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Systemwide Archeological Inventory Program: Rocky Mountain Cluster Plan



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with contributions by
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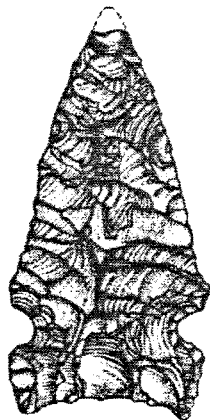
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Front Cover: Rare wickiup structure or conical timbered lodge, 1955 (24YE301), Yellowstone National Park.

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❧ Introduction ❧

Rocky Mountain archeology contains tremendous diversity. Our cluster includes archeological resources, ranging from 12,000-year-old camps inhabited by the earliest peoples in the New World, and the most important obsidian source in North America, bison kill sites, and major plant-processing areas, to several sites that mark the historic and bloody conflicts that have raged between cultures within the last 125 years. The Obsidian Cliff prehistoric obsidian quarry (48YE433) in Yellowstone National Park is a National Historic Landmark (Fig. 1). Native peoples continue to maintain ties with parks. In some cases, such as at Glacier and Bighorn Canyon National Recreation Area, where the parks share borders with the Blackfoot and Crow reservations respectively, relationships are very close.

The Rocky Mountain Cluster is also rich in historic archeology, relating to both Euro-Americans and Native Americans. Historic archeological investigations at Fort Laramie National Historic Site and Bent's Old Fort National Historic Site have led to a greater understanding of these nationally significant sites. In addition, several parks encompass historic and prehistoric trails and



Figure 1. Trench feature at the Obsidian Cliff National Historic Landmark (48YE433), Yellowstone National Park.

archeological sites related to Euro-American settlement, as well as rare examples of wickiups (wooden tipis) and log shelters built by Indian peoples.

The Rocky Mountain Cluster contains above-ground aboriginal structures, including several types of log shelters and vision quest sites made from stone, but the most frequent evidence of earlier peoples is what is known as "lithic scatter" on the surface of the ground. Lithic scatters are typically characterized by the waste from the

manufacture and repair of stone tools. However, since this activity frequently took place at camps, there may also be the remains of hearths, charcoal from fires, pits for cooking roots, grinding stones, the bones of animals used for food, and stone tools, both lost and discarded. Shelter at these camps was most often the skin tipi.

One way of interpreting these is as special or general purpose sites. "Special purpose sites" are smaller and focused on one or a few activities, such as a kill site (a location where a deer or bison was slaughtered for food, religious purposes, and where the initial butchering occurred) or a quarry (the source of stone for tools). "General purpose" sites are usually larger with evidence of a wide variety of activities such as hide processing, cooking, and tool repair. Men, women, and children lived at general purpose sites, while single-sex work groups traveled, perhaps on a daily or overnight basis, to special purpose locations.

Compared to the two other clusters in the Intermountain Field Area, the archeology of the Rocky Mountain Cluster is less visible to the untrained eye, but it represents the successful adaptation of Native Americans to the region's harsh living conditions. These early people made their living by hunting animals and gathering roots, bulbs, berries, and seeds. Thus, their economy has been characterized as "hunting and gathering," but no trace of simplicity is intended. Only well-adapted cultures could make a living in such a seasonally difficult environment.

Archeology has interdisciplinary applications. In addition to providing information about the region's early inhabitants, archeological investigations are useful tools for learning more about the natural resources within the Rocky Mountain Cluster. Plants and animal remains are often preserved in archeological sites. Because these sites can be dated through archeological means, archeology can help provide answers to questions about past plants, animals, and environmental conditions.

The National Park Service (NPS) is responsible for conserving, protecting, preserving, and managing the cultural resources in its care for long-term scientific research, public interpretation, and education. The laws ensuring that the federal agencies fulfill their obligations to inventory and evaluate cultural resources include section 110(a)(2) of the National Historic Preservation Act (NHPA), as amended, section 2(a) of Executive Order 11593, and section 14 of the Archeological Resources Preservation Act (ARPA).

