	Open Lithic		FND
5DT555	DENCA	Lithic Quarry		FND
5DT557	DENCA	Open Camp		FND
5DT568	Uncompahgre	Open Camp		FND
5DT572	DENCA	Lithic Quarry		FND
5DT574	DENCA	Open Lithic		FND
5DT578	DENCA	Open Lithic; Historic, Homestead		FND
5DT660	DENCA	Historic, Cache		FE
5DT694	North Fork	Open Lithic		FND
5DT7	DENCA	Open Camp		FND
5DT748	DENCA	Historic, Bridge	Escalante Canyon Bridge~Gunnison River Bridge	Delisted from National Register
5DT749.1	DENCA	Historic, Railroad	Denver And Rio Grande Western Railroad Bed	NA
5DT771	North Fork	Open Architectural?	Ridge Site	FND
5DT780	Uncompahgre	Historic, Stock And Water Underpass		OE
5DT781	Uncompahgre	Historic, Culvert		OE
5DT854.3	Uncompahgre	Historic, Trail	Old Spanish Trail (North Branch)~Salt Lake Wagon Road (Segment)	OND

Appendix Table 6. Uncompahgre Field Office: Sites Classified as Undetermined Use.

Site Number	Landscape Unit	Site Type	Site Name	NRHP Status
5DT868	North Fork	Open Camp		OND
5DT895	DENCA	Quarry	FOOLS HILL Quarry	FND
5DT979	North Fork	Historic; Habitation		Unknown
5DT980	North Fork	Historic; Habitation		Unknown
5DT987	Uncompahgre	Open Camp		OND
5GN.1334	North Fork	Historic, Dam	Paonia Dam	NA
5GN.4725	North Fork	Open Camp		OND
5ME1137	DENCA	Open Lithic		FND
5ME12582	West End	Open Camp; Historic, Isolated Feature		OND
5ME12583	West End	Open Camp		OND
5ME12584	West End	Open Camp		OND
5ME12586	West End	Open Camp		OND
5ME12587	West End	Open Camp		OND
5ME12602	West End	Open Camp		OND
5ME12603	West End	Open Camp		OND
5ME12604	West End	Open Camp		OND
5ME12606	West End	Open Camp		OND
5ME12607	West End	Open Camp		OND
5ME12609	West End	Open Camp		OND
5ME180	DENCA	Open Lithic		NA
5ME181	DENCA	Open Camp		NA
5ME560	DENCA	Open Lithic		FND
5ME561	DENCA	Open Lithic		NA
5MN1	Uncompahgre	Sheltered Camp		FND
5MN100	West End	Open Camp		NA
5MN101	West End	Open Lithic		NA
5MN1015	West End	Cemetery		FND
5MN102	West End	Open Lithic		NA
5MN103	West End	Open Lithic		NA
5MN1037	Uncompahgre	Open Lithic		NA
5MN1038	Uncompahgre	Open Lithic		NA
5MN104	West End	Open Lithic		NA
5MN105	West End	Open Lithic		NA
5MN1055	West End	Open Lithic		NA
5MN106	West End	Open Lithic		NA
5MN107	West End	Open Lithic		NA
5MN1077	DENCA	Open Lithic		FND
5MN108	West End	Open Lithic		NA

Appendix Table 6. Uncompahgre Field Office: Sites Classified as Undetermined Use.

Site Number	Landscape Unit	Site Type	Site Name	NRHP Status
5MN109	West End	Open Lithic		NA
5MN11	Uncompahgre	Sheltered Camp		NA
5MN110	West End	Open Lithic		NA
5MN1104	West End	Open Lithic		FND
5MN1106	West End	Open Camp		FND
5MN1109	West End	Open Lithic		FND
5MN111	West End	Open Lithic		NA
5MN1110	West End	Open Lithic		FND
5MN1111	West End	Open Lithic		FND
5MN1112	West End	Open Lithic		FND
5MN1117	West End	Sheltered Lithic		FND
5MN1118	West End	Open Camp		FND
5MN112	West End	Open Lithic		NA
5MN1124	West End	Sheltered Camp; Historic, Isolated Find		FND
5MN1127	West End	Open Lithic		FND
5MN1128	West End	Open Lithic		FND
5MN1129	West End	Sheltered Lithic		FND
5MN113	West End	Open Architectural?		NA
5MN1130	West End	Open Lithic		FND
5MN1131	West End	Open Lithic		FND
5MN1132	West End	Open Lithic		FND
5MN1133	West End	Open Lithic		FND
5MN1134	West End	Open Lithic		FND
5MN1135	West End	Open Camp		FND
5MN1138	West End	Open Camp		FND
5MN1139	West End	Open Camp		FND
5MN114	West End	Open Lithic		NA
5MN1143	West End	Open Camp		FND
5MN115	West End	Open Lithic		NA
5MN1154	West End	Lithic Quarry		FND
5MN1155	West End	Open Lithic		FND
5MN1157	West End	Open Camp		FND
5MN116	West End	Open Lithic		NA
5MN1168	West End	Historic, Kiln		FND
5MN1169	West End	Historic, Foundation		FND
5MN117	West End	Open Lithic		NA
5MN1178	West End	Open Camp		FND
5MN118	West End	Stone Quarry?		NA

Appendix Table 6. Uncompahgre Field Office: Sites Classified as Undetermined Use.

Site Number	Landscape Unit	Site Type	Site Name	NRHP Status
5MN1181	West End	Sheltered Lithic; Historic, Shelter		FND
5MN1183	West End	Open Lithic		FND
5MN1185	West End	Open Lithic		FND
5MN119	West End	Open Lithic		NA
5MN1196	West End	Open Lithic		FND
5MN1199	West End	Open Lithic		FND
5MN12	Uncompahgre	Sheltered Camp		NA
5MN120	West End	Open Lithic		NA
5MN121	West End	Open Lithic		NA
5MN1216	Uncompahgre	Open Lithic; Historic, Homestead	John Davis Site #2	OND
5MN1219	Uncompahgre	Lithic Quarry	Flint Caves	NA
5MN122	West End	Open Lithic		NA
5MN1224	West End	Open Architectural		FND
5MN1227	Uncompahgre	Open Lithic		FND
5MN123	West End	Stone Quarry?		NA
5MN1239	Uncompahgre	Open Architectural		FND
5MN124	West End	Open Lithic		NA
5MN1242	Uncompahgre	Open Camp		FND
5MN125	West End	Open Camp		NA
5MN126	West End	Open Camp		NA
5MN1261	West End	Open Camp		FND
5MN1263	West End	Open Lithic		FND
5MN1264	West End	Open Camp		FND
5MN1265	West End	Open Lithic		FND
5MN1266	West End	Open Camp		FND
5MN1268	West End	Open Lithic		FND
5MN1269	West End	Open Lithic		FND
5MN127	West End	Sheltered Lithic		NA
5MN1270	West End	Open Camp		OND
5MN1271	West End	Open Camp		FND
5MN1272	West End	Open Architectural		FND
5MN1273	West End	Open Camp		FND
5MN1278	West End	Open Lithic		FND
5MN1279	West End	Open Lithic		FND
5MN128	West End	Open Lithic		NA
5MN1283	West End	Open Camp		OND
5MN1285	West End	Open Architectural		OND

Appendix Table 6. Uncompahgre Field Office: Sites Classified as Undetermined Use.

Site Number	Landscape Unit	Site Type	Site Name	NRHP Status
5MN1286	West End	Open Camp		FND
5MN1289	West End	Open Camp		FND
5MN129	West End	Open Camp		NA
5MN1290	West End	Open Camp		OND
5MN1292	West End	Open Camp		FND
5MN1293	West End	Open Camp		FND
5MN1294	West End	Open Camp		FND
5MN1295	West End	Open Lithic		FND
5MN1296	West End	Open Lithic		FND
5MN1297	West End	Open Lithic		FND
5MN13	Uncompahgre	Open Camp	Mcmillan Site	FND
5MN130	West End	Open Lithic		NA
5MN131	West End	Open Lithic		NA
5MN132	West End	Open Lithic; Historic, Camp		NA
5MN1324	Uncompahgre	Open Camp		FND
5MN1329	West End	Open Lithic		FND
5MN133	West End	Open Lithic		NA
5MN134	West End	Open Architectural?, Open Lithic		NA
5MN135	West End	Open Camp		NA
5MN136	West End	Open Camp		NA
5MN1363	West End	Historic, Homestead		OND
5MN1364	West End	Sheltered Camp; Historic, Camp?		FND
5MN137	West End	Open Lithic		NA
5MN138	West End	Open Camp		NA
5MN139	West End	Open Lithic		NA
5MN140	West End	Open Camp		NA
5MN141	West End	Open Camp		NA
5MN142	West End	Open Lithic		NA
5MN143	West End	Open Camp		NA
5MN144	West End	Open Camp		NA
5MN145	West End	Open Camp		NA
5MN146	West End	Sheltered Camp		NA
5MN148	West End	Open Lithic		NA
5MN1487	West End	Open Lithic		FND
5MN149	West End	Open Lithic		NA
5MN150	West End	Open Lithic		NA
5MN151	West End	Open Lithic		NA

Appendix Table 6. Uncompahgre Field Office: Sites Classified as Undetermined Use.

Site Number	Landscape Unit	Site Type	Site Name	NRHP Status
5MN152	West End	Sheltered Lithic		NA
5MN1524	Uncompahgre	Open Lithic		FND
5MN153	West End	Open Camp		NA
5MN1536	West End	Open Camp		FND
5MN1537	West End	Open Camp		FND
5MN1538	West End	Open Camp		FND
5MN154	West End	Open Lithic		NA
5MN156	West End	Open Lithic		NA
5MN157	West End	Open Lithic		NA
5MN158	West End	Open Lithic		NA
5MN160	West End	Open Lithic		NA
5MN1608.10	Ouray	Historic, Railroad	Denver And Rio Grande Western Railroad, Montrose Branch – Segment	OE
5MN1608.3	Ouray	Historic, Railroad Grade	Denver And Rio Grande Narrow Gauge Railbed: Cimmarron-Montrose Segment	OE
5MN161	West End	Open Lithic		NA
5MN1611	Uncompahgre	Historic, ROCK ART		FND
5MN162	West End	Open Camp		NA
5MN1626	Uncompahgre	Open Lithic		FND
5MN163	West End	Sheltered Camp		NA
5MN1636	West End	Open Camp		FND
5MN1639	West End	Open Camp		FND
5MN164	West End	Sheltered Camp		NA
5MN1640	West End	Open Architectural		FND
5MN1645	West End	Open Lithic		NA
5MN166	West End	Sheltered Lithic; Historic, Isolated Feature		NA
5MN168	West End	Open Camp		NA
5MN170	West End	Sheltered Architectural		NA
5MN1716	West End	Open Camp		FND
5MN1721	West End	Open Camp		FND
5MN1730	West End	Open Camp		FND
5MN1741	West End	Open Lithic		FND
5MN1751	West End	Open Camp		FND
5MN18	Uncompahgre	Sheltered Camp		FND
5MN1822	West End	Open Lithic		FND
5MN1853	Uncompahgre	Historic, Canal	Ironstone Canal	FE

Appendix Table 6. Uncompahgre Field Office: Sites Classified as Undetermined Use.

Site Number	Landscape Unit	Site Type	Site Name	NRHP Status
5MN1854	GGNCA	Historic, Canal	Selig Canal	OE
5MN1856	GGNCA	Historic, Canal	East Canal	OE
5MN1857	West End	Open Camp		FND
5MN1887	Uncompahgre	Open Lithic		NA
5MN19	Uncompahgre	Sheltered Camp		FND
5MN20	Uncompahgre	Sheltered Camp		FND
5MN2059	West End	Open Architectural		FND
5MN2060	West End	Open Lithic		FND
5MN2062	West End	Open Lithic		FND
5MN2063	West End	Open Camp		FND; BLM "Field not elig"
5MN2064	West End	Open Lithic		FND; BLM "Field not elig"
5MN2065	West End	Open Lithic		FND; BLM "Field not elig"
5MN2067	West End	Open Lithic		FND
5MN2089	West End	Open Camp		FND
5MN21	Uncompahgre	Sheltered Camp		FND
5MN215	West End	Open Lithic		NA
5MN216	West End	Open Lithic; Historic, Dwellings		FND
5MN217	West End	Open Camp		FND
5MN2177	West End	Open Lithic		FND
5MN218	West End	Open Camp		FND
5MN2182	West End	Open Lithic		FND
5MN2184	West End	Open Lithic		FND
5MN2185	West End	Open Lithic		NA
5MN2186	West End	Open Lithic		FND
5MN219	West End	Open Camp		FND
5MN2192	West End	Open Lithic		NA
5MN22	Uncompahgre	Sheltered Camp		FND
5MN2209	West End	Open Camp		FND
5MN221	West End	Open Lithic		NA
5MN2211	West End	Open Architectural		FND
5MN222	West End	Open Lithic		FND
5MN223	West End	Open Lithic		NA
5MN224	West End	Open Lithic		FND
5MN228	West End	Open Lithic		NA

Appendix Table 6. Uncompahgre Field Office: Sites Classified as Undetermined Use.

Site Number	Landscape Unit	Site Type	Site Name	NRHP Status
5MN231	West End	Open Lithic		NA
5MN232	West End	Open Lithic		NA
5MN233	West End	Open Camp		FND
5MN234	West End	Open Lithic		NA
5MN2342	West End	Historic, Stone Wall	Hidden Shelter	FND
5MN2343	West End	Open Camp	Shavano Camp	FND
5MN235	West End	Open Lithic		NA
5MN236	West End	Open Camp		FND
5MN237	West End	Open Lithic		NA
5MN238	West End	Open Lithic		FND
5MN239	West End	Open Lithic		FND
5MN240	West End	Open Lithic		FND
5MN241	West End	Open Lithic		FND
5MN242	West End	Open Lithic		NA
5MN2428	Uncompahgre	Open Lithic		OND
5MN243	West End	Open Lithic		NA
5MN244	West End	Open Lithic		NA
5MN245	West End	Open Lithic		NA
5MN247	West End	Open Lithic		FND
5MN248	West End	Open Lithic		FND
5MN249	West End	Open Lithic		FND
5MN250	West End	Open Camp		FND
5MN251	West End	Open Lithic		NA
5MN252	West End	Open Lithic		NA
5MN253	West End	Sheltered Lithic		FND
5MN2532	DENCA	Historic, Homestead	White Ranch	NA
5MN2533	West End	Historic, Kiln	Charcoal Kiln	NA
5MN254	West End	Open Lithic		NA
5MN255	West End	Open Lithic		FND
5MN256	West End	Open Lithic		FND
5MN257	West End	Open Lithic		NA
5MN258	West End	Open Camp		NA
5MN259	West End	Open Lithic		NA
5MN260	West End	Open Lithic		NA
5MN261	West End	Open Lithic		FND
5MN262	West End	Open Lithic		FND
5MN263	West End	Open Lithic		NA
5MN264	West End	Open Camp		FND

Appendix Table 6. Uncompahgre Field Office: Sites Classified as Undetermined Use.

Site Number	Landscape Unit	Site Type	Site Name	NRHP Status
5MN2655	West End	Open Camp		FND
5MN2660	West End	Sheltered Camp		FND
5MN2661	West End	Open Camp		FND
5MN2662	West End	Open Lithic		FND
5MN2664	West End	Open Lithic		FND
5MN2666	West End	Open Camp		FND
5MN267	West End	Open Lithic		NA
5MN268	West End	Open Camp		NA
5MN271	West End	Open Lithic		NA
5MN2714	West End	Open Camp		FND
5MN2731	West End	Sheltered Camp; Historic, Camp	Placer Shelter	FND
5MN2737	West End	Open Lithic		FND
5MN274	West End	Open Lithic		NA
5MN275	West End	Open Lithic		FND
5MN276	West End	Open Lithic		FND
5MN277	West End	Open Lithic		FND
5MN278	West End	Sheltered Lithic		NA
5MN279	West End	Open Lithic		NA
5MN28	Uncompahgre	Sheltered Camp	Shirley's Shelter	NA
5MN280	West End	Open Lithic		NA
5MN281	West End	Open Lithic		NA
5MN282	West End	Open Lithic		NA
5MN283	West End	Open Lithic		NA
5MN2835	Uncompahgre	Open Camp		OND
5MN2836	Uncompahgre	Open Camp		OND
5MN2839	Uncompahgre	Open Camp		OND
5MN284	West End	Open Lithic		FND
5MN285	West End	Open Lithic		NA
5MN2853	Uncompahgre	Open Camp		OND
5MN286	West End	Open Lithic		NA
5MN287	West End	Open Camp		NA
5MN289	West End	Open Lithic		FND
5MN29	Uncompahgre	Sheltered Camp		NA
5MN290	West End	Open Lithic		NA
5MN291	West End	Open Lithic		NA
5MN292	West End	Open Lithic		NA
5MN294	West End	Open Lithic		NA
5MN295	West End	Open Lithic		NA

Appendix Table 6. Uncompahgre Field Office: Sites Classified as Undetermined Use.

