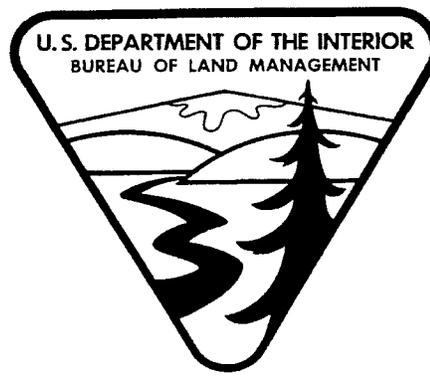


Cultural Technical Report

for the

Pinedale Anticline Oil and Gas Exploration and Development Project

Sublette County, Wyoming



Prepared By:

Bureau of Land Management
Pinedale Field Office
Pinedale, Wyoming

In Cooperation With:

U.S. Army Corps of Engineers
U.S. Forest Service
State of Wyoming

November, 1999

Cultural Resources Technical Report

Cultural resources, which are managed pursuant to the National Historic Preservation Act of 1966 (NHPA) and the Archaeological Resources Protection Act of 1979 (ARPA) and other statutes are the nonrenewable remains of past human activity. The archaeological record of the Pinedale Anticline Area has been created and identified through formal and informal professional surveys, test excavations, examination of ethnographic materials, local informant interview, consultation with modern American Indian people, archival research and the historic record. Historic period sites relating to euroamerican exploration and settlement in the study area is established by use of historic and archival records, by formal historian's research, by information provided by local ranchers and by informant interview. The Pinedale Anticline Area is rich in prehistoric resources (though little synthetic efforts have occurred) and also contains large quantities of historic period sites. The historic period sites predominantly relate to regional settlement, open range ranching, stock grazing, emigrant migration and wagon road passage.

As of Fall, 1998, about 257 sites had been recorded by about half the number of cultural resource inventory projects. These investigations have provided valid inventory of ca. 3036 acres (1025 block acres and 2011 linear acres). This provides an average site density of about one site per every twelve acres. This information does not include the recent 3-D seismic data conducted in 1999 throughout the EIS area. 1998 seismic activity resulted in an average of 3.9 linear acres of inventory for each section within the seismic study area. Additionally, ca. 4520 acres of the PAEIS were subject to Class II (representative sampling) inventory by the BLM in the late 1970's. Class II inventory areas are not considered adequately inventoried, by current standards. Recent interest in development of the area has caused an increase in the number of cultural investigations and many of these recent projects have yet to be submitted and/or reviewed by the BLM. These projects will only increase the number of known cultural sites within the study area. For example, 1999 seismic inventory alone resulted in the recordation of an estimated 500 additional prehistoric sites.

SITE TYPES

Known prehistoric site types within the Pinedale Anticline Area include campsites, housepits, stone circle sites, other rock alignment sites, lithic scatters, kill/butchering sites, rock shelters, floral processing locales, human interment sites, a reinterment site, sacred or respected sites, extensive lithic procurement locales (see Archaeological Landscapes, discussed below), Traditional Cultural Properties and limited activity sites. Rock alignment sites include vision quest locales, stone circles sites such as tipi rings, Medicine Wheels, linear alignments or "arrows" and cairns. No drive lines are currently recorded, but in the vicinity of The Mesa, stone alignment/stone circle complexes suggest that drive lines may exist. Human burials have been documented within the study area. Both the geomorphology and geography of the study area are conducive to the presence of these sensitive site types. Preliminary work conducted in this area suggests an overall high site density and complex geomorphology.

The EIS area can be broken down into three archaeological sub-regions. First, the southern sagebrush steppe is an area of complex soils, geomorphology and dense Archaic-aged occupations. Prehistoric sites between 4,000 and 7,000 years old are common in the southern steppe, a rare abundance of Archaic aged sites. Second, the Mesa interior upland itself is dominated by a quartzite and chert armored surface containing thin "A" horizon soils. This zone contains extensive casual lithic procurement but diminished buried site potential overall. Thirdly, the "breaks" around the Mesa (including both the New Fork and Green River high terraces) is a zone of high site potential, especially of rock alignment sites and complex archaeology. Features located here are of interest to both prehistorians and modern Native Americans.

AMERICAN INDIAN RESPECTED SITES AND TRADITIONAL CULTURAL PROPERTIES

In the late Nineteenth century, the study area was used by predominantly the Shoshone; though Bannock, Ute and other Indian tribes frequented the Upper Green River. In pre-historic times, sites relating to Indian use exist, but identifying specific tribal affiliation to these remains is difficult. Both select prehistoric sites and the more modern American Indian use sites can be considered as respected areas or sensitive sites by modern Native American Indians, and may be formally considered as Traditional Cultural Properties (TCPs). Several of these locales lie in the project area.

Sites and properties within this class are protected by numerous laws, such as the Native American Graves Protection and Repatriation Act (NAGPRA), the American Indian Religious Freedom Act (AIRFA), and by various Executive Orders. Human burials, rock alignment sites, petroglyphs, steatite procurement locales and modern day American Indian use, extraction or religious sites are considered respected, sensitive or sacred to modern American Indians. Several such sites have already been identified in the PAPA, based upon the last fifteen years of archaeological investigations and Indian consultation, and the 1998 project specific Native American consultations. Others sensitive locales are known for the southern project area (e.g. 48SU363) but await Native American examination. Consultation with affected American Indians concerning the identification and management of specific Traditional Cultural Properties and other sensitive sites began in earnest in 1998 and is ongoing. Indian consultation has resulted in several recommendations concerning the management of Indian sensitive/sacred/respected sites, disturbance buffers, holistic management approaches and guidelines and how Native American traditional practitioners want BLM to manage sensitive areas. A general theme of consultation has emerged-leave these sensitive areas alone, don't allow for disturbance or non-Native "meddling" in identified sensitive areas.