The Systemwide Archeological Inventory Program

A 1991 Management Control Review of the National Park Service archeology program identified a critical high-risk material weakness in basic inventory accountability of cultural resources on National Park Service lands. The National Archeological Survey Initiative (NASI) was established to improve archeological inventory and accountability for the archeological resources in our national parks. The NASI Task Force (Aubry et al. 1992) developed the Systemwide Archeological Inventory Program (SAIP) to establish guidelines for an inventory program that will last for the next 20 to 30 years. The SAIP report describes the systemwide program and outlines the requirements for the earlier regionwide and now clusterwide survey plans. The national plan is the foundation for this clusterwide document:

The goal of the program is to conduct systematic scientific research to locate, evaluate, and document archeological resources on National Park System lands; to nominate eligible properties for listing in the National Register of Historic Places; and to recommend appropriate strategies for conservation, protection, preservation in situ (senior author's emphasis), management, and interpretation. The program is intended to augment, rather than replace, the Service's existing archeological policies, guidelines, and standards (Aubry et al. 1992:iii).

The Rocky Mountain Cluster SAIP Plan

The Rocky Mountain Cluster of the National Park Service has 15 park units (Fig. 2) comprising 4,027,497.3 acres. These include various types of NPS units from national monuments to national recreation areas (see Description of Park Lands). Four of these areas specifically include archeological values in their enactment legislation and all 15 are known to have significant archeological resources. Yellowstone National Park is recognized as a World Heritage Park for both natural and

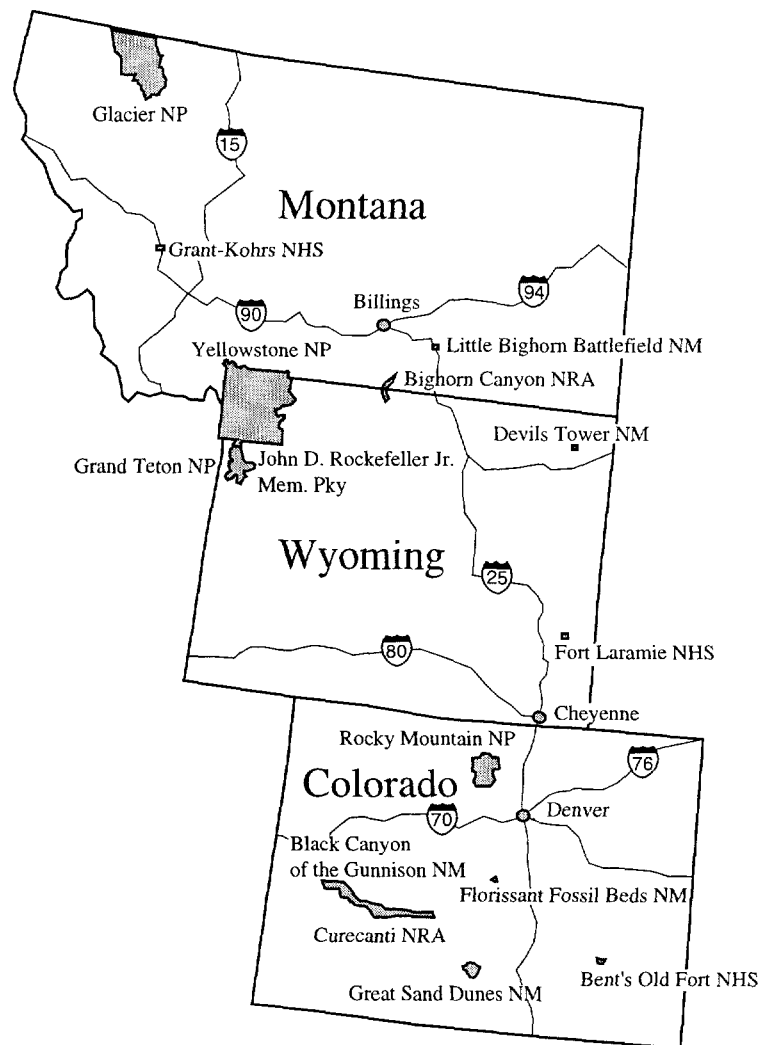


Figure 2. Map of the National Park Service's Rocky Mountain Cluster showing park units.

cultural resources. One park (Rocky Mountain) has a permanent archeologist, while a Rocky Mountain Support Office archeologist is duty-stationed in Yellowstone.