Site Number	Landscape Unit	Site Type	Site Name	NRHP Status
5MN296	West End	Open Lithic		FND
5MN297	West End	Open Lithic		NA
5MN298	West End	Open Lithic		FND
5MN3014	West End	Open Lithic		FND
5MN3016	West End	Open Lithic		FND
5MN302	West End	Open Lithic		FND
5MN303	West End	Open Lithic		FND
5MN3031	West End	Open Camp		OND
5MN304	West End	Open Lithic		FND
5MN306	West End	Sheltered Camp		FND
5MN308	West End	Open Lithic		NA
5MN309	West End	Open Lithic		NA
5MN310	West End	Open Lithic; Rock Art; Historic, Trash Scatter		FND
5MN311	West End	Open Lithic		NA
5MN312	West End	Open Lithic		FND
5MN313	West End	Open Lithic		NA
5MN314	West End	Open Lithic		FND
5MN315	West End	Open Lithic		NA
5MN317	West End	Open Lithic		FND
5MN3170	West End	Open Lithic		FND
5MN318	West End	Open Lithic		NA
5MN3187	Ouray	Open Lithic		OND
5MN319	West End	Open Architectural		FND
5MN320	West End	Open Camp		FND
5MN321	West End	Open Lithic		NA
5MN3219	Uncompahgre	Open Camp, Historic Kiln, Hearth		OND
5MN322	West End	Open Camp		FND
5MN323	West End	Open Lithic		NA
5MN324	West End	Open Lithic		FND
5MN325	West End	Open Lithic		FND
5MN326	West End	Open Camp		FND
5MN327	West End	Open Lithic		NA
5MN3280	Uncompahgre	Open Camp		OND
5MN329	West End	Open Lithic		NA
5MN330	West End	Open Camp		NA
5MN331	West End	Open Camp		FND
5MN332	West End	Open Camp		FND

Appendix Table 6. Uncompahgre Field Office: Sites Classified as Undetermined Use.

Site Number	Landscape Unit	Site Type	Site Name	NRHP Status
5MN333	West End	Open Camp		FND
5MN3331	West End	Sheltered Camp; Historic, Camp		OND
5MN334	West End	Open Camp		NA
5MN339	West End	Open Lithic		FND
5MN34	Uncompahgre	Sheltered Camp	Squint Site	FND
5MN341	West End	Open Lithic		NA
5MN3414	West End	Open Camp		OND
5MN3416	West End	Open Lithic; Quarry		OND
5MN3418	West End	Open Camp		OND
5MN342	West End	Open Lithic		FND
5MN3422	West End	Open Camp		OND
5MN3423	West End	Open Camp		OND
5MN3424	West End	Isolated Feature		OND
5MN3425	West End	Open Camp		OND
5MN3429	West End	Open Camp; Quarry		OND
5MN343	West End	Open Lithic		FND
5MN344	West End	Open Lithic		FND
5MN345	West End	Open Camp		NA
5MN346	West End	Open Lithic		FND
5MN348	West End	Open Lithic		NA
5MN3481	West End	Open Camp		OND
5MN3483	West End	Open Camp		OND
5MN349	West End	Open Lithic		NA
5MN3491	West End	Open Camp		OND
5MN351	West End	Open Lithic		FND
5MN3512	West End	Open Camp		OND
5MN352	West End	Open Lithic		FND
5MN354	West End	Open Camp		FND
5MN355	West End	Open Lithic		FND
5MN356	West End	Open Lithic		NA
5MN357	West End	Open Lithic		NA
5MN359	West End	Open Camp		NA
5MN360	West End	Open Lithic		NA
5MN3609	West End	Open Camp		OND
5MN361	West End	Open Camp		NA
5MN3610	West End	Open Lithic		OND
5MN3611	West End	Historic, Homestead		OND
5MN3613	West End	Sheltered Camp		OND

Appendix Table 6. Uncompahgre Field Office: Sites Classified as Undetermined Use.

Site Number	Landscape Unit	Site Type	Site Name	NRHP Status
5MN3615	West End	Open Camp		OND
5MN362	West End	Open Camp		FND
5MN364	West End	Open Architectural		NA
5MN3665	West End	Open Lithic		OND
5MN3667	West End	Open Lithic		OND
5MN3670	West End	Open Architectural		OND
5MN3671	West End	Open Camp		OND
5MN3673	West End	Open Camp		OND
5MN3683	Uncompahgre	Open Lithic		OND
5MN3717	West End	Open Lithic		OND
5MN38	Uncompahgre	Open Camp, Historic Trash Scatter	Childers Site	FND
5MN383	West End	Open Lithic		NA
5MN384	West End	Open Lithic		NA
5MN3845	Uncompahgre	Open Camp; Historic, Sheep Camp		FND
5MN385	West End	Open Lithic		FND
5MN3851	Uncompahgre	Open Camp; Historic, Trash Dump		FND
5MN386	West End	Open Lithic		NA
5MN387	West End	Open Lithic		NA
5MN389	West End	Open Lithic		NA
5MN39	Uncompahgre	Open Camp, Historic Trash Scatter		NA
5MN390	West End	Open Lithic		NA
5MN391	West End	Open Lithic		NA
5MN3928	Uncompahgre	Open Camp		FND
5MN3930	Uncompahgre	Open Architectural		FND
5MN3931	Uncompahgre	Open Camp		FND
5MN3932	Uncompahgre	Open Camp; Historic, Tin Can Scatter		FND
5MN3934	Uncompahgre	Open Camp; Historic, Tin Can Scatter		FND
5MN3935	Uncompahgre	Open Camp; Historic, Trash Dump		FND
5MN3936	Uncompahgre	Open Lithic		FND
5MN395	West End	Open Lithic		FND
5MN396	West End	Open Camp		NA
5MN397	West End	Open Lithic		NA
5MN398	West End	Open Camp		FND
5MN399	West End	Open Lithic		NA
5MN400	West End	Open Camp		FND

Appendix Table 6. Uncompahgre Field Office: Sites Classified as Undetermined Use.

Site Number	Landscape Unit	Site Type	Site Name	NRHP Status
5MN401	West End	Open Camp		FND
5MN402	West End	Open Lithic		NA
5MN4024	Uncompahgre	Open Camp; Historic, Isolated Find		FND
5MN4027	Uncompahgre	Open Camp		FND
5MN4028	Uncompahgre	Open Camp; Historic, Trash Scatter		FND
5MN403	West End	Open Lithic		NA
5MN4030	Uncompahgre	Open Camp; Historic, Tin Can Scatter		FND
5MN4031	Uncompahgre	Open Camp		FND
5MN4037	Uncompahgre	Open Camp; Historic, Campsite		FND
5MN4038	Uncompahgre	Open Camp; Historic, Trash Scatter		FND
5MN4039	Uncompahgre	Open Camp		FND
5MN404	West End	Open Camp		FND
5MN4044	Uncompahgre	Open Camp; Historic, Isolated Find		FND
5MN405	West End	Open Lithic		NA
5MN406	West End	Open Lithic		NA
5MN408	West End	Open Camp		NA
5MN409	West End	Open Lithic		FND
5MN410	West End	Open Lithic		FND
5MN411	West End	Open Lithic		NA
5MN412	West End	Open Lithic		NA
5MN413	West End	Open Camp		NA
5MN414	West End	Open Lithic		FND
5MN415	West End	Open Lithic		FND
5MN416	West End	Open Lithic		FND
5MN423	West End	Open Lithic		NA
5MN424	West End	Open Lithic		NA
5MN4248	Ouray	Historic, Trash Scatter		Unknown
5MN4249	Uncompahgre	Historic, Homestead		NA
5MN425	West End	Open Lithic		NA
5MN4251	Uncompahgre	Historic, Homestead		NA
5MN426	West End	Open Lithic		NA
5MN429	West End	Open Lithic		NA
5MN43	Uncompahgre	Sheltered Camp	Sanburg Site	NA
5MN431	West End	Open Camp		NA
5MN432	West End	Open Lithic		FND
5MN435	West End	Sheltered Camp		FND

Appendix Table 6. Uncompahgre Field Office: Sites Classified as Undetermined Use.

Site Number	Landscape Unit	Site Type	Site Name	NRHP Status
5MN436	West End	Open Lithic; Historic, Camp		NA
5MN4364	West End	Open Lithic		OND
5MN438	West End	Open Lithic		NA
5MN441	West End	Open Camp		NA
5MN442	West End	Sheltered Camp		FND
5MN4429	Uncompahgre	Open Camp?		FND
5MN4453	Uncompahgre	Historic; Habitation	Huscher Homestead Site	FND
5MN447	Ouray	Open Lithic		NA
5MN4500	West End	Sheltered Camp; Historic, Isolated Find		FND
5MN4546	Uncompahgre	Open Lithic		OND
5MN4547	Uncompahgre	Open Camp		OND
5MN4559	Uncompahgre	Open Lithic		OND
5MN4566	Uncompahgre	Open Lithic		OND
5MN4572	Uncompahgre	Isolated Feature		OND
5MN4575	Uncompahgre	Open Lithic; Historic, Camp		OND
5MN4589	Uncompahgre	Open Lithic		OND
5MN4596	Uncompahgre	Open Lithic		FND
5MN4597	Uncompahgre	Open Lithic		OND
5MN4598	Uncompahgre	Open Lithic		OND
5MN4608	Uncompahgre	Open Lithic		OND
5MN4613	Uncompahgre	Sheltered Camp		OND
5MN464	West End	Open Lithic		NA
5MN4649	Uncompahgre	Quarry		OND
5MN4660	West End	Open Lithic	Christian's First Site	OND
5MN4663	West End	Open Camp	Blue Feather Camp	OND
5MN4664	West End	Open Lithic	Boundary Corner Camp	OND
5MN467	West End	Open Lithic		NA
5MN4686	West End	Open Camp	Cuatro Manos Camp	OND
5MN469	West End	Open Lithic		NA
5MN470	West End	Open Lithic		NA
5MN4706	West End	Sheltered Architectural	Bassnet Ranch Cave Site	FND
5MN4709	West End	Open Lithic		OND
5MN473	DENCA	Open Lithic		NA
5MN492	West End	Open Lithic		FND
5MN4924	West End	Open Camp		OND
5MN4926	West End	Open Camp		OND
5MN4929	West End	Open Camp		OND
5MN4987	West End	Open Camp		OND

Appendix Table 6. Uncompahgre Field Office: Sites Classified as Undetermined Use.

Site Number	Landscape Unit	Site Type	Site Name	NRHP Status
5MN50	Uncompahgre	Sheltered Camp		FND
5MN502	West End	Sheltered Lithic		FND
5MN505	West End	Historic, Structure		NA
5MN506	West End	Historic, Structure		NA
5MN508	West End	Open Lithic		NA
5MN5088	Uncompahgre	Open Camp		FND
5MN509	West End	Historic, Sheep Camp		NA
5MN51	Uncompahgre	Sheltered Lithic; Open Lithic		FND
5MN513	West End	Open Lithic		NA
5MN5138	West End	Historic, Mine		OND
5MN5139	West End	Open Lithic		OND
5MN514	West End	Open Camp		NA
5MN5140	West End	Open Lithic		OND
5MN5141	West End	Open Camp		OND
5MN5154	West End	Open Lithic		OND
5MN516	West End	Open Lithic		NA
5MN5163	West End	Open Lithic		OND
5MN5165	West End	Sheltered Camp		OND
5MN5167	West End	Open Lithic		OND
5MN5172	West End	Open Lithic		OND
5MN5174	West End	Open Lithic		OND
5MN5175	West End	Open Camp		OND
5MN5179	West End	Open Lithic		OND
5MN5182	West End	Open Lithic		OND
5MN5185	West End	Open Lithic		OND
5MN5191	West End	Open Lithic		OND
5MN5197	West End	Open Camp		OND
5MN520	West End	Open Camp	Worrisome Camp	OND
5MN5201	West End	Open Lithic		OND
5MN5202	West End	Open Camp		OND
5MN5206	West End	Open Camp; Historic, Structural Remains		OND
5MN5207	West End	Open Lithic		OND
5MN5210	West End	Open Camp		OND
5MN5212	West End	Open Lithic		OND
5MN5213	West End	Open Camp		FND
5MN5214	West End	Open Camp		OND
5MN5218	West End	Open Lithic; Historic, Isolated Find		OND

Appendix Table 6. Uncompahgre Field Office: Sites Classified as Undetermined Use.

Site Number	Landscape Unit	Site Type	Site Name	NRHP Status
5MN5219	West End	Open Lithic		OND
5MN5221	West End	Open Camp		OND
5MN5224	West End	Open Lithic		OND
5MN5225	West End	Open Lithic		OND
5MN5238	West End	Open Camp		OND
5MN5241	West End	Open Camp		OND
5MN5243	West End	Open Camp		OND
5MN5244	West End	Open Lithic		OND
5MN5245	West End	Open Lithic		OND
5MN5249	Uncompahgre	Historic, Homestead		OND
5MN525	West End	Open Camp		NA
5MN526	West End	Open Camp		NA
5MN527	West End	Open Lithic		NA
5MN528	West End	Open Camp		OND
5MN5284	Ouray	Open Lithic		OND
5MN5287	Ouray	Open Lithic		OND
5MN53	Uncompahgre	Sheltered Camp		FND
5MN54	Uncompahgre	Open Camp		FND
5MN5405	West End	Open Camp		OND
5MN5411	West End	Open Camp		OND
5MN5466	Ouray	Open Camp		OND
5MN55	Uncompahgre	Sheltered Camp	Roubideau Rim Site	FND
5MN5544	West End	Open Camp		OND
5MN5547	West End	Open Camp		OND
5MN555	West End	Open Lithic		NA
5MN56	Uncompahgre	Open Lithic		FND
5MN5651	West End	Open Camp		OND
5MN5652	West End	Open Camp		OND
5MN5654	West End	Open Lithic		OND
5MN5655	West End	Open Camp		OND
5MN5657	West End	Open Camp		OND
5MN5658	West End	Open Camp		OND
5MN5662	West End	Open Lithic		OND
5MN5663	West End	Open Lithic		OND
5MN5664	West End	Open Camp		OND
5MN5743	Uncompahgre	Open Architectural		OND
5MN5747	Uncompahgre	Sheltered Camp		OND
5MN5751	Uncompahgre	Historic, Homestead		OND

Appendix Table 6. Uncompahgre Field Office: Sites Classified as Undetermined Use.