CHRONOLOGY

The earliest securely documented human occupations in North America are associated with diagnostic (temporally distinct) projectile points of the Clovis and Folsom Traditions. Clovis and Folsom sites have been radiocarbon dated to between 12,000 and 10,500 years ago. These "Paleoindian" sites represent early human adaptation to Late Pleistocene, postglacial environmental conditions. Past emphasis on the "Big Game Hunting Tradition" i.e. a reliance on Pleistocene megafauna for subsistence, may have been overstressed (Thompson, per. comm.). Studies of Paleoindian sites continue to fascinate archaeologists, however, and the new trend in paleoenvironmental reconstruction of late Pleistocene/early Holocene environments is welcome.

Early Paleoindian occupations are documented known from just south of the Anticline Area and within the Jonah II area. 48SU389, 48SU907, 48SU908 and 48SU909 record extensive Paleoindian occupations associated with an assumed perennial water source. Recorded in the 1970's and rerecorded by the State of Wyoming in the 1980's, the site complex has produced Folsom material, Paleoindian artifacts in the Hell Gap, Agate Basin, Scottsbluff and Cody Complexes, as well as numerous Archaic and Late Prehistoric period artifacts, a Bison bone bed, groundstone and other artifacts. Paleoindian occupations spanning a 12,000 to 8,000 year ago time period are suggested at this large and significant site complex.

The first documented Paleoindian presence within the EIS area is recorded at 48SU1421. Here, Late Paleoindian diagnostic artifacts in the Lanceolate and Medicine Lodge Creek/Lovell Constricted Series were found. The "Jimmy Allen" Lance point tentatively dates the site to about 9,000 years ago. A Pryor Stemmed Point suggests an 8500 year old occupation. Associated with a campsite adjacent to an ancient playa lake, the site setting is duplicated at several locales within the study area. One similar area, in the Jonah II area, has already been identified (Sand Draw Playa Complex) and has produced a Folsom point. Additionally, numerous Paleoindian isolated finds have been located within the heart and along the fringes of the project area (i.e., Mt Airy Folsoms, the Sommers Folsom, and at Boulder Lake- see Vlcek, 1997b). The numbers of such finds indicate that the PAPA, especially the northern Mesa, was actively used during this early period of prehistory. The potential for use of these sites for paleoenvironmental reconstruction should not be overlooked. Additional Paleoindian sites in the Pinedale Anticline are likely occur, though such sites are not abundant. Extensive prior artifact collecting throughout the EIS area makes location of temporally diagnostic Paleoindian material difficult.

By about 8,000 years ago, postglacial environmental conditions began to reflect a more modern setting. Pleistocene megafauna such as Mammoth, Bison Antiquus, camel and the early horse became extinct. Human occupation sites reflect this shift, and archaeologists refer to the subsequent 6,000 years of prehistory as the Archaic Period. Figure 1 depicts several different interpretations of Archaic Period chronology (Vlcek, 1997a). The Metcalf (1987) scenario drew from the Exxon LaBarge EIS project to the south of the Jonah study area; Wheeler's (1986) similar chronology reflects excavations at the Exxon Shute Creek Plant Site. The McKibbin (1989) version reflects work in Sweetwater County, Wyo. at Black Butte Coal Mine, similar to that of McNees (1994).

Finally, archaeologists at Western Wyoming College continue to refine southwestern Wyoming's chronology based upon the most recent data and a recognition that Late Paleoindian sites may indeed mirror "Archaic" lifestyles. Rather than exclusively Big Game hunters, Paleoindians early on may have developed detailed knowledge of the environment and the seasonal availability of floral and faunal resources-a hunting/foraging/collecting subsistence

strategy. The resultant settlement pattern would resemble an annual cycle or "seasonal round" tapping into different resources in different locales, when available.

Sites dating to the Archaic Period (roughly 8,000 to 2000 years ago) are numerous in the study area. These sites are temporally divided into the Great Divide Phase, the Green River/Opal Phase, the Pine Springs Phase (roughly equivalent to the McKean Technocomplex on the northern Great Plains; see Frison, 1991, p 19-21 and Vlcek, 1997a for expanded discussions) and the Deadman Wash Phase (equivalent to Late Archaic on the Plains). The Uinta Phase marks the use of the bow and arrow into southwestern Wyoming and later, the production of ceramics. These cultural innovations mark the traditional end of the Archaic Period.