Archeologically, the cluster has great cultural diversity. Less than 1 percent of the cluster's lands have been surveyed to modern standards. A large number of sites have been reported, although less than half of them recorded to modern standards. With more than 2,382 documented archeological sites, the Rocky Mountain Cluster (RMC) has 4 percent of the 60,000 sites reported systemwide as of October 1996, despite having a very low percentage of acres inventoried.

The survey plan for the RMC is a strategic research design that helps provide emphases and direction for

future management. Cluster and/or park projects' specific research designs should be developed around this document to make this plan an effective management tool as an approach to understanding the cluster's archeology, needs, and procedures.

This RMC inventory plan is a document that incorporates information from park Resource Management Plans (RMP) and other sources of park input. It follows the outline and criteria set forth in the Systemwide Archeological Inventory Program document (Aubry et al. 1992). Much of the data are presented in tables; the data may be repeated when necessary to make each table useful as an independent unit.

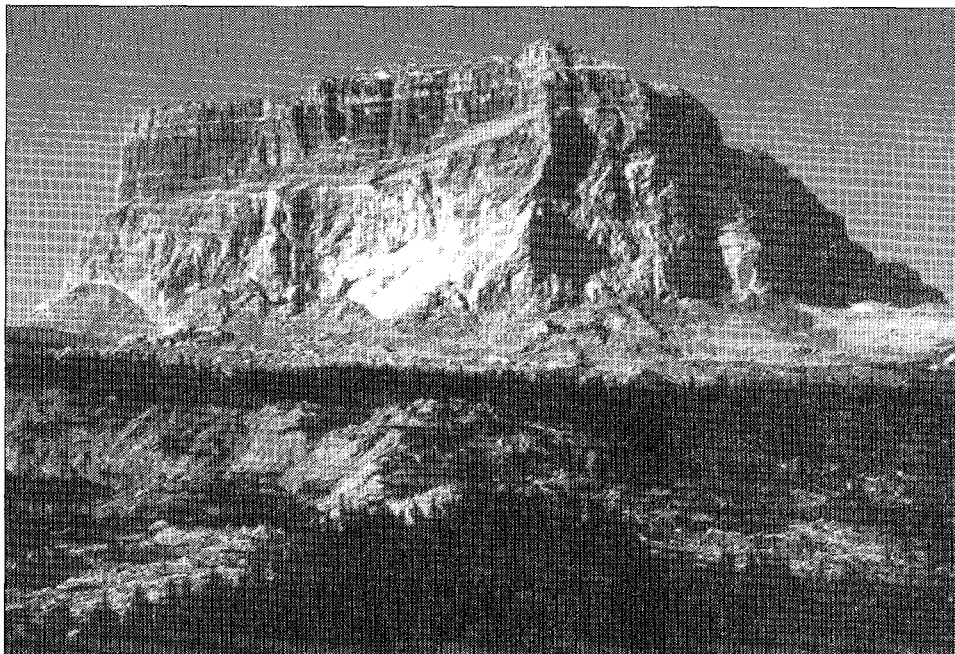


Figure 3. (a) Chief Mountain has prehistoric, historic, and modern sites related to its significance as a Traditional Cultural Property, Glacier National Park. (b) Chief Mountain west summit. View of modern vision quest (24GL264). (Tape measure in photo.)

Relevant Policies and Federal Legislation

Several laws and regulations, including those covering National Historic Landmarks (NHL) and the Federal Archeology Programs, are instrumental in the development of the Systemwide Archeological Inventory Program for the Rocky Mountain Cluster. In turn, the Systemwide Archeological Inventory Program for the cluster will help the National Park Service fulfill its responsibilities with segments of these Federal laws and regulations.

National Environmental Policy Act (1969)

The National Park Service has determined that the development of the Systemwide Archeological Inventory Program and its component regionwide plans qualify as a categorical exclusion from the procedural requirements of the National Environmental Policy Act (NEPA). Neither an environmental assessment or environmental impact statement have been prepared for the development of the systemwide program. Archeological surveys including small scale test excavations also are categorically excluded from the requirements of National Environmental Policy Act. It should be noted that some archeological work may not qualify as categorically excluded and, therefore, may require NEPA review and compliance.