Site Number	Landscape Unit	Site Type	Site Name	NRHP Status
5MN5752	Uncompahgre	Historic, Homestead		OND
5MN5798	West End	Open Camp		OND
5MN5799	West End	Open Lithic		OND
5MN5820	West End	Open Lithic		OND
5MN5825	West End	Open Camp; Historic, Corral		OND
5MN5826	West End	Open Camp		OND
5MN5875	West End	Open Lithic; Historic, Mining Complex	Hardrock No.1 Mine	OND
5MN5996	West End	Open Camp		OND
5MN6001	West End	Open Camp		OND
5MN601	West End	Open Lithic		NA
5MN602	West End	Open Lithic		NA
5MN6048	West End	Historic, Highway	Sh 141	FE
5MN6048.1	West End	Historic, Highway	State Highway 141	OE
5MN605	West End	Open Camp		NA
5MN606	West End	Open Camp		NA
5MN609	West End	Open Lithic		NA
5MN61	Uncompahgre	Sheltered Lithic	Long Draw Shelter (Number 1 Of 3)	NA
5MN6119	West End	Open Camp; Historic, Camp		OND
5MN612	West End	Open Camp		NA
5MN613	West End	Sheltered Camp		NA
5MN6135	West End	Open Lithic; Historic, Camp		OND
5MN614	West End	Historic, Sheep Camp		NA
5MN616	West End	Open Lithic		NA
5MN617	West End	Open Camp		NA
5MN619	West End	Open Lithic		NA
5MN62	Uncompahgre	Sheltered Lithic	Long Draw Shelter (Number 2 Of 3)	NA
5MN620	West End	Open Lithic		NA
5MN622	West End	Sheltered Camp		NA
5MN6290	West End	Open Lithic		OND
5MN6293	West End	Open Camp		OND
5MN63	Uncompahgre	Sheltered Lithic	Long Draw Shelter (Number 3 Of 3)	NA
5MN6466	West End	Open Lithic		OND
5MN6472	West End	Open Camp		OND
5MN6479	West End	Open Camp		OND
5MN657	West End	Open Camp		FND
5MN658	West End	Open Camp; Historic, Camp		FND
5MN660	West End	Open Camp		FND

Appendix Table 6. Uncompahgre Field Office: Sites Classified as Undetermined Use.

Site Number	Landscape Unit	Site Type	Site Name	NRHP Status
5MN661	West End	Open Camp		FND
5MN662	West End	Open Lithic		FND
5MN663	West End	Open Camp		FND
5MN6647	Uncompahgre	Open Camp; Historic, Trash Scatter		OND
5MN6657	Uncompahgre	Open Camp		OND
5MN6658	Uncompahgre	Open Camp		OND
5MN6659	Uncompahgre	Open Camp		OND
5MN6660	Uncompahgre	Open Camp; Historic, Sheep Camp		OND
5MN6662	Uncompahgre	Open Camp		OND
5MN6664	Uncompahgre	Open Camp		OND
5MN6665	Uncompahgre	Open Camp		OND
5MN6668	Uncompahgre	Open Camp; Historic, Sheep Camp		OND
5MN6669	Uncompahgre	Open Camp		OND
5MN6670	Uncompahgre	Open Camp; Historic, Trash Scatter		OND
5MN6763	Uncompahgre	Open Camp		OND
5MN6859	West End	Open Camp		OND
5MN6861	West End	Open Camp		OND
5MN6862	West End	Sheltered Lithic		FND
5MN6863	West End	Open Camp		OND
5MN6867	West End	Open Camp		OND
5MN6869	West End	Open Camp		OND
5MN6872	West End	Open Lithic		OND
5MN6874	West End	Open Camp		OND
5MN6889	West End	Open Camp		OND
5MN6895	West End	Open Lithic		OND
5MN6899	West End	Open Lithic		OND
5MN6904	West End	Open Camp		OND
5MN6905	West End	Open Camp		OND
5MN6908	West End	Open Lithic		OND
5MN6911	West End	Open Camp; Historic, Isolated Find		OND
5MN6917	West End	Open Camp		OND
5MN6919	West End	Open Camp		OND
5MN6924	West End	Open Camp		OND
5MN6929	West End	Open Camp		OND
5MN6940	West End	Open Camp		OND
5MN6941	West End	Open Camp		OND

Appendix Table 6. Uncompahgre Field Office: Sites Classified as Undetermined Use.

Site Number	Landscape Unit	Site Type	Site Name	NRHP Status
5MN6943	West End	Open Camp		OND
5MN6945	West End	Open Camp		OND
5MN6946	West End	Open Lithic		OND
5MN6949	West End	Open Lithic		OND
5MN6950	West End	Open Camp		OND
5MN6958	West End	Open Lithic		OND
5MN6961	West End	Open Camp		OND
5MN6962	West End	Open Camp		OND
5MN6965	West End	Open Camp		OND
5MN6974	West End	Open Lithic		OND
5MN6976	West End	Open Lithic		OND
5MN6980	West End	Open Camp		OND
5MN6982	West End	Open Camp		OND
5MN6987	West End	Open Camp		OND
5MN6990	West End	Open Camp		OND
5MN6997	West End	Open Camp		OND
5MN6999	West End	Open Camp		OND
5MN7000	West End	Open Camp		OND
5MN7002	West End	Open Camp		OND
5MN7013	West End	Open Camp		OND
5MN7014	West End	Open Camp		OND
5MN7015	West End	Open Architectural		OND
5MN7022	West End	Open Camp		OND
5MN7029	West End	Open Camp		OND
5MN7031	West End	Open Camp		OND
5MN7052	West End	Open Camp		OND
5MN7061	Uncompahgre	Open Camp		OND
5MN7064	Uncompahgre	Open Camp		OND
5MN7065	Uncompahgre	Open Camp; Historic, Isolated Find		OND
5MN708	Uncompahgre	Open Lithic		FND
5MN7255	Uncompahgre	Open Lithic		OND
5MN7413	Uncompahgre	Open Camp		OND
5MN7414	Uncompahgre	Open Camp		OND
5MN7415	Uncompahgre	Open Camp		OND
5MN7416	Uncompahgre	Open Camp		OND
5MN7435	Uncompahgre	Open Camp		FND
5MN7606	Uncompahgre	Open Lithic		OND
5MN772	West End	Open Camp		NA

Appendix Table 6. Uncompahgre Field Office: Sites Classified as Undetermined Use.

Site Number	Landscape Unit	Site Type	Site Name	NRHP Status
5MN773	West End	Open Camp		NA
5MN774	West End	Open Lithic		NA
5MN775	West End	Open Lithic		NA
5MN776	West End	Open Camp		NA
5MN777	West End	Open Camp		NA
5MN778	West End	Open Lithic; Historic, Trash Scatter		NA
5MN779	West End	Lithic Quarry		NA
5MN78	West End	Open Lithic		NA
5MN780	West End	Open Architectural		NA
5MN781	West End	Open Lithic		NA
5MN782	West End	Open Lithic		NA
5MN783	West End	Open Camp		OND
5MN784	West End	Open Lithic		NA
5MN785	West End	Open Lithic		NA
5MN786	West End	Open Lithic		NA
5MN787	West End	Open Lithic		NA
5MN788	West End	Open Camp		NA
5MN7882	West End	Open Lithic		OND
5MN789	West End	Open Lithic		NA
5MN7891	Uncompahgre	Open Camp		FND
5MN7894	Uncompahgre	Open Camp		FND
5MN790	West End	Open Lithic		OND
5MN7942	West End	Historic, Mining Complex	Mill No. 4 Mine	OND
5MN801	Uncompahgre	Open Lithic		NA
5MN802	Uncompahgre	Open Lithic		NA
5MN804	West End	Open Lithic		NA
5MN8089	Uncompahgre	Open Camp		FND
5MN8096	Ouray	Historic, IRRIGATION DITCH	AG LATERAL DITCH	Staff - OE
5MN810	West End	Sheltered Lithic		FND
5MN812	West End	Lithic Quarry		FND
5MN813	West End	Open Lithic		FND
5MN814	West End	Open Lithic		FND
5MN8199.1	West End	Historic, Highway	Paradox Road~State Primary Road 20~State Highway 90 - Segment	OE
5MN8200.1	West End	Historic, DITCH	COTTONWOOD PLACER DITCH~GOLD QUEEN EXTENSION - SEGMENT	OE

Appendix Table 6. Uncompahgre Field Office: Sites Classified as Undetermined Use.

Site Number	Landscape Unit	Site Type	Site Name	NRHP Status
5MN8217	West End	Historic, HABITATION		OND
5MN829	West End	Open Camp		FND
5MN830	West End	Open Camp		FND
5MN834	West End	Open Lithic		FND
5MN835	West End	Open Camp		FND
5MN843	West End	Open Camp; Historic, Rubble Pile		FND
5MN8446	West End	Open Camp; Historic, Trash Scatter		OND
5MN845	West End	Open Camp		FND
5MN86	West End	Sheltered Camp		NA
5MN864	Uncompahgre	Sheltered Camp	Casebier Site	NA
5MN869	West End	Open Lithic		NA
5MN87	West End	Open Lithic		NA
5MN870	West End	Open Lithic		NA
5MN871	West End	Open Lithic		NA
5MN872	West End	Open Lithic; Historic Mine		NA
5MN873	West End	Open Camp		NA
5MN874	West End	Open Lithic		NA
5MN875	West End	Open Lithic		NA
5MN8755	West End	Open Lithic; Historic, Cabin		OND
5MN876	West End	Open Lithic		NA
5MN877	West End	Sheltered Camp		NA
5MN878	West End	Open Camp		NA
5MN879	West End	Open Lithic		NA
5MN88	West End	Sheltered Camp		NA
5MN880	West End	Open Camp		NA
5MN881	West End	Open Lithic		NA
5MN882	West End	Open Lithic		NA
5MN883	West End	Open Lithic		NA
5MN884	West End	Open Lithic		NA
5MN885	West End	Open Camp		NA
5MN886	West End	Open Lithic		NA
5MN887	West End	Open Lithic		NA
5MN888	West End	Open Lithic		NA
5MN889	West End	Open Lithic		NA
5MN891	West End	Open Lithic		NA
5MN892	West End	Open Lithic		NA
5MN893	West End	Open Lithic		NA

Appendix Table 6. Uncompahgre Field Office: Sites Classified as Undetermined Use.

Site Number	Landscape Unit	Site Type	Site Name	NRHP Status
5MN894	West End	Open Camp		NA
5MN895	West End	Open Lithic		NA
5MN896	West End	Open Lithic		NA
5MN897	West End	Open Lithic		NA
5MN898	West End	Open Lithic		NA
5MN899	West End	Open Lithic		NA
5MN90	West End	Open Lithic; Kill Site?		NA
5MN900	West End	Open Camp		NA>FNE
5MN901	West End	Open Lithic		NA
5MN902	West End	Open Lithic		NA
5MN903	West End	Open Lithic		NA
5MN904	West End	Open Lithic		NA
5MN905	West End	Open Camp		NA
5MN906	West End	Open Lithic		NA
5MN907	West End	Open Camp		NA
5MN908	West End	Open Lithic		NA
5MN909	West End	Open Lithic		NA
5MN9090.1	West End	Historic, IRRIGATION DITCH	COLORADO COOPERATIVE IRRIGATION DITCH - SEGMENT	OE
5MN9091	West End	Historic, Mine	Cottonwood Placers~Rockford Placer	OND
5MN910	West End	Open Lithic		NA
5MN911	West End	Open Camp		NA
5MN912	West End	Sheltered Architectural		NA
5MN913	West End	Open Lithic		NA
5MN914	West End	Open Camp		NA
5MN95	West End	Open Lithic		NA
5MN96	West End	Open Lithic		NA
5MN98	West End	Open Lithic		NA
5MN99	West End	Open Camp		NA
5OR11	Ouray	Open Camp		NA
5OR1151	Ouray	Sheltered Camp		OND
5OR121	Ouray	Historic; MILL		Unknown
5OR124	Ouray	Historic, Homestead	Culvert Site>Jake Hafer Site	FND
5OR130.1	Ouray	Historic, Railroad	Denver And Rio Grande Railroad - Ouray Spur	OE
5OR1421	Uncompahgre	Open Camp		OND
5OR1493	Uncompahgre	Open Architectural		OND

Appendix Table 6. Uncompahgre Field Office: Sites Classified as Undetermined Use.

Site Number	Landscape Unit	Site Type	Site Name	NRHP Status
5OR1498	Uncompahgre	Historic, Camp		OND
5OR175.2	Ouray	Historic, Toll Road, Culver	Mears Otto Toll Road	FND
5OR189	Ouray	Historic, Road	Hotchkiss Road>Johnny The Greek Road	FND
5OR202	Ouray	Historic, Road	Alkali Creek Road	FND
5OR294	Ouray	Historic, Highway	U. S. Highway 550~Miracle Highway	FE
5OR294.3	Ouray	Historic, Highway	U. S. Highway 550 - Segment	NA
5OR294.4	Ouray	Historic, Highway	U. S. Highway 550 - Segment	NA
5OR303	Ouray	Open Camp		FND
5OR330	Ouray	Open Camp		FND
5OR333	Ouray	Open Camp		FND
5OR334	Ouray	Open Camp; Historic, Trash Scatter		FND
5OR335	Ouray	Sheltered Camp		FND
5OR337	Ouray	Open Lithic; Historic, Isolated Find		FND
5OR340	Ouray	Open Lithic		FND
5OR356	Ouray	Open Camp		FND
5OR357	Ouray	Open Lithic; Historic, Trash Scatter		FND
5OR358	Ouray	Open Lithic; Historic, Isolated Find		FND
5OR359	Ouray	Open Lithic		FND
5OR362	Ouray	Open Lithic		FND
5OR363	Ouray	Historic, Quarry		FND
5OR367	Ouray	Open Lithic		FND
5OR368	Ouray	Open Camp		FND
5OR371	Ouray	Open Lithic		FND
5OR375	Ouray	Open Lithic		FND
5OR381	Ouray	Open Lithic		FND
5OR40	Ouray	Open Camp		FND
5OR404	Ouray	Open Lithic		FND
5OR422	Ouray	Historic, LOG PILE		FND
5OR423	Ouray	Historic, CHARCOAL PRODUCTION		FND
5OR425	Ouray	Historic, CHARCOAL CONCENTRATION		FND
5OR426	Ouray	Open Camp		FND
5OR432	Ouray	Historic, Mine Shaft		FND
5OR450	Ouray	Historic, CHARCOAL CONCENTRATION		FND
5OR455	Ouray	Historic, PIT		FND

Appendix Table 6. Uncompahgre Field Office: Sites Classified as Undetermined Use.

Site Number	Landscape Unit	Site Type	Site Name	NRHP Status
5OR461	Ouray	Historic, DITCH		FND
5OR463	Ouray	Historic, CHARCOAL CONCENTRATION		FND
5OR464	Ouray	Historic, Road	Unnamed Road	FND
5OR465	Ouray	Historic, Unpaved Road		FND
5OR467	Ouray	Historic, Unpaved Road		FND
5OR468	Ouray	Historic, Unpaved Road		FND
5OR469	Ouray	Historic, Road	County Road 8	FND
5OR528	Uncompahgre	Open Lithic		FND
5OR53	Ouray	Open Camp		FND
5OR601	Uncompahgre	Historic, GRAVE		FND
5OR713	Uncompahgre	Open Lithic		FND
5OR8	Ouray	Open Lithic		NA
5OR865	Uncompahgre	Open Camp		FND
5OR9	Ouray	Open Lithic		NA
5SM181	West End	Open Camp		NA
5SM182	West End	Open Lithic		NA
5SM184	West End	Open Lithic; Historic, Isolated Feature		NA
5SM185	West End	Open Lithic		NA
5SM2030.27	West End	Historic, Railroad Grade	Rio Grande Southern Railbed	NA
5SM205	West End	Historic, Structure		NA
5SM208	West End	Open Camp		NA
5SM210	West End	Open Lithic		NA
5SM211	West End	Open Lithic		NA
5SM212	West End	Historic, SANDSTONE FOUNDATIONS		FND
5SM2132	West End	Open Lithic		OND
5SM2133	West End	Open Camp; Historic, Homestead		OND
5SM214	West End	Open Lithic		NA
5SM216	West End	Historic, FOUNDATIONS		NA
5SM217	West End	Historic, STORAGE SHED		NA
5SM218	West End	Open Lithic		NA
5SM219	West End	Open Lithic		NA
5SM220	West End	Open Lithic		NA
5SM221	West End	Open Lithic		NA
5SM222	West End	Open Lithic		NA
5SM223	West End	Open Lithic		NA
5SM224	West End	Open Lithic		NA

Appendix Table 6. Uncompahgre Field Office: Sites Classified as Undetermined Use.