The Trappers Point Archaeological Complex, located along the northern edge of the EIS area, includes sites like 48SU1005 and 48SU1006. Excavations at these sites have produced hearths, lithics, tools and butchered and processed mammal bone relating to 6000 year old antelope procurement and processing activities (Fransis, nd). The Trappers Point Site reflects the exploitation of an antelope migration corridor that several scholars think is several thousand years old. 48SU1754, located and impacted during road upgrading activity, was subsequently subject to a joint McMurry Oil/BLM salvage effort. Hearths, lithics, tools and butchered and processed mammal bone were recovered from the excavations. Radiocarbon assay documented an occupation of 3590±60 years before the present (BP), a Pine Springs Phase/McKean Technocomplex site. Sites 48SU1005, 48SU1006 and 48SU1754 represents the only sites near the EIS area that have been subject to controlled excavations and all are considered to be eligible for National Register inclusion. Large numbers of archaic age sites are commonly being identified within the Jonah II area (Vlcek and Current, 1997). Several such sites (48SU2094, 48SU2317, 48SU2324) have been discovered during construction of energy extraction projects in the Jonah field and await mitigative excavations. Among these sites are prehistoric housepit features radiocarbon dated at 6600 and 6000 years ago, representing the earliest recorded prehistoric dwellings within the state of Wyoming. These sites will prove to be critical in synthesizing SW Wyoming's prehistoric past.

Other Archaic-aged campsites like 48SU1328, 48SU1561, 48SU1562, 48SU1751, 48SU1778 and 48SU1779 are commonly identified. These sites usually date to the Pine Springs and Deadman Wash Phases of the Archaic, produce McKean Techocomplex (48SU1328) and Late Archaic Period (48SU1751) dart points, and numerous lithic tools. The Archaic dart point recovered from 48SU1751 was manufactured from obsidian, a volcanic glass that can be easily sourced via X-ray florescence techniques to the exact parent obsidian flow. Obsidian source analysis (Thompson et. al. 1993) is proving to be an important research objective used to discern ancient trade patterns and population movement throughout the Intermontaine region over the millennia. Sites within the EIS area will undoubtedly play an important part in this study.

Sites dating to the Late Prehistoric Period, Uinta and Firehole Phases (ca. 1800 to 200 years ago) are numerous. Recent 1997 inventory ancillary to a 3-D seismic effort in the Jonah field recorded some seventy-odd new sites, many of which date to the Late Prehistoric period. Sites like 48SU1563 have produced both Rose Springs Series arrow points (a Uinta Phase marker diagnostic) and ground stone, suggesting both hunting and vegetal food collecting as subsistence strategies. Numerous other sites have produced these time markers.

An important site containing prehistoric Intermountain ware ceramics is 48SU1443, located in the EIS area. Here, sherds of brown-gray pottery containing sand (or grit) tempering may relate to similar ceramics recovered from the Wardell Site, located to the west. At the Raven Nest Site in the Jonah field, prehistoric ceramics look remarkably similar to the Wardell material. The identification of prehistoric ceramics on sites anywhere within the Green River Basin is both rare and unusual and adds to the site's significance. Ceramic analysis can shed light on shared cultural affiliation with adjacent groups, such as the Fremont regions within Utah to the west and south, or the sedentary villagers to the south and east in Colorado. Distinctions between Uinta Phase peoples and the later Firehole Phase occupants in the area can be drawn by ceramic analysis.

Stone circle sites like those recorded at KL96-12-10 and KL96-12-31, and those known from the Mesa and Blue Rim represent preserved prehistoric dwelling or residence sites that suggest a modicum of sedentary (or seasonal) existence as well. These sites, though currently unexcavated, frequently are Late Prehistoric in age and are good candidates for containing ceramics in their assemblages. Additionally, some stone circle sites considered respected and sensitive by some modern day American Indians.

One site, 48U968, impacted by well pad construction in the Jonah field, was subject to a small salvage effort. Two hearths were excavated, but noteworthy was the recovery of portions of a steatite bowl (McKern, per. comm.) Steatite was aboriginally quarried in the adjacent Wind River mountains (Vlcek, 1993) and represents a unusual resource subject to transportation or trade with adjacent prehistoric populations. The recovery of steatite on sites removed from the mountains is rare, but not unknown in the Jonah area (Pete Olsen, Per. comm.). Steatite use is more commonly documented on Late Prehistoric and protohistoric sites, though Archaic-aged use is documented. Steatite is also considered a sacred material by some modern day American Indians.

ARCHAEOLOGICAL LANDSCAPES

Two geomorphic conditions that directly relate to the archaeology of the EIS area are noteworthy. They involve the surficial expression of lithic source material useful for prehistoric stone tool manufacturing. Weathered quartzite cobbles (48SU1334 and 48SU2928) and nodules of a gray, medium to high quality chert (Wilkins Peak Chert, 48SU337) are commonly located on the surface throughout the study area. Prehistoric occupants of the area utilized this material in stone tool manufacture, in heating rocks for food preparation and in lining their hearths. In 1992, the term "Yellow Point Archaeological Landscape" (48SU1334, Enders, 1992) was applied to the casual use and lithic reduction of secondary deposits of quartzite cobbles in the vicinity of Yellow Point Ridge. In 1998, the term "The Mesa Archaeological Landscape" (48SU2928, Lubinski, 1998) was applied to the casual use and lithic reduction of secondary deposits of quartzite cobbles in the vicinity of The Mesa. Since this artifact class represents an elemental aspect of prehistoric resource exploitation and is easily understood by prehistorians, expressions of the Yellow Point Archaeological Landscape or The Mesa Archaeological Landscape are categorically determined not to be eligible for National Register inclusion, i.e. this cultural resource is, by definition, nonsignificant.