National Historic Preservation Act (1966)

Development of the Systemwide Archaeological Inventory Program and its component clusterwide plans are not Federal undertakings requiring compliance with section 106 of the National Historic Preservation Act (NHPA), as amended (1980). In fact, the development of the program will enable the National Park Service to fulfill its responsibilities under the act. Consultation with the State Historic Preservation Office for each state in the Rocky Mountain Cluster is required under both National Historic Preservation Act and Executive Order 11593. The draft of the Rocky Mountain Region Cluster Plan was sent to the appropriate State Historic Preservation Officers for review and comments.

Antiquities Act (1906)

The development of the Rocky Mountain Cluster Systemwide Archeological Inventory Program will aid in complying with section 5(c) of the Antiquities Act (1906) and the submittal of annual SAIP reports indicating the scope and effectiveness of the programs initiated in the Rocky Mountain Cluster.

Historic Sites Act (1935)

The RMC's Systemwide Archeological Inventory Program will fulfill responsibilities under the Historic Sites Act (1935) section 2(c). It will make those necessary investigations and researches relating to particular sites, buildings, or objects to obtain true and accurate historical and archeological facts and information. The Systemwide Archeological Inventory Program addresses issues of cooperative agreements, use of historic properties, and operation and management of historic properties discussed under sections 2 (e),(f), and (h) of the Historic Sites Act.

American Indian Religious Freedom Act (1978)

The American Indian Religious Freedom Act (AIRFA) is a joint resolution by the 95th Congress that recognizes the constitutionally guaranteed right of all United States citizens, including American Indians, to practice their religions. The RMC's Systemwide Archeological Inventory Program enables the cluster and its park units to recognize, inventory, and evaluate traditional religious uses and practices related to sites or resources on park lands. NPS management policy under AIRFA prioritizes:

1. Physical protection and appropriate private uses of these sites.
2. Allowing reasonable and prudent access to sites and provisions for the collecting, taking, or receiving of natural resources used in the exercise of Native American religious practices.
3. Identification and protection of those sites and resources within parks that are associated with American Indian cultural and religious heritage (Fig. 3).
4. Development of adequate baseline data necessary to formulate general and management decision.

Archeological Resources Protection Act (1979)

The RMC's Systemwide Archeological Inventory

Program fulfills Archeological Resources Protection Act (ARPA) guidelines that govern the disposition of archeological resources removed from public and Indian lands. In addition, the Archeological Resources Protection Act requires each federal land manager to establish a program to increase public awareness of the significance of the archeological resources located on public and Indian lands, and the need to protect such resources. Each land manager is to submit an annual report to the Committee on the Interior and Insular Affairs of the US House of Representatives regarding the actions taken under such programs. Under 16 U.S.C. 470, the Rocky Mountain Cluster's Systemwide Archeological Inventory Program fulfills its obligation to develop plans for surveying lands within the control of the Rocky Mountain Cluster. It determines the nature and extent of archeological resources on those lands and it prepares a schedule for inventorying lands that are likely to contain the most scientifically valuable archeological resources.

Native American Graves Protection and Repatriation Act (1990)

The Native American Graves Protection and Repatriation Act (NAGPRA) sets requirements for Federal agencies and museums to conduct the following activities:

1. Document certain Native American cultural items in their collections. Cultural items include human remains, associated funerary objects, unassociated funerary objects, sacred objects, and objects of cultural patrimony.
2. Notify all Indian Tribes that are, or are likely to be, culturally affiliated with these objects or are recognized as aboriginally occupying the area in which the objects were discovered.
3. Provide an opportunity for the repatriation of culturally identifiable human remains and/or cultural objects.

Federal agencies are responsible for ensuring that archeological collections from their lands are properly stored and cared for, whether the collections are held by a federal agency or by a nonfederal institution.