Site Number	Landscape Unit	Site Type	Site Name	NRHP Status
5SM238	West End	Historic, Homestead		NA
5SM254	West End	Historic, MISC Structure		NA
5SM258	West End	Mine		NA
5SM2597	West End	Historic, HABITATION		OND
5SM2699	West End	Open Lithic		OND
5SM2701	West End	Open Lithic		OND
5SM28	West End	Open Lithic		NA
5SM3095.2	West End	Historic, Canal	Lilylands Canal Segment	OE
5SM3095.3	West End	Historic, Canal	Lilylands Canal Segment	OE
5SM3095.4	West End	Historic, Canal	Lilylands Canal Segment	OE
5SM3095.5	West End	Historic, Canal	Lilylands Canal Segment	OE
5SM3095.7	West End	Historic, DITCH	LILYLANDS Canal - SEGMENT~LILYLANDS DITCH	OE
5SM31	West End	Open Lithic		NA
5SM32	West End	Open Lithic		NA
5SM3228	West End	Open Camp		OND
5SM3229	West End	Open Camp		OND
5SM33	West End	Open Camp		NA
5SM342	West End	Sheltered Camp; Historic Camp		FND
5SM343	West End	Open Camp		FND
5SM3445	West End	Open Camp		OND
5SM3498	West End	Open Lithic		FND
5SM354	West End	Open Lithic		FND
5SM3545	West End	Open Camp		OND
5SM355	West End	Sheltered Camp		FND
5SM3614	West End	Lithic Quarry		OND
5SM3659	West End	Isolated Feature		OND
5SM3670	West End	Historic, Highway	Sh 141	OE
5SM3857	West End	Open Camp		FND
5SM3963	West End	Open Camp		OND
5SM3994	West End	Open Camp		OND
5SM4005	West End	Open Lithic		OND
5SM4178	West End	Open Camp		OND
5SM4374	West End	Sheltered Camp		OND
5SM445	West End	Open Camp		FND
5SM4469	West End	Open Camp		OND
5SM4470	West End	Open Architectural		OND
5SM457	West End	Open Lithic		FND

Appendix Table 6. Uncompahgre Field Office: Sites Classified as Undetermined Use.

Site Number	Landscape Unit	Site Type	Site Name	NRHP Status
5SM460	West End	Open Lithic		FND
5SM485	West End	Open Camp		FND
5SM515	West End	Open Camp		FND
5SM516	West End	Sheltered Camp		FND
5SM518	West End	Open Lithic		FND
5SM519	West End	Open Lithic		FND
5SM524	West End	Open Lithic		FND
5SM532	West End	Open Lithic		FND
5SM5393	West End	Lithic Scatter		Unknown
5SM5394	West End	Prehistoric Open Camp And Lithic Scatter		Unknown
5SM5403	West End	Open Camp		Unknown
5SM5405	West End	Lithic Scatter		Unknown
5SM5408	West End	Lithic Scatter		Unknown
5SM5409	West End	Lithic Scatter		Unknown
5SM5410	West End	Lithic Scatter		Unknown
5SM5411	West End	Lithic Scatter		Unknown
5SM5412	West End	Lithic Scatter		Unknown
5SM5456	West End	Lithic Scatter		Unknown
5SM548	West End	Open Camp		FND
5SM656	West End	Open Lithic		FND
5SM659	West End	Open Lithic		FND
5SM727	West End	Open Lithic		FND
5SM77	West End	Open Lithic		NA
5SM78	West End	Open Lithic		NA
5SM79	West End	Open Lithic		NA
5SM80	West End	Open Lithic		NA
5SM81	West End	Open Lithic		NA
5SM82	West End	Open Lithic		NA
5SM83	West End	Open Lithic		NA
5SM84	West End	Open Lithic		NA
5SM86	West End	Open Lithic		NA
5SM94	West End	Open Lithic		NA

APPENDIX C

(Table of Cultural Affiliations of Rock Art Sites in the Uncompahgre Field Office)

Table of Cultural Affiliations of Rock Art Sites and Panels in the Uncompahgre Field Office, West Central Colorado.[1]

Site Number	Site Name, Site Cluster, or Location	Archaic[2]	Formative[2]	Protohistoric or Historic[2]	Description
5DT113			X	X	Grooves, engravings
5DT1690	Palmer Gulch		X		Four panels/quadrupeds and bear paws
5DT1692	Palmer Gulch	X			Animals below sand with antlers showing
5DT1693	Palmer Gulch	X			Heavily patinated Archaic animals
5DT1694	Palmer Gulch	X	X	X	Ten panels on undulating surface
5DT318			X	X	One panel
5DT53	Palmer Gulch	X	X		Archaic and Formative quadrupeds
5DT54			X		Stylized bear walking
5DT6	Rock art near Escalante B			X	
5DT64	Leonards Basin	X	X	X	Historic.Ute superimposing Formative/Archaic
5DT68	Leonards Basin	X	X	X	Historic Ute "rabbit hunt" and earlier quadrupeds
5DT759			X	X	
5DT761			X		Grooves, engravings
5ME1	Escalante Forks		X	X	Bear paws, anthropomorphs
5ME15279	Dominguez Canyon		X		New sites in Dominguez Canyon
5MN1034	Paradox Valley petroglyphs		X	X	One of the finest examples of rock art in southwestern Colorado
5MN1186	Dolores River Gateway		X	X	Big bear petroglyphs along river
5MN1192	Tabeguache Creek		X	X	Petroglyphs, quadrupeds, Ute
5MN1215	John Davis site / Cushman Creek		X	X	Earlier images superimposed by buffalo/hunters
5MN14	Carlyle shelter		X	X	Ute horse riders
5MN1923		X			Archaic deer under powerline on cliff next to the lower road
5MN1958	Shavano Valley West		X	X	Shelter and rock art
5MN2	Hauser site		X	X	Lines, zigzags, tracks
5MN220			X		Red paint pictograph
5MN2341	Harris site	X	X		Grooves and tracks
5MN2349	Shavano Falls			X	Rock art near kids' fort/nine+ deer
5MN27	Shavano Picture Rock		X	X	Rock art/campsite

Table of Cultural Affiliations of Rock Art Sites and Panels in the Uncompahgre Field Office, West Central Colorado.[1]

Site Number	Site Name, Site Cluster, or Location	Archaic[2]	Formative[2]	Protohistoric or Historic[2]	Description
5MN2728	Picture Rock, Shavano Valley		X		
5MN2777	Coyote Wash pictographs		X		Coyote wash/Dolores River: four carrot men, mountain sheep, bird heads
5MN2929	Coyote Confluence	X			
5MN2930	Seeking Shelter Glyph		X		Coyote wash/Dolores petroglyphs two snakes
5MN2954	Windy Point petroglyphs			X	Stick men with horns
5MN3030	Naturita area			X	Historic/spiral/quadruped
5MN310	Horse Fly Navajo petroglyphs			X	Shelter with petroglyphs
5MN3446				X	Historic Ute; possible image of Colorow and horse next to Harris site
5MN3450	Roatcap Gulch		X	X	Formative bow & arrow hunters and lines of deer going up and down
5MN3451	Shrine site		X	X	Uncompahgre style rock art, Ute
5MN3639	Dancing Man/Deer panel		X	X	
5MN3640	Many Fingers petroglyph		X	X	
5MN365	Twin Rocks		X	X	Archaic, Formative animals/Protohistoric anthropomorphs
5MN366	Roc Creek petroglyphs		X	X	Manti-La Sal National Forest
5MN388	Drive Line Shelter	X	X		Overhang with two groups of red pictographs
5MN4032	Petroglyphs w/horses			X	Initials “HD” and Ute horse riders
5MN439	Bedrock		X	X	Six panels of petroglyphs along river
5MN440	near Bedrock		X	X	Lines, zigzags, tracks
5MN443	Roc Creek petroglyphs	X	X	X	Twelve panels, Basketmaker to Ute
5MN4671	Paradox Valley Shaman		X	X	Anthropomorphs, deer, spirals, and bear tracks; five panels
5MN4761	Metate Draw		X	X	Archaic, Formative animals
5MN4948	Flat Rock		X	X	Horizontal “spirit man” with large hands and feet
5MN498			X		
5MN5	Shavano Valley	X	X	X	
5MN5110	Roubideau Canyon Rock Art Gallery		X	X	Two quadrupeds

Table of Cultural Affiliations of Rock Art Sites and Panels in the Uncompahgre Field Office, West Central Colorado.[1]

Site Number	Site Name, Site Cluster, or Location	Archaic[2]	Formative[2]	Protohistoric or Historic[2]	Description
5MN5134	Paradox Valley		X		
5MN519	Cottonwood Cave		X	X	Charcoal and petroglyphs
5MN590	Roubideau Bear Paw			X	Bear paw, Ute
5MN6170	Bobcat trail		X	X	Eleven small quadrupeds, Historic Ute also
5MN621	Broad Canyon petroglyphs			X	Four anthropomorphs in petroglyph panel 100 ft. north of San Miguel/Montrose County line
5MN654	Cottonwood Pueblo		X	X	
5MN67	Shavano Falls		X	X	Rock art, old and historic
5MN68	Shavano Valley		X	X	1/8-mile east of Picture Rock, petroglyphs on shelter roof and rocks in front
5MN7		X	X	X	Rock shelter east of Picture Rock - shelter with faint rock art
5MN7611	Metate Gulch			X	
5MN806	Paradox rock art, big panel		X	X	East end of Paradox/Gateway
5MN838	Maverick Draw		X		Petroglyphs of lines and tracks
5MN863	Moore site	X	X		Grooves and tracks
5MN868	Tabeguache Cave	X	X		

1 Based on research conducted by Carol Patterson.

2 Cultural affiliation is based on stylistic elements or the presence of temporally diagnostic images such as atlatl, bow and arrow, or horses. If both "Formative" and "Protohistoric or Historic" are indicated, cultural affiliation may be either one or both.

APPENDIX D

(A Survey of the Petroglyphs and Pictographs of the Uncompahgre Plateau with Cultural Affiliations of the Historic Period)

A Survey of the Petroglyphs and Pictographs of the Uncompahgre Plateau with Cultural Affiliations of the Historic Period

By Carol Patterson

Introduction

The rock art survey of the Uncompahgre Plateau study area is in the Northern Colorado River Basin in west-central Colorado, encompassing all of the BLM-Uncompahgre Field Office in addition to a substantial surrounding area. It includes the Uncompahgre and Gunnison River drainage system on the east side, and the Dolores River drainage on the west side. The sites selected for this overview are chosen for their clarity and distinction in style and age estimations. This paper attempts to outline the broad array of petroglyphs that occur on the Uncompahgre Plateau with examples from each category and within each era.

Methodology and Interpretation

Petroglyphs selected for the Uncompahgre Plateau rock art age estimations are based on style, weathering, and direct dating if possible with relative dates from soils and archaeological material associated with the panels. Chronology of styles is based upon a large database of sites throughout the plateau. Supporting data from current literature and ethnographic analogy is employed. This may allow for inferred interpretations of petroglyph panels that may represent social activities, such as game drives, battle scenes, or tribal ceremonies such as the Bear dance. Native consultants have suggested that images in a panel may also represent spiritual entities, such as rain or cloud deities, spirits of deceased or even iconographic symbols. The principles of symbol interpretation rely on consistency checks, frequency checks, and symbol affinities from a very large database, as structured by Cryptanalysis, (from the Greek kryptós, "hidden", and analýein, "to loosen" or "to untie"), or Cryptography, the science by which an unknown system of communication is deciphered from symbols, characters, or letters of a communication system. In non-technical language, this is the practice of codebreaking or cracking the code. (see The Codebreakers , David Kahn, 1996). These principles provide lines of evidence put forth in the rock art interpretation and analysis conducted at selected sites throughout the Plateau.

The database includes over 200 petroglyph sites on the Uncompahgre Plateau from the San Miguel River to the south, the Dolores on the west, the Colorado River in the North and the Uncompahgre and Gunnison River on the East. Common names are used as referents for each petroglyph site, rather than site numbers. The table of rock art sites in Appendix C gives the common name, site number and age estimations for the database used in this discussion. Drawings of each petroglyph panel have been used to represent the actual photograph of selected panels.

Previous Work in Rock Art Recording

Previous studies in the study area include the *Ute Prehistory Project of the Uncompahgre Plateau* by Buckles (1971) and the Colorado Plateau, in general, by Cole (1987). Following the Colorado Prehistory; *A Context for the Northern Colorado River Basin*, (Reed and Metcalf 1999), Revised by Reed and Smith Gebauer (2004) the relevant dates for the eras used to frame this rock art chronology are the Archaic, 7400 to 200 BC; the Uncompahgre Complex[1], 7000 BC to A.D. 1300 (Buckles 1971); the Formative Era 200 B.C. to A.D. 1300, that includes the Numic entrance at around A.D. 1100 and the Fremont Style, A.D 400 to 1500 (Cole 1990); and the Proto-Historic Era, A.D. 1300 A.D. (Reed and 2005); and Historic Era, A.D. 1600 to 1830 (Cole 1990) or 1730 to the present (Cole 1987).

Conner and Ott, *Petroglyphs and Pictographs of the Grand Junction District*, (1978, BLM, GJ) were the first to photographically document the majority of sites on the Uncompahgre Plateau. That was followed by Cole 1987 and 1990 who provided a comprehensive analysis of a large sample of rock art in the Uncompahgre Plateau. Recent rock art recording and re-evaluations of sites were undertaken by Patterson and Watchman's survey of *Leonard's Basin and Palmer Gulch*, (2006) and *Gunnison Gorge Rock Art Shelter*, (2006). Following Martin's *Archaeological Assessment of the Cultural Resources in Big Dominguez Canyon* (DARG,2006), Patterson re-evaluated the rock art sites in *Deer Creek and Big Dominguez Creek* (2007). G. Williams re-recorded Buckle's documentation of *Escalante Bridge Site* 5DT4 (2008), and C. Patterson re-evaluation of *Roc Creek*, (2009) previously recorded by H.W. Toll (1975 and 1977).

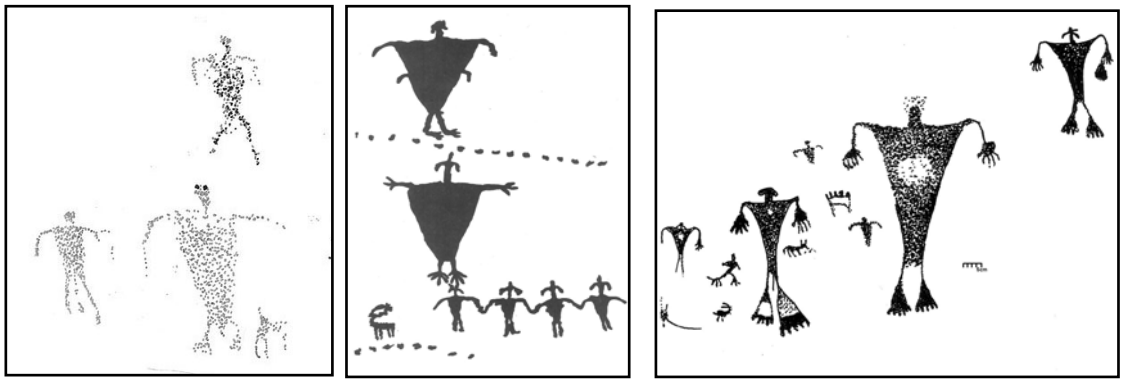
Cultural Context Review

Previous studies of the archaeological context for this study area have been documented most notably by Reed and Smith Gebauer (2004). Colorado Prehistory: A Context for the Northern Colorado River Basin (Reed and Metcalf) is the standard for understanding the prehistory cultural context for this area. Although nothing has been written that puts the rock art of this area in context.

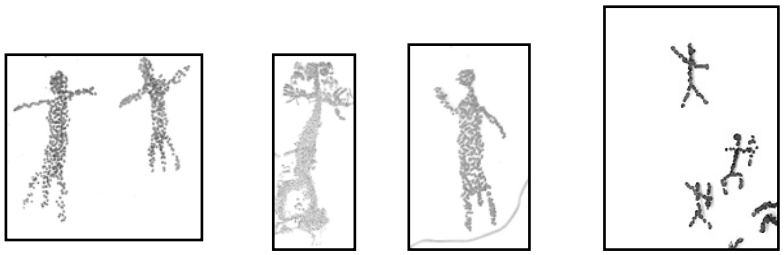
Petroglyphs (engraved) and pictographs (painted) on rock surfaces are difficult to date and place within established archaeological chronologies. It is difficult as well, to place them within cultural affinities, those within the Archaic and Formative era more so than the Protohistoric and Historic. Based on extensive ethnographic information for this area, cultural diagnostics such as the horse, cowboy hats, and fringed leggings are clearly identifiable as historic Ute. Large pedestrian shield figures with spiky headdresses may identify Paiute from

[1] Bill Buckles (1971) pioneered the rock art chronology for the Uncompahgre Plateau. His premise was to place depictions of life forms with a style category, free from association with a function. In doing so, he admits that those forms which resemble others in the style are not necessarily of the same age.(1971:68), thereby selecting like forms from very different ages. For this study, I have not included Buckles classifications or referred to his placement of certain 'forms' within a style period. Too many contradictions occur within the same panel.