While attempting to apply a similar strategy to recording the surficial expressions and lithic procurement of Wilkins Peak Chert, (48SU337), a somewhat more complex situation arose. Early recognized by investigators in the area (Reed, 1974, C. Love, 1976, Hakiel, 1982), procurement of Wilkins Peak Chert seems to co-occur with other prehistoric artifact classes, such as utilized flakes, campsite debris, features and formal tools (Nelson and Nelson, 1994). Utilization of Wilkins Peak Chert may not represent as elemental an aspect of prehistoric exploitation as first thought. First, the chert is found as both primary outcrops and secondary deposits, with the geologic factors of formation not fully understood. Second, the material is found amidst site types of greater complexity. Finally, insufficient inventory has occurred in areas where Wilkins Peak Chert is found as a source. The initial proposal to categorically recognize Wilkins Peak Chert lithic procurement as nonsignificant was rejected by the Wyoming State Historic Preservation Office. Nonetheless, a 1995 field examination of select areas by BLM and Wyoming SHPO clarified some aspects of the problem and the approach has been resurrected. Designating Wilkins Peak Chert lithic procurement as an Archaeological Landscape will be pursued in the near future.

GEOMORPHOLOGY

Geomorphological studies examine the relationship among soils, sediment, topography and vegetation. Geomorphology is important to archaeologists because most significant prehistoric sites are located within a soil matrix, the history of which contributes to site integrity, integrity of cultural deposit and post-depositional history. These factors are critical for understanding the nature and preservation potential of the archaeological resources in the study area.

No major soils study has been conducted within the Pinedale Anticline area. Two formal studies have occurred along the southern portion of this EIS area; the Burma Road Soil Survey (ERO Resources Corporation, 1987) and Archaeological Landscape Sensitivity Model For The Bureau of Land Management, Burma Road Soil Survey Area/Jonah Natural Gas Field (Eckerle and Taddie, 1997). The northern portion of this survey covers the southern portions of the Pinedale Anticline EIS study area. The primary bedrock outcrops within that study area belong to the Laney Shale member of the Green River Formation (ERO, p. 3). Wasatch Formation sandstones are thought to underlie most holocene sediments. While the EOS soils survey directs itself more to issues of vegetation, erosion, reclamation and land use, the soil descriptions and mapping have important and untapped cultural resource applications.

Eckerle and Taddie indicate that areas considered to be archaeologically sensitive within the Burma Road soil survey are situated in several areas, including: 1) low angle fans and eolian sand deposits on the sloping uplands heading on Blue Rim and Ross ridge and draining northwestward to the New Fork River; 2) alluvial deposits in the

middle reaches of the valleys North Alkali Draw, Granite Wash, and Alkali Creek and their major (unnamed) tributaries; and 5) broad areas of terraces characterized by the presence of the San Arcacio series soils.

Mapped eolian deposits ought to originate from nearby parent bedrock, thus contain Laney Shale member clasts. Such eolian deposits have importance for predicting and locating sensitive soils where buried archaeological sites might be located. The EOS maps, coupled with field verification, indicate that soil types 106 (Monte-Leckman complex), 113 (Hateron-Garsid complex), 123 (Spool, Ouard and San Arcacio Variants), 124 (Fraddle-Oward-San Arcacio Variants) and 125 (San Arcacio-Saguache association) in the EOS system, fit this description. Monte Leckman soils are located near alluvial fans and major drainages, such as the New Fork and present high site potential locales. The San Arcacio-Saguache soils occur on old floodplains, fans and terraces, high site probability zones for prehistoric occupation. The soils form on coarse sandy alluvium, a medium of great buried site preservation potential. These characteristics together translate into high, significant, buried site potential.

A recent trend in assaying cultural resource potential at the regional level involves use of geomorphological information from a diversity of locales within the Green River Basin. The major Oil and Gas fields (Moxa, Fontenelle, LaBarge, Wamsutter) have been the target for geomorphologists, due to their intensive surface management due to expanded energy development. Data relating to diachronic and synchronic climatic shifts have emerged from such studies. Eckerle (1996) and Miller (1996) are synthesizing this data. The influence of the Neoglacial and the Little Ice Age on prehistoric settlement patterns within the Green River Basin is an example. The Pinedale Anticline area is devoid of directed geomorphological studies, though one PhD is in preparation, based upon the work on the Mesa by Jeremy Dillon (in prep). An expanded understanding of the geomorphology within Pinedale Anticline area, as compared to other more fully understood regions, is needed.

UNEXPECTED DISCOVERIES

Unexpected Discoveries involve the unpredicted location of and impact to cultural resources within development areas, usually occurring during initial surface disturbance activity by heavy equipment. Such discoveries can become difficult to manage, as time constraints, degree of impact, legally required consultation, cost factors and a poorly-understood resource may contribute to a conflict situation. Several energy development projects in the Pinedale Anticline have encountered unexpected discoveries. While most have been resolved with facility, others such as 48SU1631 located along the access road to Meridian Oil's New Fork Federal 11-8 well location, still await evaluation and mitigation. Unexpected discoveries will become problem areas only if development is not planned with an eye towards the foresightful management of discoveries.

Occurrence of Unexpected Discoveries is heightened in newer development areas (like the anticline) where knowledge of soils and geomorphology is limited. This, coupled with a poor understanding of the nature and presence of undetected cultural material and overall buried site potential contributes to the frequency and severity of resource impact when encountering Unexpected Discoveries.