The National Park Service anticipates increased contact with American Indian communities due to the enactment of NAGPRA. The Systemwide Archeological Inventory Program of the Rocky Mountain Cluster is designed to direct the RMC parks in contemporary archeological analyses that will be helpful in determining biological and cultural continuity to the archeological

record, including cultural affiliation of human remains and associated artifacts. In addition, the RMC plan adds to the consultation process and directs the RMC park units to consult with specific tribes. Both tribal secular and religious leaders are to be consulted to determine the ultimate disposition of American Indian human remains, funerary objects, sacred objects, and objects of cultural patrimony with which they can demonstrate biological or cultural affiliation.

The RMC's Systemwide Archeological Inventory Program also takes special care to be responsive to the concerns of Native Americans under the American Indian Religious Freedom Act of (1978) as discussed earlier. The plan should be equally responsive to American Indian tribal members who have been delegated responsibility for specific matters by tribal governments. The RMC has developed an American Indian Consultation Guidelines and Directory (Ruppert 1994) to simplify and aid in the consultation process.

National Park Service Management Policies (1988)

Since the National Park Service's inception in 1916, the philosophy and policy of the National Park Service has been to conserve the parks' cultural and natural resources for the benefit and enjoyment of future generations. Through the decades, many factors have contributed to the parks' popularity and increasing visitor populations. Several parks measure their visitors in the millions per annum. Obviously, park infrastructures in their original forms were grossly inadequate to meet growing and contemporary needs. With the constantly growing demand to better serve public needs, development of park services are mandated, often by legislation, and by Department of Transportation, Public Health and Safety regulations and so on. These requirements have to be balanced with the equally mandated contemporary philosophy and policy of "protection and preservation." The National Park Service *Management Policies* are designed to bring consistency and continuity to planning and development throughout the National Park Service System.

NPS-28 (Release No. 4, 1994)

The purpose of NPS-28 is to elaborate on the basic principles governing the management of cultural resources in the National Park System, consistent with law and the Secretary of Interior's Standards. NPS-28 addresses Section 106 of the National Historic Preservation Act, research, planning, stewardship, management of archeological and ethnographic resources, cultural landscapes, and historic and prehistoric structures.

Document Organization

This document is organized into five parts:

- PART I. DESCRIPTION OF PARK LANDS is a summary of basic information regarding the 15 park units in the region (Table 1:1).
- PART II. REGIONAL OVERVIEW summarizes the prehistory, history, and environment of the four basic physiographic units in the region and examines the cultural associations for each of the park units.
- PART III. ARCHEOLOGICAL DATABASE FOR THE CLUSTER summarizes the archeological survey and site records for each park and lists the proposed inventory and evaluation projects for each park (Table 3:1).
- PART IV. CLUSTERWIDE STRATEGIES discusses overall guidelines for archeological inventory and evaluation projects and related projects proposed for the cluster's park units.
- PART V. PROPOSED PROJECTS AND CLUSTER PRIORITIES (Tables 5:4 and 5:5) to help establish priorities for the cluster.
- PART VI. SUMMARY OF ARCHEOLOGICAL RESOURCES AND NEEDS IN THE PARKS.
- PART VII. THE FIVE-YEAR PLAN: A PRIORITIZED LIST OF ROCKY MOUNTAIN CLUSTER ARCHEOLOGY PROJECTS.

The RMC's Systemwide Archeological Inventory program is designed to be a multidimensional document and should be reviewed and updated at five-year intervals. Project statements in park Resource Management Plans and other sources are not appended to this document but are available at park units, the Midwest Archeological Center, and the RMC Support Office (Denver).

Part I:

Description of Park Lands

Number of Park Areas

There are 15 National Park Service areas in the Rocky Mountain Cluster. They are located throughout Colorado, Wyoming, Idaho, and Montana.

Park Sizes

The Rocky Mountain Cluster park units cover more than 4 million acres and range in size from 765 acres to more than two million acres (see Table I:1).

Park Type and Archeological Values Identified in the Enabling Legislation

The type of National Park Service units in the Rocky Mountain Region are grouped as follows:

- 4 National Parks
- 5 National Monuments
- 3 National Historic Sites
- 2 National Recreation Areas
- 1 Memorial Parkway

The enabling legislation for each park was examined for references of significant archeological values. Also, the legislation for boundary changes was examined when available.