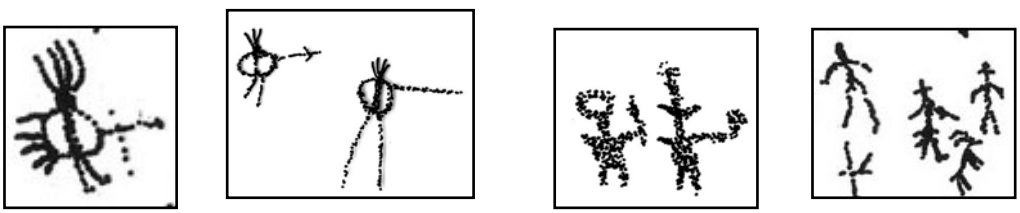
Ute during the Historic era. In contrast, human stick figures with spears or bows from the pre-historic eras have no cultural diagnostics. During the Protohistoric era, it may be possible to determine Numic from Ancestral Pueblo cultural affiliations by body style and symbol affiliations from the ethnographic and archaeological record of the Ancestral Pueblo from the South. San Juan Basketmaker and Pueblo II rock art of the San Juan Basin is typified by hair styles, sometimes body styles and depictions of traditional deities or important food sources. In contrast, Numic hunter/gatherer traditions have flat heads, sometimes with horns and have a preference for depicting game animals, trails, bear paws and tree iconography. Trapezoidal body styles of the Numic have symbol affiliations with Fremont cultures to the north. Chart 1 illustrates the changes through time of style and form for animals and humans within an established chronology (Reed and Metcalf 1999).



Late Archaic and Formative era San Juan Basketmaker body styles; Dominguez Canyon, LaSal Creek, Paradox Valley.



Late Archaic and Formative era body styles from Kannah Creek, Palmer Gulch, Escalante Forks and Roatcap Gulch

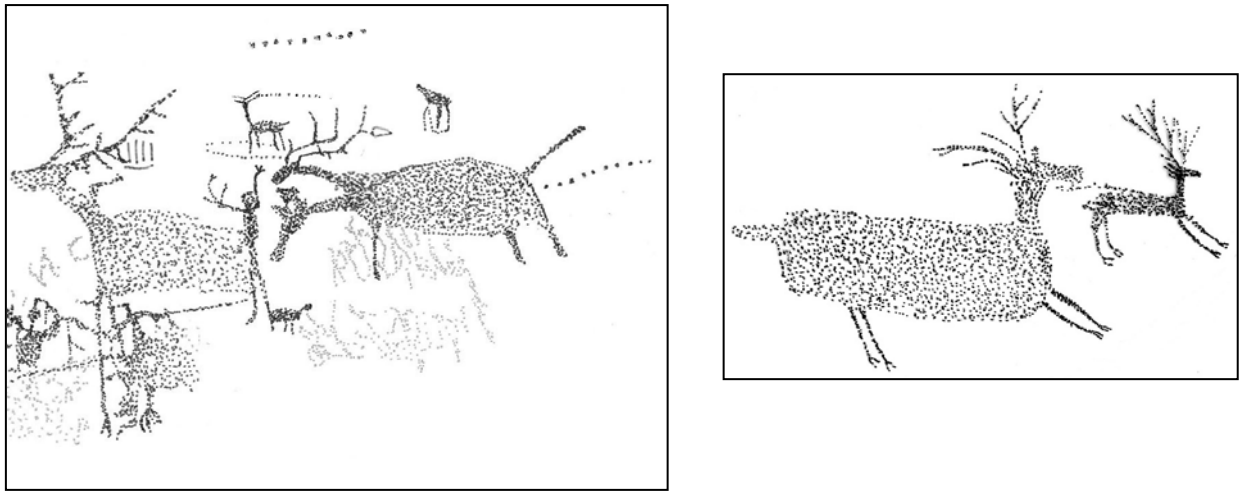


Historic Era with cultural distinctions between Paiute figures holding pedestrian shields and Ute figures wearing cowboy hats associated with equestrian culture. Sites are in Dominguez Canyon Cushman Creek, Dominguez Canyon, and Dominguez Canyon, respectively.

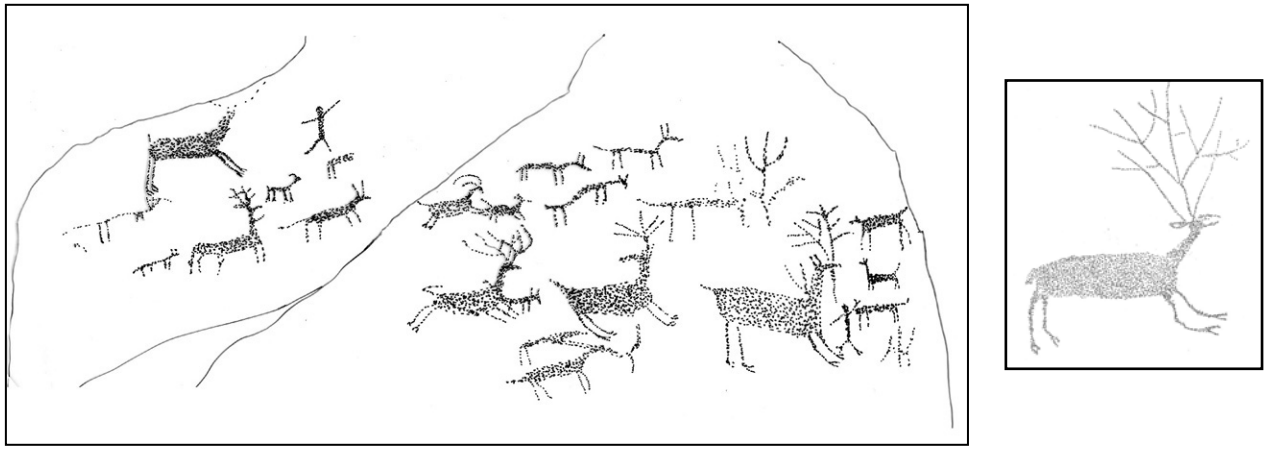
	Era	Period / Tradition	Projectiles	Rock Art Style (Cole 1990)	Source
12,000 10,000 9000 8000	Paleo-Indian 11,450 to 6450 BC* Glacial resurgence 11,200 – 7,600 BC.*	Early period 11,450 – 9550BC* Late 9550-6450 B.C*	Clovis Goshen Folsom Lanceolate points, no flutes Atlatl	Paleo-Indian 10,000 – 5500 B.C	Cole (1990) Reed et al. (2001)#
7000 6000 5000 4000 3000 2000 1000	Archaic 7300 B.C to 400 B.C. # 6400-400 B.C. * 6400 – 500 B.C.#	Pioneer 6400-4500* 7300 – 5400 BC# Settled 4500-2500* 5400-3200 BC # Transitional 2500-1000 BC* 3200-1200 BC# Terminal 1000-400 BC 1200 - 400 BC. #	McKean Lanceolate Mallory, Northern and San Rafael Side-notched Elko Corner-notched Elko side notched Northern Side-notched Pinto Bow and Arrow Rosegate series	Uncompahgre Complex## 7000 B.C.– A.D.1300 Western Archaic ** 5500 B.C – A.D. 1 ABSTRACT Tradition** ?1000 B.C. to A.D 1000 UNCOMPAHGRE STYLE ** ?1000 B.C. to A.D. 1000	Reed and Gebauer (2004)# Buckles (1971)## Reed and Metcalf (1999)* Cole (1990)** Baker (2003)°
0 1000 1500	Formative 400 B.C. – A.D. 1300* Numic Entrance 1100 – 1250 BP.* Fremont Protohistoric-Historic A.D.1100-1650* Late Precontact 1400-1625° Early Contact 1625-1840°	Fremont A.D. 200-1500* Anasazi A.D. 900-1100* Gateway 400 B.C.-A.D.1300* Aspen A.D. 1 - 1300* Canalla A.D. 1100 – 1650* Escalante Phase 1500 -present##	Cottonwood Triangular Desert Side-notched Uncompahgre Brown Ware pottery	FREMONT STYLE** A.D. 400 to 1500 PROTO-HISTORIC** A.D.1250-1882 HISTORIC** Ute, Paiute Navaho, Apache A.D. 1600-1830	
2000	Historic 1650 to present* Middle Contact 1820-1860° Late Contact 1860 - 1881°	Antero phase A.D. 1650 – 1881 * Ute, Paiute, Navaho, Apache			

Chart 1. Chronological chart showing the Eras, Traditions and Style Traditions. Authors are identified by color and publication dates. Sources are: * Reed and Metcalf (1999), # Reed et al. (2001), Reed and Smith Gebauer, (2004), ## Buckles (1971), ° Baker (2003), and ** Cole (1990)

The evolution of rock art styles and associated traditions can be seen in Figure 1 summarizing the stylistic traditions using only one or two examples gives a general idea of how the styles are identified and the cultural traditions contrast each other. During the late Archaic era, or the Transitional and Terminal Archaic Periods, 3100-200 B.C., as defined by Reed and Smith Gebauer (2004), the animals or quadrupeds have the characteristic long tapering legs and large body, with great branching horns and are often found in context with anthropomorphs that are thin and tall with long arms. Atlatls are portrayed during this era.

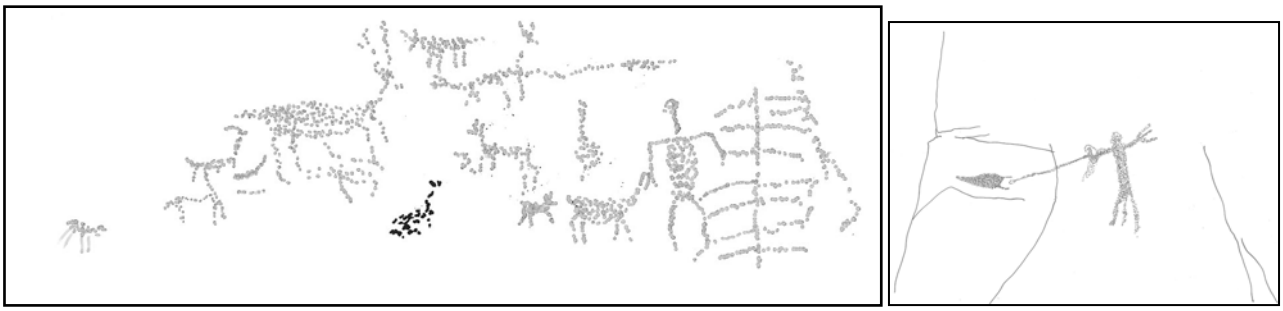


Gunnison Gorge Rock Art Shelter and Escalante Bridge site



Escalante Bridge and Plateau Creek.

Anthropomorphs during this period have thin arms and bodies can be full or just a stick form. The absence of stylized humans is apparent. Animal have cloven feet and sometimes show the dewclaws in profile (as if flattened out on either side of the foot).

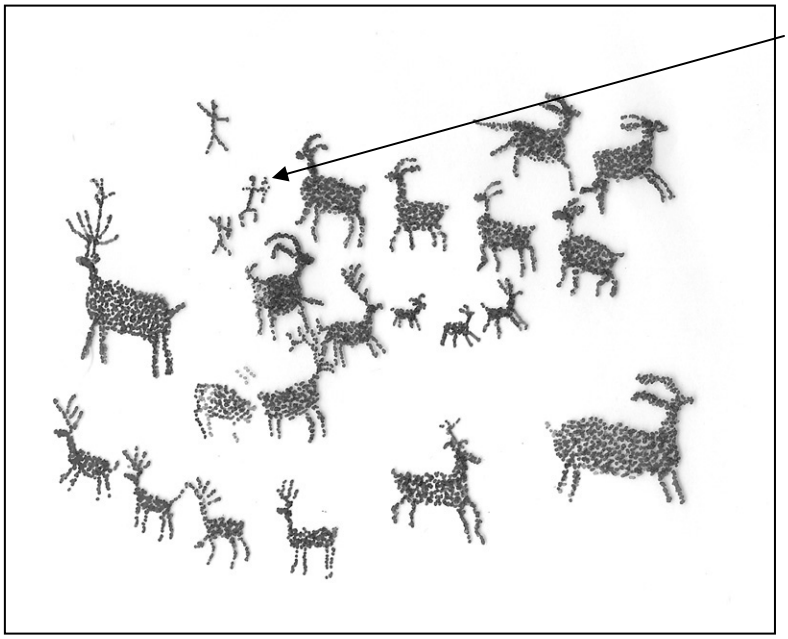


Deer Creek panel and Escalante Bridge panels. Anthropomorphs are thin with have long fingers and atlatls.

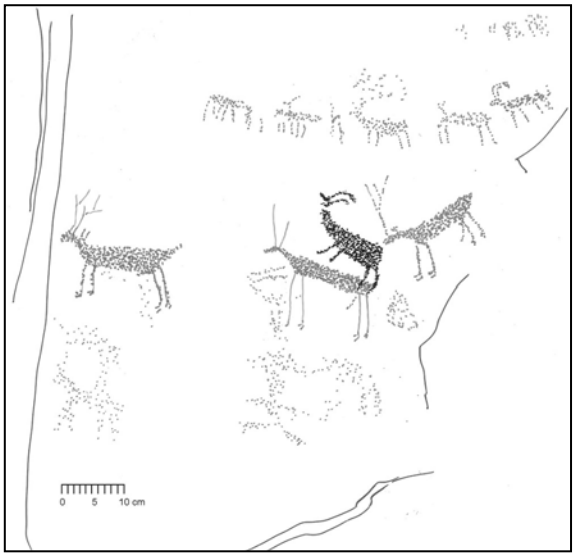
During this era, animals are portrayed larger than humans which may be a reflection of the Archaic world view, where game animals were the center of attention. It is interesting to see the shift in size and proportion to humans during the Formative Era. The animals become smaller and the humans more animated. Atlatls are absent as bows and arrows take center stage.

Formative Era

The Formative Era (200 BC – A.D. 1300) is characterized by the short legged, round bodied quadrupeds with smaller horns or antlers. Bows and arrows are depicted. Roatcap site (5MN3450), is clear example of animated stick figures with arm gestures portrayed. The top most figure exhibits the "driving" gesture, while two lower figures are aiming arrows with bows at the advancing game animals.



This panel is located next to a prehistoric game drive that is still utilized by deer and elk to access the higher elevations from the gulch. This panel may inform viewers of a successful strategy in driving the animals up a narrow causeway where hunters hiding at the top could succeed in shooting a tired animal reaching the top. The animated and abbreviated human figures relate the theme efficiently. The change of the animal size and shape over time is well illustrated in this panel.



Roc Creek Panel 3

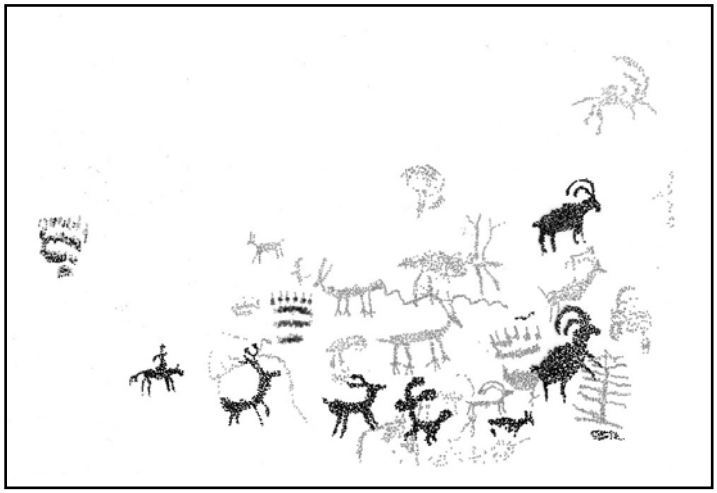
Sites with superimposition sequences are valuable in illustrating both Archaic and Formative eras.