Geoarchaeological investigations and construction monitoring conducted in or near the EIS area in 1998 have identified several sensitive soil areas and geomorphic landforms containing/preserving buried sites. The toes of small but discreet upland hillocks and rises, flanked by intermittent drainages is one landform that is sensitive. Unexpected discoveries in this site setting were made on the Amoco Rainbow Federal 15-29 access road, the Amoco Antelope 15-4 project, Amoco's SHB 5-9 road project and the Anschutz Sand Draw Federal 7-11 access road. While the geographic setting of some unexpected discoveries is getting clearer, the identification of all such occurrences in a 200,000 acre study area is a difficult and formidable task, indeed. The extant soils surveys (ERO, 1987) are not fine grained enough to allow for identification of such soils based on GIS of the soils in the project area. Topographically, these sensitive soil pockets are usually only a few meters in overall relief, so they are not expressed on 7.5' topographic maps, the project area standard. Only informed pedestrian inventory by trained or experienced specialists will identify such potential discovery locales prior to project implementation.

Several options are available for planning for the unexpected. Development of Programmatic Agreements and preparation of Treatment Plans are planning documents geared towards addressing the problem. Field techniques likely to minimize discoveries include evaluative testing in "non-site" sensitive soil areas, use of remote sensing techniques such as magnetometer survey (Vlcek, 1997b), soil resistivity, or ground penetrating radar, traditional subsurface hand evaluations and construction monitoring. In the past, magnetometer inventory, monitoring of construction and open trench examinations have been the primary tools used to predict the unexpected.

Development of this EIS and a Cultural Resources Programmatic Agreement (see the draft attached to this document) allows for the identification of standard treatments, procedures and management alternatives that lessen the impact unexpected discoveries have on development projects and the resource adversely affected.

A field technique needed to be adopted EIS project area-wide entails standardized soils descriptions of potential cultural-bearing sediments. When discoveries are made, the sediments containing archaeological deposits likewise need to be described consistently. If BLM adopts standards for describing affected soils, a consistent database can be obtained, and discoveries should become A) easier to predict and B) less numerous. The result will be better management of the resource and diminished costs to the operators. Requirements such as this are detailed in the Programmatic Agreement attached to this EIS as Appendix I.

Parties to Programmatic Agreements and development of Treatment Plans include the BLM, the Wyoming State Historic Preservation Officer (SHPO) and the Advisory Council on Historic Preservation (ACHP). The various project proponents (usually an oil/gas company) can become concurring signatories to the PA. Other affected or interested parties include the Shoshone, the Utes and the Shoshone/Bannock and potentially, professional and public societies such as the Wyoming Association of Professional Archaeologists (WAPA), the Wyoming Association of Historians (WAH), the Oregon-California Trails Association (OCTA) and others. Such agreements and plans can direct the specific management of affected cultural resources, reducing consultation timeframes, expediting management decisions (and the development projects involved) and assure for the appropriate management of affected resources.

Historical Resources. The *Wyoming Comprehensive Historic Preservation Plan* (Massey 1989) defines historic periods and historic themes in order to record and evaluate historic sites. It is likely that the following periods and themes would be represented in the project area in Sublette County, Wyoming:

- Pre-Territorial (1842-1868);
- Territorial (1868-1890);
- Expansion (1890-1920);
- Depression (1920-1939); and
- Modern (1939-present).

Historic themes include agriculture (farming/ranching), architecture, commerce, education, social, and transportation. Westward migration began in large numbers in the 1840's, and several variations and cutoffs of the Oregon Trail evolved. One of the later emigrant trails to be laid out was the Lander Cutoff, which crosses the southern portion of the project area. Frederick West Lander, chief engineer, surveyed the trail in 1857 and completed the road in late 1858. The Lander Cutoff, officially known as the Fort Kearney, South Pass and Honey Lake Wagon Road, was the first federally funded road construction project west of the Mississippi River. Lander's map, prepared in 1857, is one of the best sources for mid-nineteenth century topographic cultural feature information for SW Wyoming. Lander's trail was a good one, evidenced by its continued use for wagon traffic after the completion of the transcontinental railroad in 1869. Used by motorized vehicles well into the twentieth century, the Lander Trail proved to be an important link between residents of the Piney Country and those of Star Valley.

In 1978 Congress authorized the Oregon and Mormon Pioneer National Historic Trails to promote their preservation, interpretation, public use, and appreciation. The Lander Trail was included in the congressional authorization. In compliance with the National Trails System Act, the NPS, Long Distance Trails Office (NPS/LDTO) has published a draft comprehensive management and use plan for these trails (NPS, 1998). The goal of that plan is the same as the purpose of the National Trails System Act, which is to *"provide for the outdoor recreation needs of an expanding population and to promote the preservation of, public access to, travel within, and enjoyment and appreciation of the open-air, outdoor areas and historic resources of the nation"*.

The setting of the trail through the majority of the PAPA is undisturbed and represents the condition of the natural landscape pioneers using the trail would have experienced. The NPS/LDTO, as required by Section 5(f) of the National Trail System Act, has prepared a draft management and use plan EIS for the Oregon National Historic Trail. The NPS/LDTO, in the draft trail management plan, concluded that the trail through the PAPA did not meet the plan's criteria for a "high potential segment". BLM, who is responsible for managing the

trail on Federal lands, does not agree with NPS/LDTO's conclusion regarding the management plan's ranking of the trail through the PAPA.

The viewshed (up to a distance of 3 miles on each side of the trail) of the Lander Trail is defined as a SRMZ. It has been determined that intrusions that are visible within approximately 3 miles either side of the centerline of the trail could adversely affect the setting of the trail. This SRMZ is relatively large, occupying approximately 22,813 acres or 12 percent of the PAPA.