Wilderness

All of the park units in the Rocky Mountain Cluster are considered to be in rural settings. Archeological surveying requires walking over an area. Problems that complicate surveys include steep slopes, remoteness, dense vegetation, and sensitive faunal and floral resources. Therefore, access to the survey area can be a logistical problem. Often special transportation is required: raft, boat, helicopter, 4-wheel drive vehicle, and horse. Wilderness or proposed wilderness designations of large parcels of land may restrict access to foot travel.

Conditions of accessibility vary considerably from park to park (see Table I:2). Seven units have considerable access problems. Access through private lands may be negotiated for several park units.

Table I:1. Park unit acreage (see Appendix B for acronym interpretation).

Acreage	Number	Park Units
765–833	3	BEOL, LIBI, FOLA
1,346–5,998	3	DETO, FLFO, GRKO
20,755–41,972	4	BLCA, CURE, GRSA, JODR
120,296–309,994	3	BICA, GRTE, ROMO
1,013,572–2,219,791	2	GLAC, YELL

Table I:2. Ease of accessibility of park units.

Ease of Access	Number	Park Units
Limited Accessibility Problems	8	BEOL, CURE, DETO, FLFO, FOLA, GRKO, GRSA, LIBI
Wilderness Designation or Proposed Wilderness	4	GLAC, GRTE, ROMO, YELL
Remote, Special Transport Required for Some Areas	7	BICA, BLCA, GLAC, GRTE, JODR, ROMO, YELL
Access Through Private Land	1	BICA, ROMO

Land Ownership within the Parks

Land ownership of lands within park unit legislated boundaries varies widely in the Rocky Mountain Cluster (see Table I:3). Fewer than one-third of the park areas are entirely National Park Service owned. Lands may be owned by National Park Service with the original owners reserving the right of use for a number of years or for their lifetime. Other federal landholders within designated park units and within the Department of Interior include the Bureau of Land Management and Bureau of Reclamation. State, city, and county governments and local utilities hold titles to some lands within NPS boundaries. Private lands and patented mining claims exist within some designated NPS units.

Neighboring Government Landholdings

The list of federal landholders includes the Department of Agriculture (U.S.D.A. Forest Service), the Department of Interior (United States Fish and Wildlife Service, Bureau of Land Management, Bureau of Reclamation), and the Department of Defense. Yellowstone and Grand Teton national parks have common boundaries, and the John D. Rockefeller Memorial Parkway resides in the interior of the Grand Teton National Park. Yellowstone National Park is predominately in Wyoming with small portions in Montana and Idaho, while Bighorn Canyon is in Montana and Wyoming.

American Indian reservations are found in the vicinity of a number of park units. The Crow Reservation abuts Bighorn Canyon, and Glacier shares a common boundary with the Blackfeet Reservation. Other reservations are near park units. County and city governments also manage lands near park units. Many of the NPS park units are bounded by privately owned lands or have privately owned inholdings.

Nature of Physical Environment

The physical environment of the park units in the Rocky Mountain Cluster is highly variable (see Table I:4). Park units range from the high plains to mountain tops (Fig. 3), as well as intermountain basins and plains on either side of the Continental Divide. Many of the park units were established to protect unique environmental and ecological zones and geological features.

Physical features such as slope, ground cover, and vegetation density have direct implications for archaeological investigations and interpretation. Steep terrain in canyons, river valleys, and mountainous areas makes access to these areas dangerous and survey challenging. Dense ground cover in plains grasslands and conifer and tropical forests compromise ground visibility and the success of discovering inventory. Springtime runoff can create hazardous conditions when attempting to access survey areas. Summer snows as well as extreme summertime heat cannot be overlooked. In addition, high-altitude mountainous areas may have extremely cold

Table I:3. Land ownership in park units.

Land Ownership Category	Number	Park Units
All NPS Land/Property	6	CURE, DETO, FLFO, JODR, LIBI, YELL
More Than 90% NPS	5	BLCA, FOLA, GLAC, GRSA, ROMO
Some NPS, Some Other	4	BEOL, BICA, GRTE, GRKO

Table I:4. Physiographic units in which park units reside.