The contrast between the late Archaic style animals and the Formative era can characterized by the change in shortening of legs and rounding of body shape.

The Panel 3 from Roc Creek clearly shows the archaic animals with long tapering legs and branching horns, superimposed by Formative era quadruped with short legs, rounder body and horns.

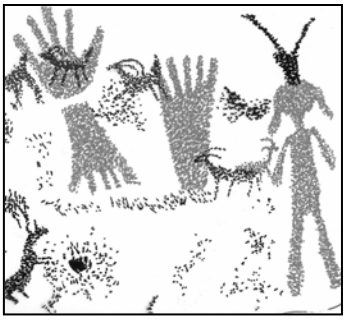
The Formative – Protohistoric

At Deer Creek, the Archaic period represented by the animals with cloven hooves and branching antlers is superimposed by Proto-Historic motifs, presumably Ute as evidenced by a horse rider on the left corner. Deer, rabbit and bighorn sheep are rendered in life-like forms.

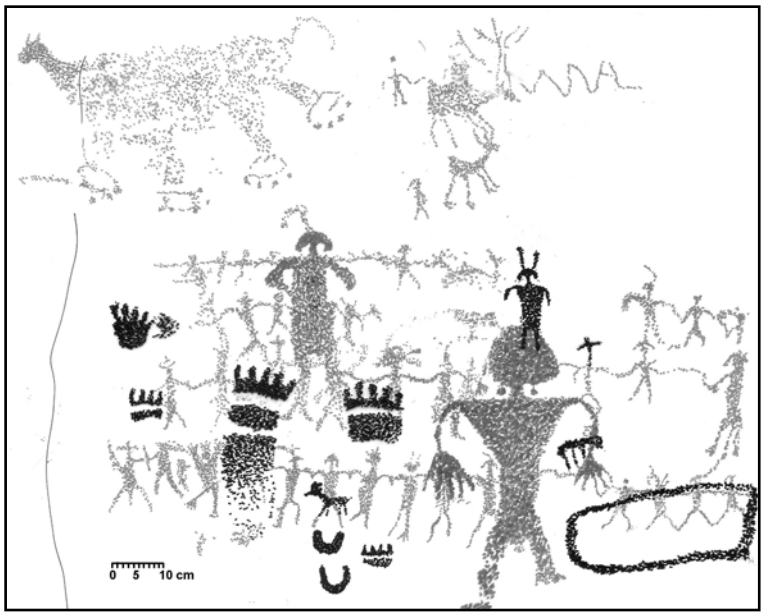


Deer Creek Panel

Superimposition sequences help clarify these transitions from one era to another. They support stylistic models for age determinations. At the Roc Creek site, are anthropomorphic figures with round heads and hair buns, characteristic of Basketmaker II or Pueblo I of the Formative era. Panel 8 shows the hand and feet motif, the figure's head and a quadruped of the Formative era (grey) superimposed by Proto-historic-Historic Numic (Ute or Paiute) quadrupeds, a horse, and a headdress with feathers (black).



Roc Creek, Panel 8

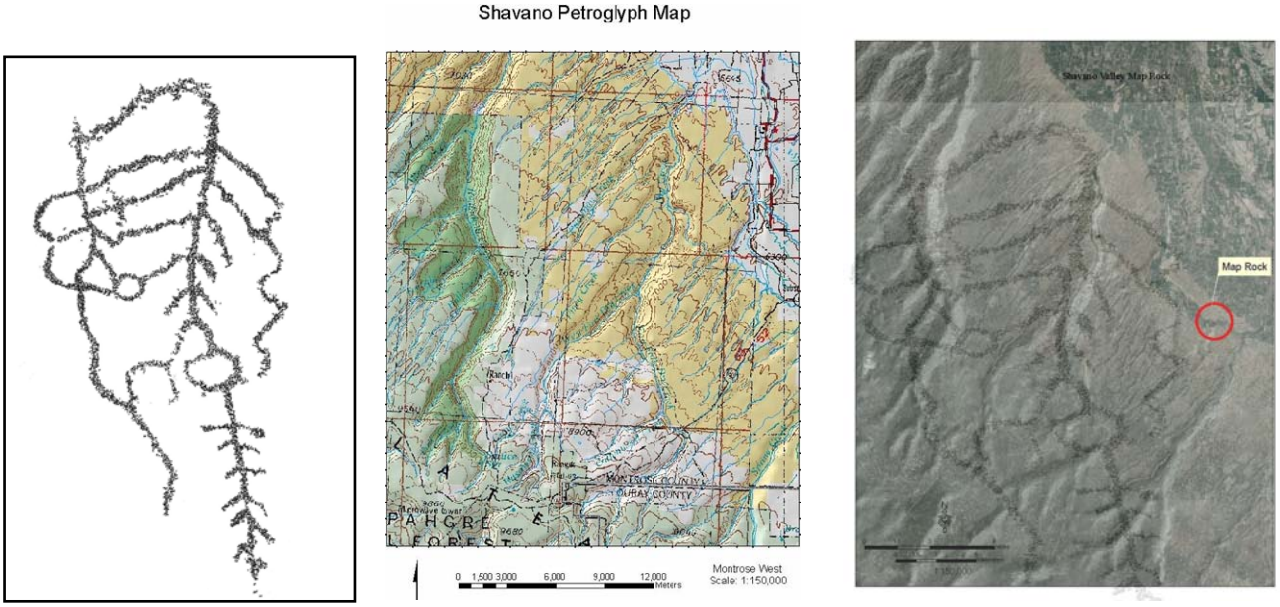


Roc Creek, Panel 10

The entire temporal sequence can be found in Panel 10. The light grey sequence illustrates the late Archaic figures at the top, that include a mountain lion and stick bodied anthropomorphs. Central in the panel are a line of human figures with different headdresses but all holding hands. Superimposed over the top of them are large anthropomorphs of the Basketmaker style of the Formative era. The Basketmaker/Pueblo period is represented by the large well pecked bodies of anthropomorphs, in this panel, of the same style and period as were the feet and hands of the previous panel (panel 8). Finally, during the Proto-historic/historic era, people of the Numic tradition, (Paiute, Ute) add their anthropomorph with bear paws and horse prints.

Numic Tradition – Protohistoric- Historic, 1300-1900 AD

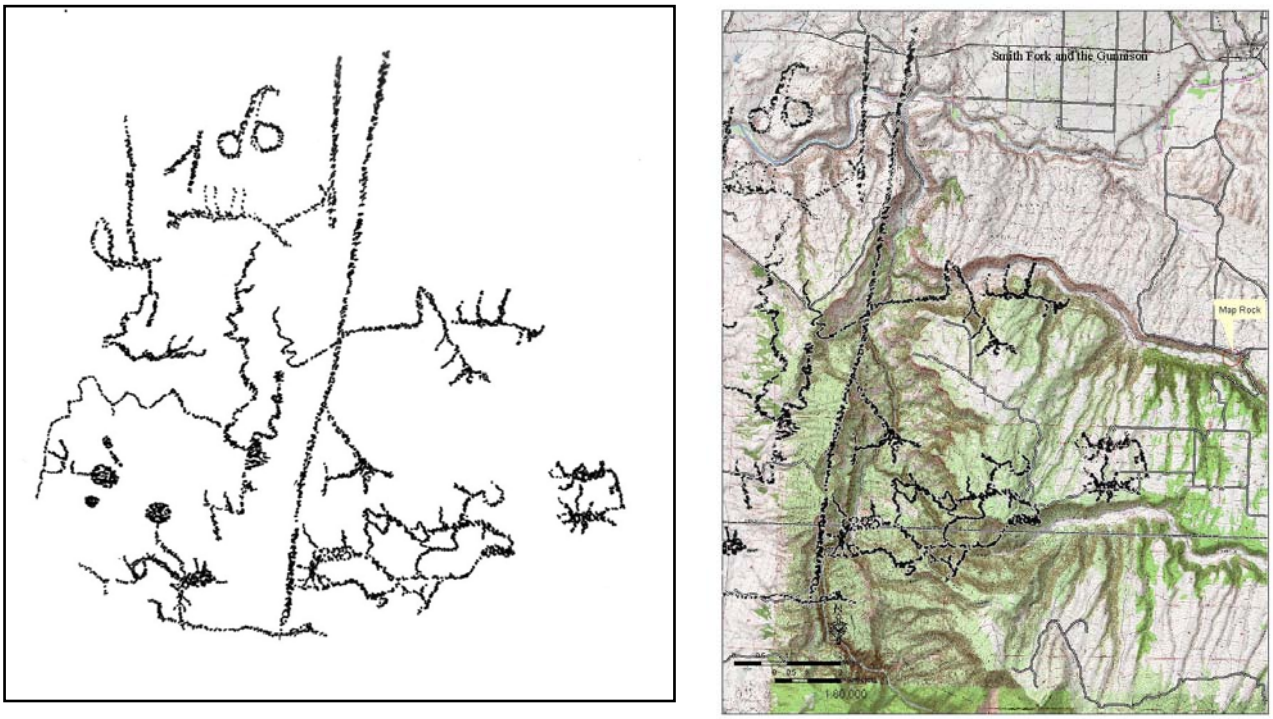
The Numic traditions are characteristic of a hunter/gatherer life style that relies heavily on knowledge of game trails, hunting strategies, procurement of wild foods and knowing the location of good water sources. Many petroglyph panels are found to depict maps of the trails that navigate the local and difficult terrains. They may describe game drive strategies, locations of springs and water sources, and resource procurement locals. Examples of petroglyph maps can be found at Shavano Valley Petroglyph site and Map Rock in the Smith Fork of the Gunnison (Patterson 2010a).



Petroglyph at Shavano Valley and Uncompahgre Plateau with Shavano Valley overlay.

The petroglyph on the far left is found at Shavano Valley petroglyph site. Clifford Duncan suggested that it represented a map of the area to the south. He said the Utes are oriented to the south, in contrast with Europeans who orient their maps to the north. To the Utes, the south is where the sun comes from and sun-wise direction from east to west (clockwise) is the preferred direction of travel (Duncan 2005). When this petroglyph is rotated to orient to the south, it has a striking resemblance to the map of the Uncompahgre plateau, of the immediate area. The green areas are basins that game animals migrate to in the winter. They are located along Roubideau canyon and river drainage. The center drainage is Dry Creek resembling an upside-down tree. To the far right is the Uncompahgre River. The final illustration is a direct overlay showing how very closely the petroglyph map fits over the physical land features to the south of the panel location.

A second example is a petroglyph known as “map rock” found in the Smith Fork of the Gunnison Gorge area. When rotated and placed upon a topographic map of the area to the south, a strong correspondence with the Ute trail location, the Smith Fork, and the adobe hill encircled are apparent.

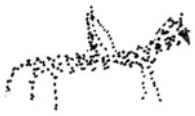
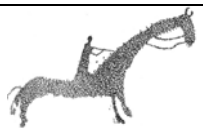
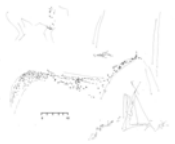


Map Rock at Smith Fork of the Gunnison and with the petroglyph overlay on a topo map.

The Numic traditions of the Formative era witnessed the spread of Shoshonean people throughout the Colorado Plateau. With the introduction of the horse, changes in lifestyle occurred with peoples who acquired the horse and an equestrian lifestyle. The distinction between Utes and Paiutes can be traced to the ability to support a horse culture or not. Large pedestrian shields could not be accommodated on horseback. It is postulated that pedestrian figures holding large shields may have been Paiutes. Mounted figures with small shields were Utes. Along with horses came mobility, wealth, trading capacities and power. The Utes dominated the Uncompahgre Plateau but intrusions by Paiutes from the San Juan basin were common.

Evolution of the Horse

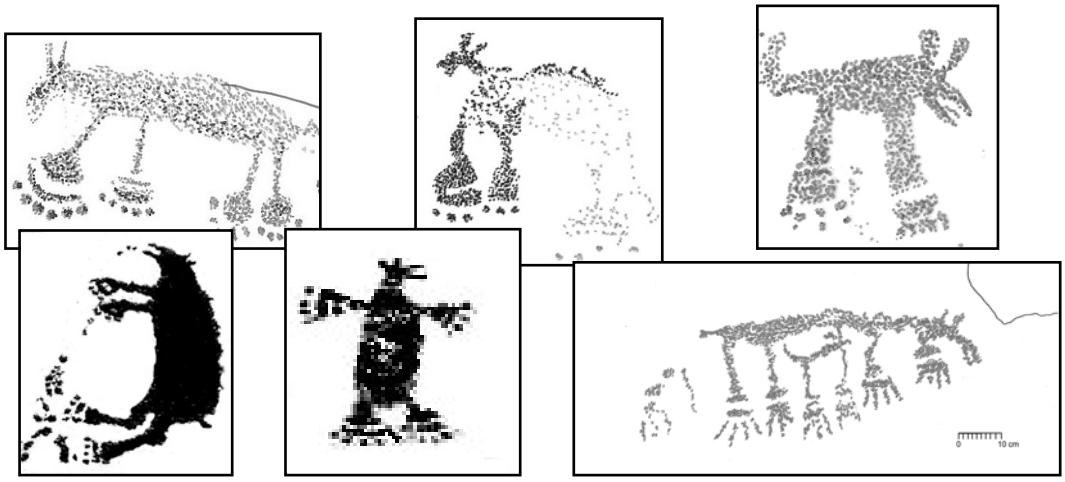
The following chart shows the evolution of the horse during the Historic era.

Proto-Historic		Early Historic		Late Historic
Leonard's Basin				
				
				

Cultural identification can be made by the direction the horse is oriented to. Utes prefer left to right while Plains tribes including the Cheyenne, Arapaho and Comanche depict themselves riding from right to left (see Patterson 2007).

The Evolution of the Bear

The following examples show the stylistic form of bear paws in walking bears found in the study area. Bears are depicted with square heads, short ears and a curved back. Often the paws are drawn in plan view while the body is in profile. Bear paws flexed so that all the toes are shown front on while the body of the bear is shown in profile. This style is referred to as *conceptual realism*. It is used to emphasize the important parts of an animal for spiritual or ritual purposes. Diagrammatic profiling is not meant to be naturalistic. It is used to emphasize what one 'understands' rather than what one 'sees'. Conversations with Clifford Duncan, Northern Ute elder and ethnographic documentation by Frances Densmore, (1922), indicate that the more fierce and aggressive a bear appears, the more power it brings to a ceremony for healing or for hunting other game (Duncan 2005, Densmore 1922).



Examples of the bear with flexed paws shown in plan view while the body is in profile view. Palmer Gulch, McHugh Gulch, Kannah Creek Shavano, Dewey Bridge, and Gateway on the Dolores River.

Petroglyphs of bear paw prints are interpreted as “a sign that a bear stood up to leave his paw prints on the rock. If a bear stands up, it means there is something of importance that caught his attention and made him stand up. Likewise, if a bear paw print is on the panel, something of great importance is being communicated there” (Duncan 2006).

The following table illustrates the bear paw prints found in the study area. The bear paw/basket motif is found in high frequency in Palmer Gulch but occurs also at the Escalante Forks site, 5DT3. The stylized paw prints are depicted with one, two or three horizontal bars. They range from flat or rounded, to V-shape heels. The final row show the claw marks with the toes.

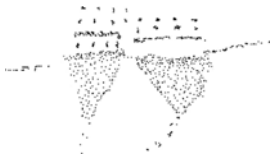
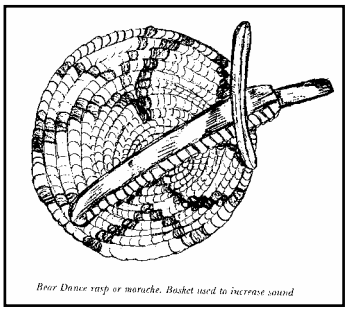
Bear Prints	 Shavano	 Shavano	 Escalante Forks	 Palmer Gulch
Bear Paw Basket Motif	 Palmer Gulch	 Escalante Forks	 Palmer Gulch	 Palmer Gulch
Stylized Bear Paws	 Palmer Gulch	 Palmer Gulch	 Dominquez Canyon	 Escalante Forks

Table __ (from Patterson 2006 table 6.6) comparison of bear paw prints and bear paw basket motif.