Because Sublette County was far from the nearest railhead, several north-south wagon roads were established to link the upper Green with towns along the Union Pacific main line at Rock Springs and Green River City. In 1878, the Opal Wagon Road linked residents west of the Green River with the Oregon Short Line at Opal, Wyoming. The Opal Wagon Road was the only route available to residents of the upper Green until 1890-91, when John Vible and Louis Broderson settled on New Fork and opened the Vible Store (Vlcek, 1999). The Vible-Broderson partnership flourished and the Vible Store became a critical supply center for residents of the upper Green west of the Green River. By 1892, a wagon road was established between the New Fork Townsite and the railhead at Rock Springs. Called the New Fork Wagon Road (48SU1408 National Register eligible), this wagon road soon eclipsed the Opal Wagon Road in importance for eastern Green River valley residents. Several historic period sites relating to the Vible-Broderson settlement and the wagon road are located in the project area such as the historic townsite of New Fork, listed on the National Register, wagon stops like Sand Springs (also an emigrant camp on the Lander Trail), the Mud Holes, and Ten Trees, an expansion-era wagon crossroads.

By the turn of the century, the town of Pinedale became established and growth proceeded slowly but surely in the upper Green. Locally significant historic families who came to the area early include the Steeles, the Falers, the Jensens, the Sommers's, the Bousmans, the Murdocks, the Barlows, the Chambers, the Lumans, the Olsens, the Wardells, the Swains and many others.

Settlement in the project area spread from south to north along the major drainages, the Green River and New Fork River. Pioneer cattlemen established ranches close to major water sources and practiced open range grazing, wintering their herds on the Little Colorado and Red Deserts and summering them on higher pastures. Many of the Green River cattle ranchers were forced by the winter blizzards of 1888-1889 to begin to feed their cattle during the winter, rather than turning out their stock on the open range in the winter. Haying became an essential part of a typical Sublette County livestock operation, and continues to this day. Early ranchers had to clear sagebrush and establish water rights in order to irrigate hay meadows. The agriculture theme includes several site types likely to be found in the project area: operating and/or abandoned ranch complexes, homesteads, isolated structures (windmills, corrals, cattle shelters, or sheepshearing sheds), isolated refuse dumps, ranch or homestead-related refuse dumps, stock surveillance camps, and irrigation ditches. Stock surveillance camps (cattle and sheep) may be found in the northern Little Colorado Desert between the Green and New Fork rivers and southeast of the New Fork. Most of the irrigation ditches (operating and abandoned) within the project area divert water from the New Fork River and its tributaries; a smaller number divert water from the Green River in the northwest portion of the project area.

Many of the pioneer ranches are located along the Green River and the lower New Fork River just west and southwest of the project area. The Albert Sommers Ranch (1903) on the Green River is located just outside the project area boundary. Remnants of the James Bertram Homestead (1906) are located on the lower New Fork River at the Lander Cutoff within the southwest portion of the project area.

The only pioneer settlement located within the project area is New Fork Townsite, listed on the National Register of Historic Places, near the northeast boundary. In 1888, John Vible and Louis Broderson, Danish emigrants, settled near the confluence of the New Fork and East Fork rivers about 5 miles north of the Lander Cutoff to establish a cattle ranch and mercantile business. They supplied their business by means of wagon trips to Rock Springs. Shoshone and Bannock Indians regularly traded there as they traveled to and from their respective reservations. A post office was established at New Fork in 1891; a polling place and school district soon followed. The community soon had the Vible stores, residences, a school, saloon, hotel, barber shop, livery and blacksmith shop, and in 1909, the large dance hall (Valhalla) was constructed. New Fork was gradually eclipsed by other communities, such as Pinedale, which became the county seat when Sublette County was established in 1921. Transportation patterns changed, the Lander Cutoff fell into disuse, and in 1915 a diphtheria

epidemic devastated the small settlement. The Vible store and Valhalla still stand at New Fork (Brodrson, 1976; Rosonberg, 1986; Vleck, 1999).

GREEN AND NEW FORK RIVER RANCHES RURAL HISTORIC/CULTURAL LANDSCAPE

The ranches and ranch land associated with the Green and New Fork Rivers in the project area qualify as a Rural Historic or Rural Cultural Landscape. The Landscape encompasses the base ranches, select contributing buildings, irrigated valley bottoms, adjacent dry pasturage and other contributing historic features such as historic bridges and beaver slide hay stackers. Historic cattle bridges are still in use and turn-of-the-century hay stackers and other ranching equipment still lie in the hay fields. Striking, unspoiled topographic features include the sandstone ridges, buttes and foothills that define the landscape's natural backdrop. The landscape centers around broad, linear riparian areas of the Green and New Fork Rivers and can qualify for National Register of Historic Places inclusion as a Rural Historic Landscape. The rural hinterland retains a high degree of historical significance and the landscapes possess great historical integrity.

The Rural Historic Landscape has at its essence, the major rivers and adjacent flood plain and terrace. Here lie several late nineteenth/early twentieth century ranches and adjacent irrigated hay meadows. The landscape includes the sometimes extensive system of irrigation canals, ditches, head gates and laterals that transforms an otherwise dry desert into a lush green belt. It was the system summertime dryland pasturage and fall haying for winter feeding that made cattle ranching possible in this high desert of brutal winters. The landscape has naturally-defined geographic boundaries-the sandstone cliffs, ridges and buttes of The Mesa, which provides a pristine backdrop to the valley perimeter. Within the rural historic landscape cattle ranching is practiced today in much the same way as in historic times, reflecting long-entrenched traditional life ways. The seasonal round begins with calving, old-style hot iron branding, and implementation of "The Drift", a biannual migration of up to 8,000 head of cattle "drifted" or driven up to 100 miles from the dry desert to the south up to lush summer pasture near Union Pass, at an elevation of 10,000 ft. The Drift survives as Wyoming's largest cattle drive and preserves a stock management system over a century old.