The bear paw evolution through time shows the tendency to abstract forms to enhance meaning. As symbols replace realistic forms, combinations of symbols create phrases. The combination of a bear paw and a basket produces a symbol for the Bear Dance ceremony, where a basket is employed as a resonator for the music made by rubbing a bone across a notched stick.

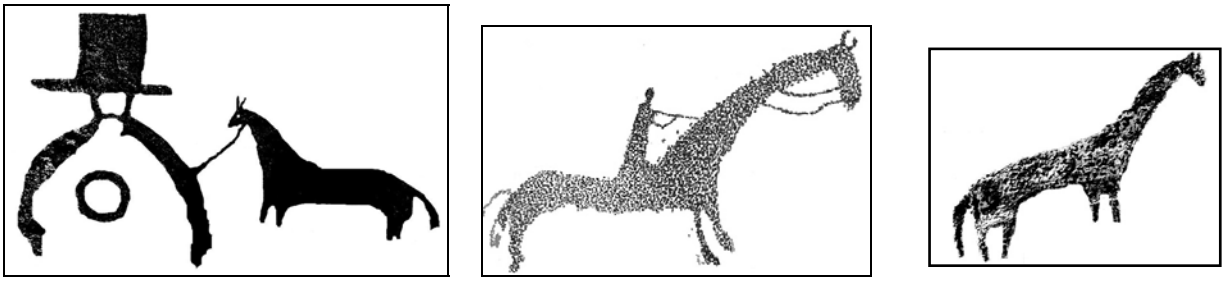

Bear Dance rasp or maraca. Basket used to increase sound

Finally, the bear paw takes on the symbolic shape of ferocity, the earlier depictions of a flexed paw are symbolized by the detailed bear paw and stylized paw with bars and claws. Medicine power from the bear was extremely important in healing ceremonies. The fiercer a bear, the more healing power he brought to the ceremony. The medicine men called upon the bear to help in doctoring their patients. Palmer Gulch exhibits several panels of which the theme is healing and bears medicine (see Patterson et al. 2006)

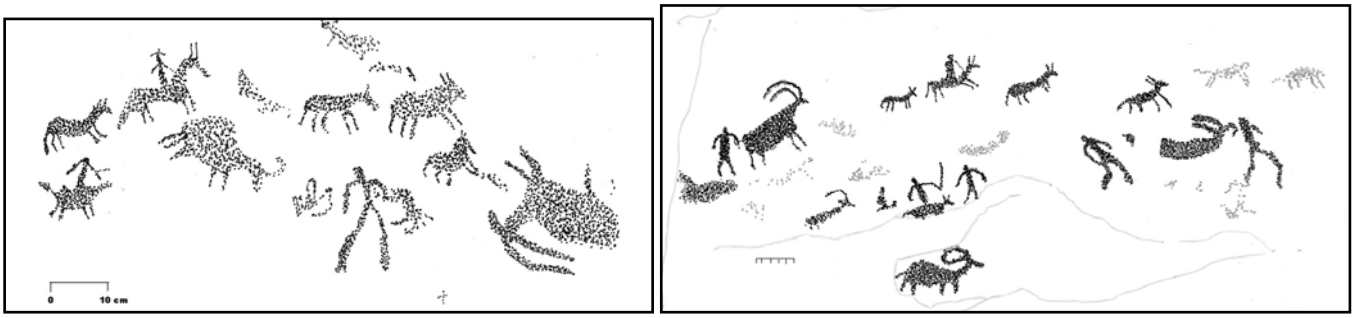
Historic Era

Historic panels are identifiable by the inclusion of the horse that was traded to the Utes by the Spanish. The horse appeared in the Uncompahgre Valley in the late 1700s. By the mid1800s the horse was well established in Ute culture, along with equestrian trappings of cowboy hats, fringed leggings and boots.

European hats and guns, equestrian clothing including cowboy hats and fringed chaps, are typical dress attire for the Utes during the late 1800's. The horse is often exaggerated with a long neck and very short lets. Called *conceptual realism* or *intellectual realism,* the horse is drawn the way the author "knows or understands" the animal. He knows the long neck and foreshortened legs and head from his experience. Clifford speaks of "speed and grace" as being conveyed (Duncan 2005, 2006)



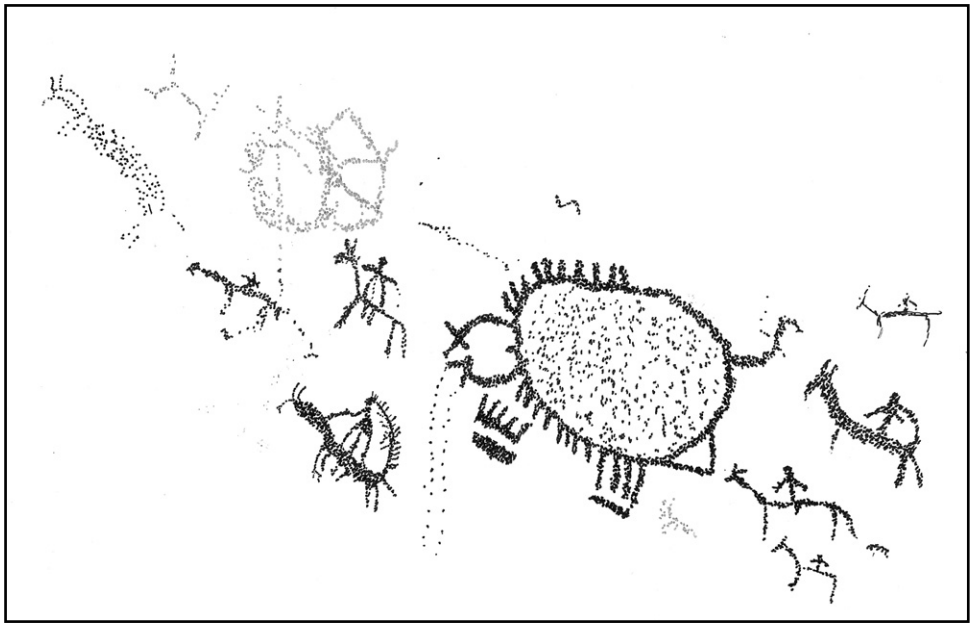
Harris Site, Leonard's Basin, and Shavano Valley Petroglph site.



Great Rabbit Hunt at Leonard's Basin

Gestures are emphasized as in this panel of the great rabbit hunt with riders, dogs, sticks, uphill and down as the rabbits are caught, clubbed and bagged. Martineau (1973) illustrates how the body and horns of the quadrupeds show direction as part of the narrative. Looped horns indicate "returning" while a single horn indicates stopping or staying in one place. Open horns and the inclined posture may refer to the hill that was climbed by hunters in pursuit of rabbits (Martineau,1973).

The Late Historic era evidences nearly total abstraction and abbreviation of form. Sign language symbols dominate the panels. An example of a petroglyph thought to represent the historical event of 1881 extradition of the Utes out of Colorado to Utah is shown here.



On the right side of the panel are 4 mounted riders with their arms cast down at 45º a "negation" position. One of the riders has a trailing ceremonial feathered headdress. The left side of the panel shows two more mounted riders. One rider has arms held out horizontally. The other is holding the reins and wears a feathered headdress characteristic of the Ute Indians. Both of their bodies are hollow. A third rider has outstretched arms held horizontally. The horses appear to be moving from right to left and are mostly 'stick' figures. They are abstracted to just the gestures needed to portray soldiers with negative arm gestures, and without the cultural affiliations of the Ute.

The central figure is a field of dots encircled by a heavy line with short perpendicular lines radiating around part way. There are two curving arcs with dots descending the front. There are dots descending the panel and were missed in previous recordings by Cole (1987,1990) and others. Below to the left is a bear paw print. In the center bottom is a short horizontal bar and to the right is a 45° angle jutting out from the circle.

Interpretations from several individuals tend to classify forms in associations with known items or material objects. Then after several viewings, interpretations were modified and changed. Listed below are several interpretations that have been offered for this panel.

1. An infestation of large beetles that came from the Great Plains and struck the Front Range (Robert Cuch).

2. A buffalo hide being stretched and dried (George Decker).

3. People standing around in a circle looking up at the stars in the sky where spirits of the dead travel (Clifford Duncan).

4. The brush corral built for the Bear Dance, identified by the bear paw below it. The dots are people inside the corral and the appendages in front represent the guarded entrance way made of stout posts. A rider is wearing a ceremonial headdress associated with the Bear dance (Patterson and Duncan 2007).

Clifford Duncan made several trips into Dominguez Canyon to view this panel and others. After considering it for a few hours at the site, he determined that the key to its interpretation lies in the arm gestures and the direction the horses are facing. In the final analysis, Clifford has pointed out the arm gestures in a 'negation' gesture that seems to suggest the riders are not Ute, but are escorts from the U.S. government enforcing the policy to remove the Utes from this area. The riders are moving from the right to the left that is anti Ute tradition. The horse riders with horizontal arms indicate 'stopped'. Their bodies are hollow, not solid. Clifford filled in the context that helps with the understanding of this panel.

The Utes were told to leave within two days and take nothing with them, hence the 'empty' bodies of the riders on the left. They were also forbidden to conduct their traditional ceremonies or participate in religious dances. Clifford recalls that all the sacred ceremonies were banned by the government, except a modified version of the Bear Dance that was deemed a social dance and not a threat to civil order. It is in this context, that Clifford interprets Panel 1 as a depiction of his people being surrounded and 'corralled' by the U.S. government and moved off their land to Utah. They are being pushed against their will, from right to left, by riders displaying a negative arm gesture. The Army demanded that the Utes take nothing with them on their forced march north (Duncan 2007).

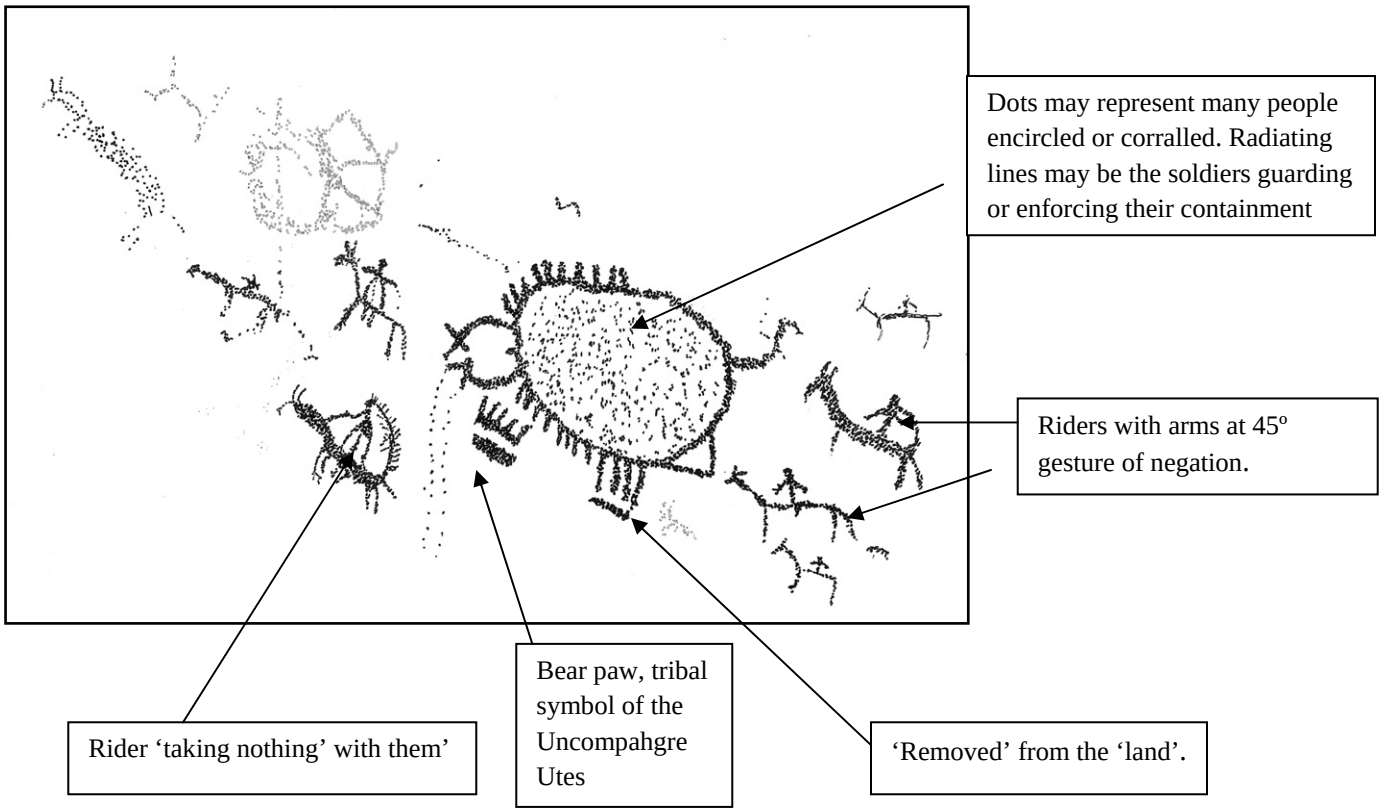
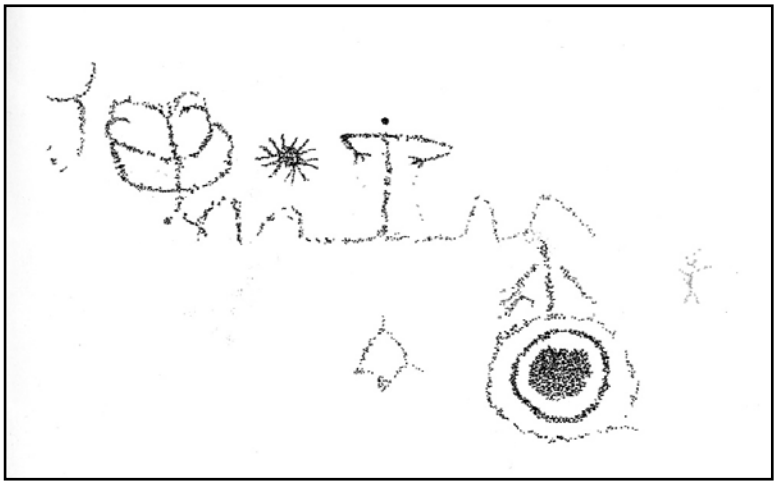
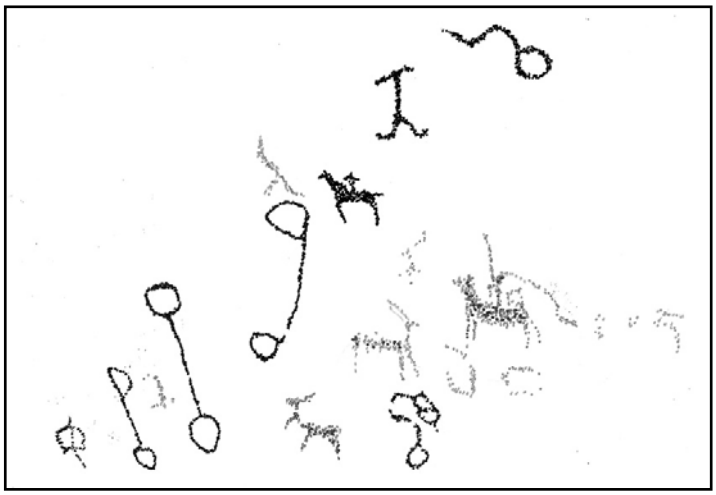


Illustration of the interpretation given by Clifford Duncan.

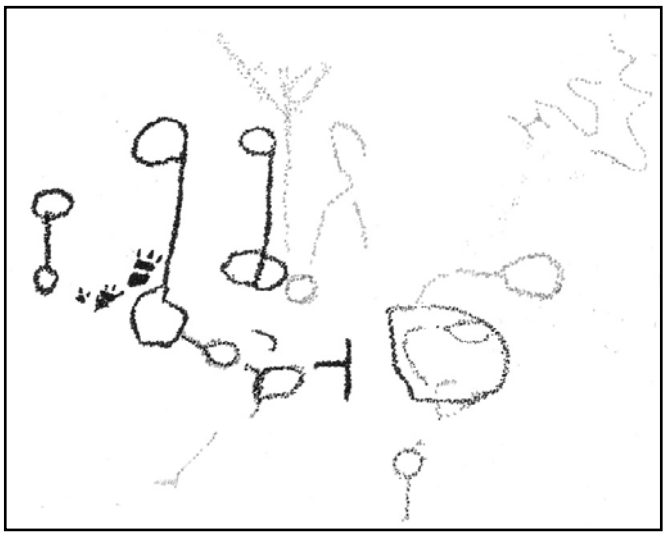


Also in Dominguez Canyon is a totally symbolic panel. Clifford Duncan interprets this panel as depicting a ceremony. The solid circle with two concentric rings represents a ceremony. A stick figure human is sitting on the edge of the circle and performing the ceremony. The stick figure above with arms bent inward is 'holding' the ceremony. His legs are attached to the wavy line that runs horizontally. The man may be dancing as part of the ceremony. The 'sunburst' may have something to do with the type of ceremony. The other elements cannot be identified. (Duncan 2007).

These two panels are situated adjacent to each other on a boulder in Dominguez Canyon. Clifford Duncan interprets this panel to represent a hunting strategy. The horse and rider have been abbreviated to stick figures including only two legs represented on the horse. The circles joined by lines represent high points and ridges. Clifford says the animals are driven up the canyons between the ridges to where hunters are stationed on the high points (Duncan 2007).



Both panels, viewed together show the animal tracks situated below the high point and traveling along the ridge that connects them. The mounted hunter is stationed up high on the circled area. Except for the animal track and horse rider, the abstract forms dominate the panel. As more and more abstract form is used, the higher the contextual information is communicated. It makes it more and more difficult for outside cultures to interpret what is inside information. Like the words of a song, without knowing the language, the music can be heard but the meaning is not known. The panel can be appreciated for its abstract forms, but the meaning of the forms is not known without ethnographic analogy or Native consultation.



Navajo Cultural Association

The majority of the Uncompahgre petroglyphs of the Late historic era can be identified as Ute or Paiute, however, there are a few pictographs of the Navajo traditions. These are found on the eastern side of the plateau and may reflect the migrations of Navaho people up the Navaho Trail from the San Juan Basin, as indicated on Hayden's 1858 map. There are two examples of paintings of deities. The first is found at the north end of Shavano Valley painted in dark charcoal , white and blue representing the female *Yei* of the Mountainway Ceremony. Another is on an overhanging rock face above Horsefly Creek, painted in red. It resembles the Navaho god *Ghaan'ask'idii* (Patterson 2005)





Painted sites of Navaho Tradition located in Shavano Valley west, and Horsefly Creek.

Summary

The Uncompahgre Plateau has a rich pictographic history representing the migrations and settlement patterns of archaic hunter/gatherers, Formative era hunter/gatherers with some agricultural influences, and finally the Proto-historic cultures who occupied the area at the time of contact. The pictorial record shows a gradual shift from displays of large animals at river convergences and hunting vantage points, to smaller animals and larger humans with a transition from atlatls to bows and arrows. Lifeways shift again with the introduction of the horse and a mobile lifeways brings in prosperity with depictions of buffalo hunts, rabbit drives and fierce battle scenes. Cognitive changes are represented in religious iconography as the “little spirit dwarf” with big hands and feet give way to Bear Dance ceremonies for healing represented by bear paws and trees.

Time marches on and new rock engravings appear, with scratched and painted names and slogans, now called “graffiti”, yet after the century is out, will also be part of the rock art record and cultural resources of the Uncompahgre Plateau.

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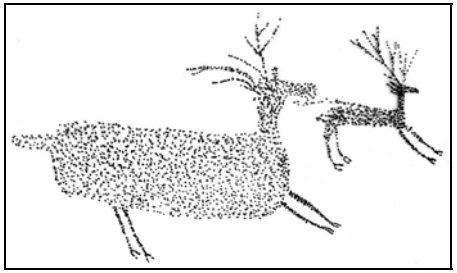
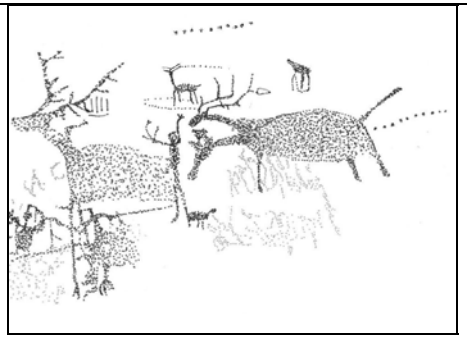
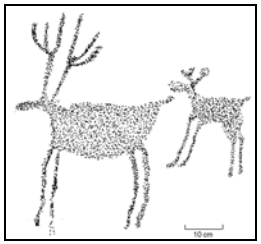
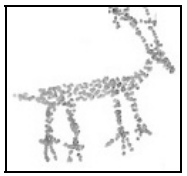
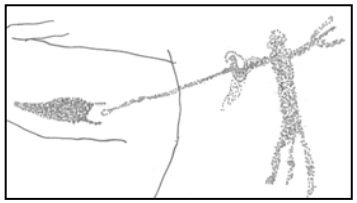
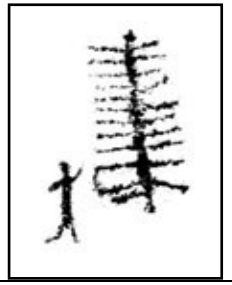
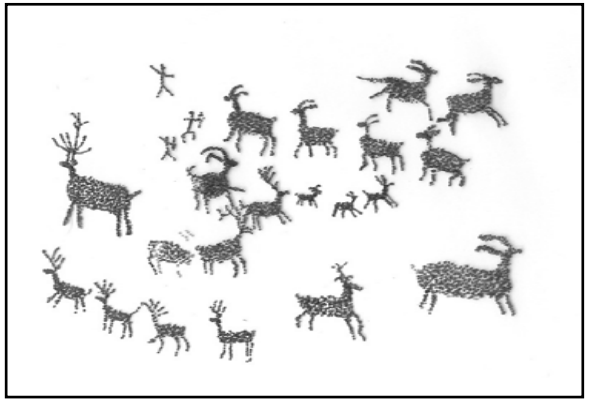
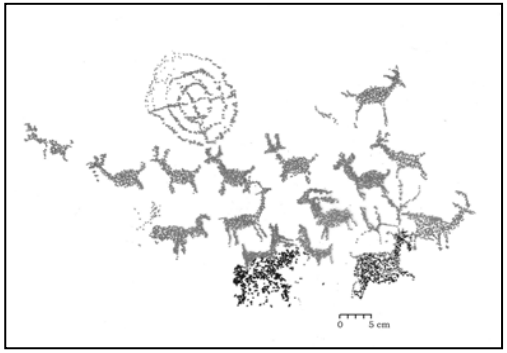
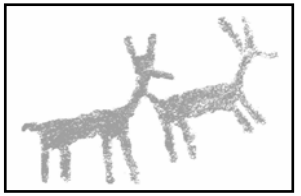
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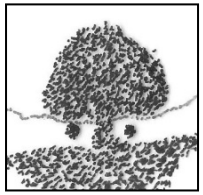
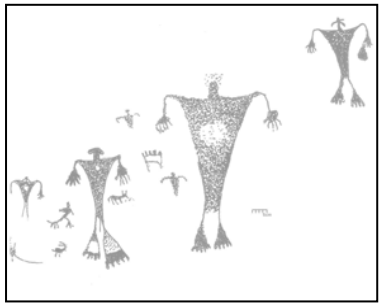
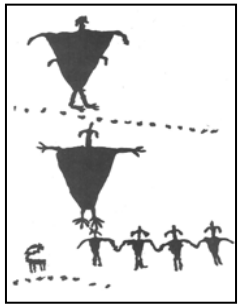
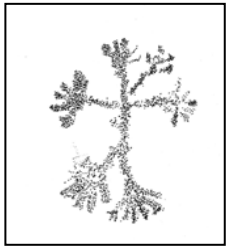
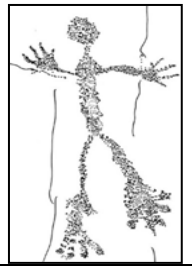
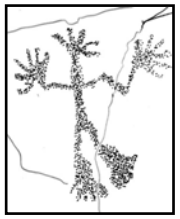
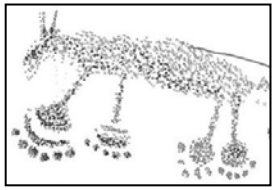
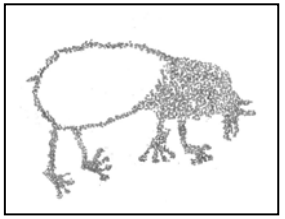
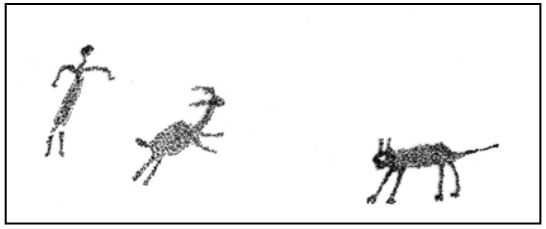
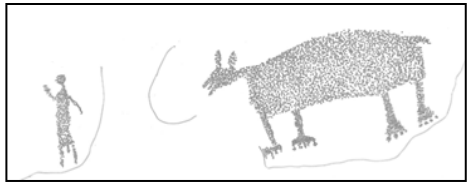
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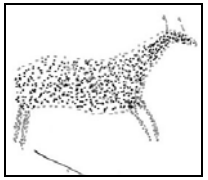
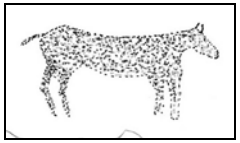
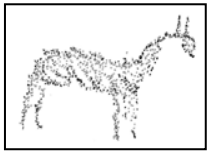
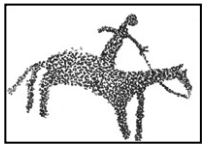
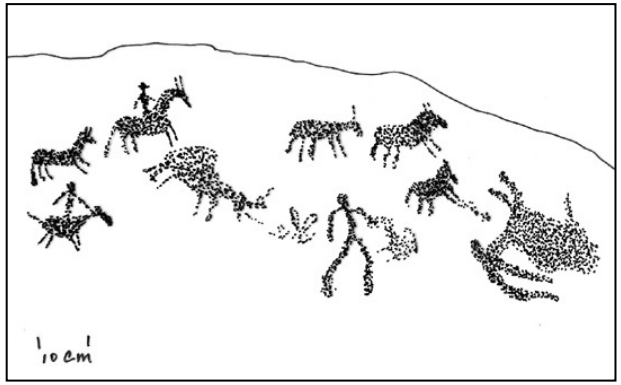
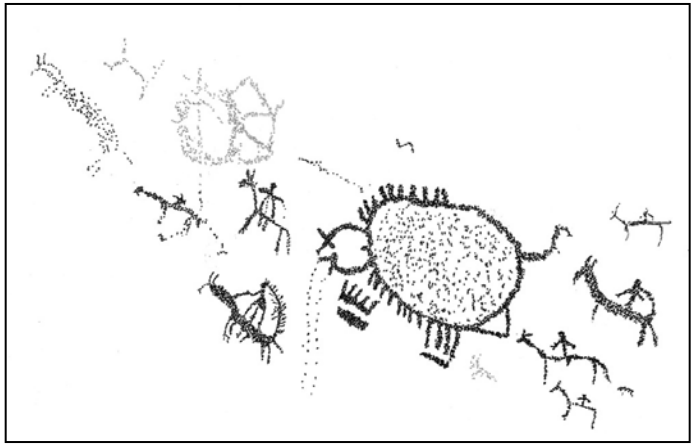
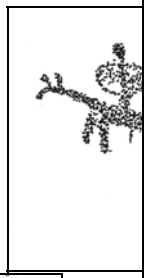
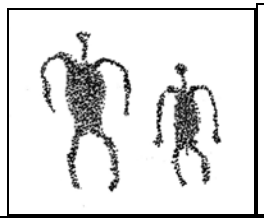
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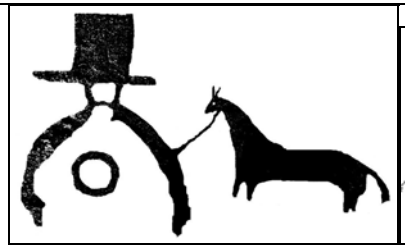
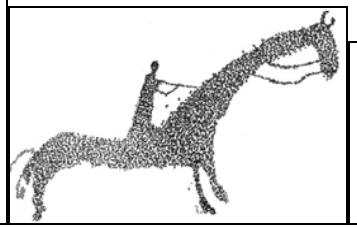
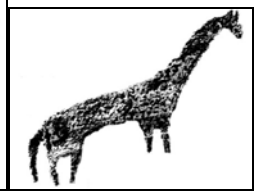
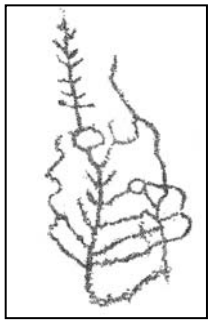
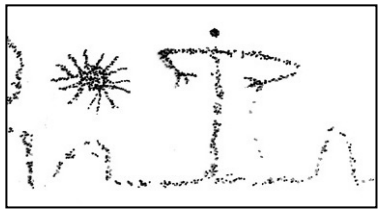
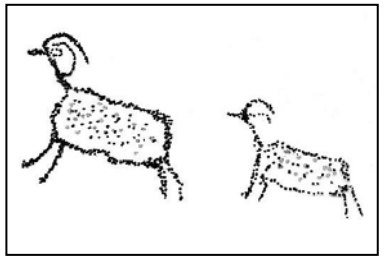
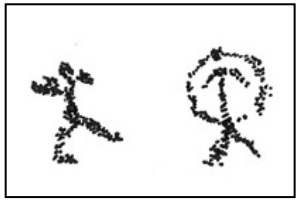
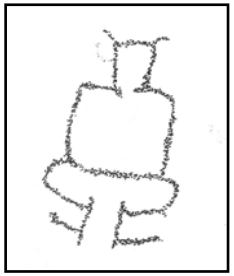
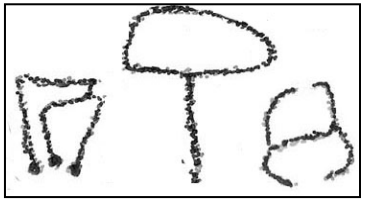
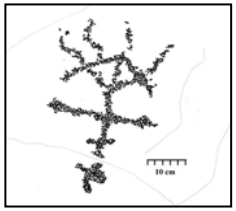
Watchman, Alan L.
2006 *Conservation of Graffiti at the Roc Creek Site, 5MN 443*, BLM Field Office, Montrose, CO.

Chart of Rock Art Chronology

Era	Stylistic Changes
Archaic 3,000 – 200 BC Animals Bodies are very large with long tapered legs and branching horns Humans are very small, thin and less visible. Atlatls are in use	        
Formative 200 B.C. – A.D. 1300 Animals are rounder with shorter legs. Humans appear with bows and arrows	  

Cultural affiliations between Ancestral Pueblo (first row) and Numic (second row) are evident in the head and body shape.	         
Animals are depicted in *conceptual realism*, with exaggerated paws, empty or starving bodies.	    
Proto-Historic A.D.1300-1650 Humans and animals interacting in warning narratives	   

First depictions of a horse (3) Late Historic depictions of a horse (3)	    
Historic 1650-1900 Humans on horseback Animals with gestural postures Cultural Political Band affiliations Sign language symbols, narrative panels of historic events	     

Directional Symbolism with horses Personal ID *conceptual realism* in exaggerations of body parts.	  
Abstract motifs representing maps, gestural communications, hunting plans ceremonial motifs, burial avoidance areas, and possible band affiliations.	       

Scratch Glyphs Of tepees, horses cows, and women			