Cattle ranching is Wyoming's transcendent historic theme, of unquestioned significance. The extant rural historic landscape of the project area's river ranches remains little changed from historic times and contains several character-defining features such as the Sommers Ranch and Bridge, the Swain/Wardell Ranch and the Abner Luman Ranch within the Green River valley. The New Fork Townsite (listed on the National Register) is an exceptional example of a character-defining place combining nineteenth century ranching and commerce within the New Fork River valley. The Mocroft Ranch incorporates striking natural features such as Ruby Butte and the adjacent Mesa cliff face in its character-defining boundary. The New Fork Cattle Bridge, an essential element of The Drift is an excellent structural example of a character-defining feature. The Green and New Fork River Rural Historic Landscape is blessed with an abundance of historic places retaining a high degree of physical locational integrity, integrity of setting, feel and association, indeed, historical significance.

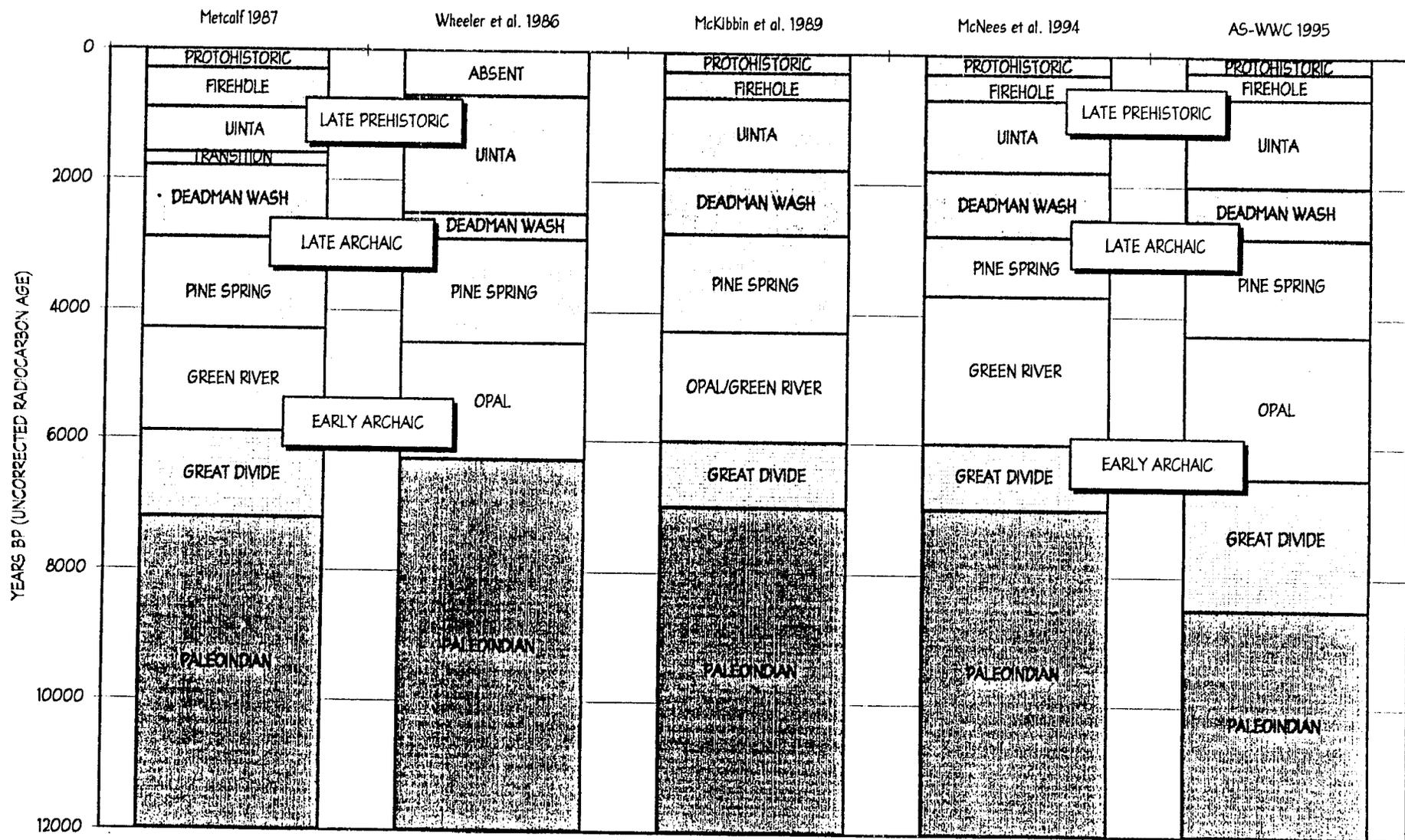


Figure 1 Revision of the Wyoming Basin Cultural Chronology

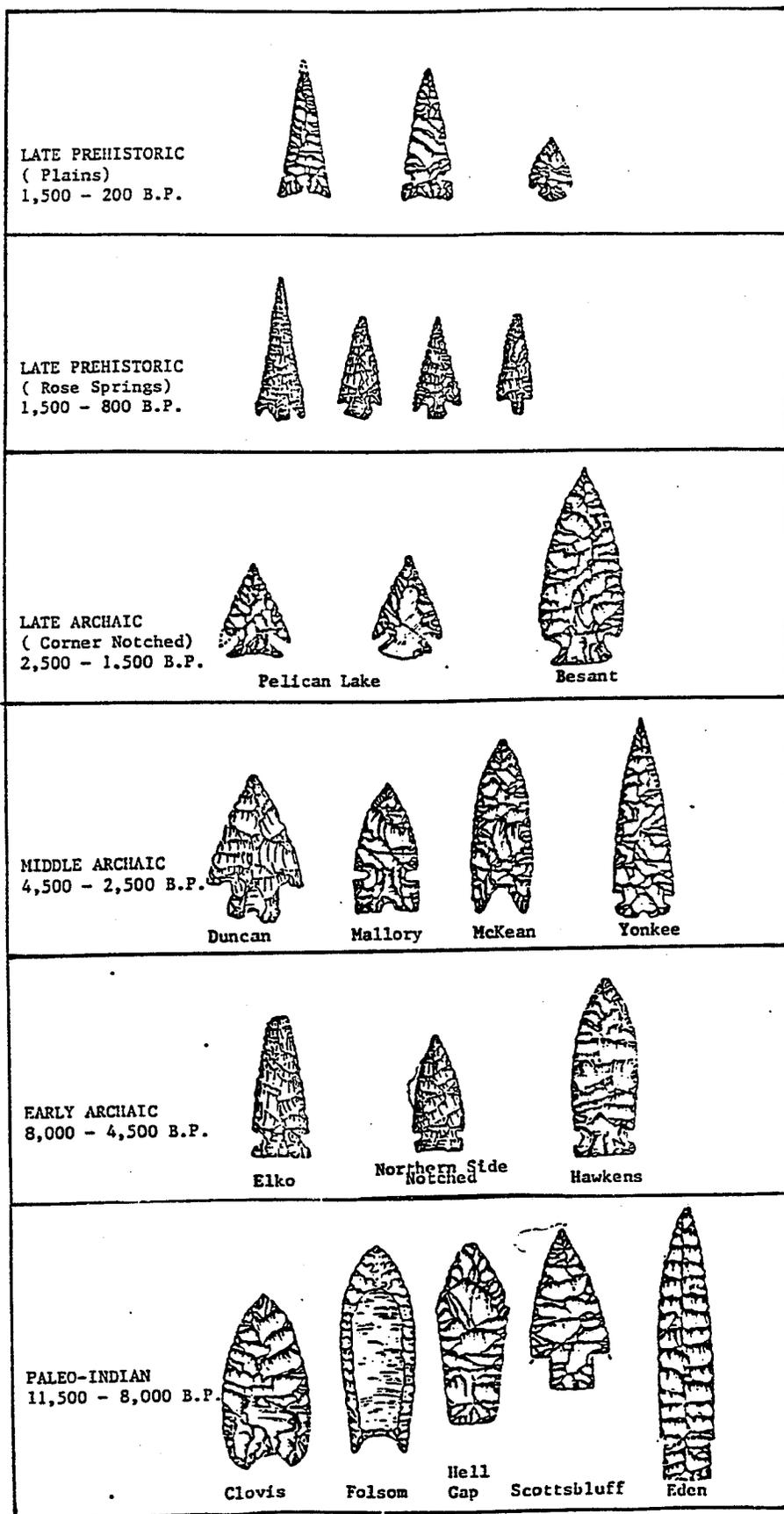
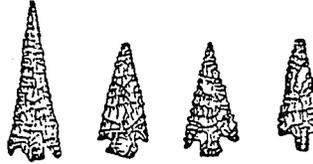


Figure 2 Diagnostic Projectile Points and Major Time Periods

LATE PREHISTORIC
(Plains)
1,500 - 200 B.P.



LATE PREHISTORIC
(Rose Springs)
1,500 - 800 B.P.



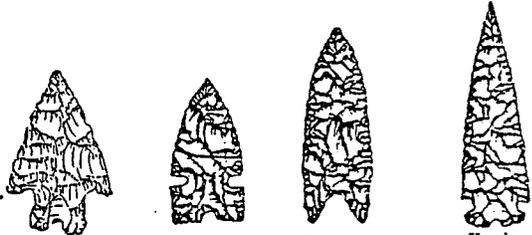
LATE ARCHAIC
(Corner Notched)
2,500 - 1,500 B.P.



Pelican Lake

Besant

MIDDLE ARCHAIC
4,500 - 2,500 B.P.



Duncan

Mallory

McKean

Yonkee

EARLY ARCHAIC
8,000 - 4,500 B.P.

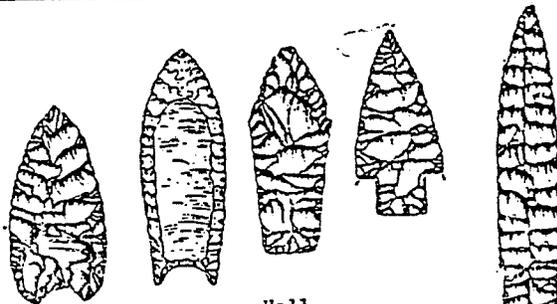


Elko

Northern Side
Notched

Hawkins

PALEO-INDIAN
11,500 - 8,000 B.P.



Clovis

Folsom

Hell
Gap

Scottsbluff

Eden