Physiographic Areas	Number	Park Units ¹
Northern Rocky Mountains	3	GLAC, GRKO, YELL
Middle Rocky Mountains	3	BICA, GRTE, JODR, YELL
Southern Rocky Mountains	5	BLCA, CURE, FLFO, GRSA, ROMO
Western Plains	4	BEOL, DETO, FOLA, LIBI

¹ YELL falls into two physiographic units.

conditions and snow covering the ground and may present poor conditions for archeological survey (Hunt 1967). It is important to note that modification of park lands can alter ground surfaces making surface survey difficult, if not impossible, without remote sensing and/or testing.

The park units are within a number of natural regions or provinces that may cross state lines. In addition, many park units are on the border of two natural regions. The natural regions described below are taken from two references (Hunt 1967; Thornbury 1965). These natural regions are very broad categories but it is possible to generally characterize each and to give a brief description of the archeological survey conditions found in each province.

Rocky Mountains

The Rocky Mountains are the backbone of North America and form the Continental Divide that separates the Atlantic and Pacific drainages. The Northern, Middle, and Southern Rocky Mountain geological provinces and the Wyoming Basin lie in the center of the Rocky Mountain Region. The Northern Rocky Mountain province is situated along the Idaho and Montana border. The Middle Rocky Mountain province is predominately in the northwestern portion of Wyoming and extends along a narrow corridor through northwestern Utah. The Southern Rocky Mountain province is in southeastern Wyoming, central Colorado and north-central New Mexico. These Rocky Mountain provinces are adjacent to the Great Plains province to the east and the Basin and Range province and the Colorado Plateau to the west and south.

The Rocky Mountains are made of igneous, metamorphic, and sedimentary origins in diverse kinds of volcanic and structural uplifts and basins. The Rockies contain, for the most part, shallow sediments and soils with extensive areas of bare rock. Rain and snowmelt from the mountains is the principal source of water for a quarter of the United States, including the semiarid Great Plains to the east and the deserts to the west. Vegetation is dominated by conifer forests.

Wyoming Basin

The Wyoming Basin is situated between the Middle and Southern Rocky Mountain provinces and is in Wyoming and northern Colorado. The Wyoming Basin contains several intermountain basins and the Great Divide Basin which has internal drainage. The Wyoming Basin borders the Middle Rocky Mountains and people living there also utilized at times Grand Teton National Park.

Great Plains

The Great Plains province slopes eastward from about 5,500 feet, at the foot of the Rocky Mountains, to about 2,000 feet above mean sea level at the eastern boundary. This province covers eastern Montana, North and South Dakota, and western portions of Nebraska, Kansas, and Oklahoma. Drainages on the plains generally run parallel, and the streams flow eastward from the Rocky Mountains to the Missouri and Mississippi rivers. Trees are largely confined to the valleys, and warm-season grasses grow in the uplands.



Part II:

Regional Overview

Scientific investigation is the conscious and designed attempt to obtain an 'objective' evaluation of the utility and accuracy of proposed ideas and propositions (Binford 1983:47).

Introduction

One purpose of this inventory plan is to quantify the cluster's archeological weaknesses, strengths, data gaps, and research needs. Additionally, the survey plan outlines a strategy to address information gaps and deficiencies. This regional overview describes the ethnographic studies, prehistory, and history of archeological research for each park unit. It is more detailed and specific than most other sections. However, there is no attempt to write a definitive or exhaustive summary for each of the cultural regions represented within the Rocky Mountain Region. Field Strategies (Part IV) and Description of Inventory Projects (Part V) are built on data presented in the Regional Overview and the Archeological Data Base (Part III).

The Rocky Mountain Cluster's park units are in Colorado, Wyoming, Montana, and Idaho. The diversity of culture groups represented in the prehistory and history of these park units is discussed by geographical and cultural areas. These areas differ slightly from the natural regions used to describe the region's physical environment. The discussion of each area will be very general in nature and include:

1. The prehistory and history of the area.
2. Physiography, ecology, and topography or landscapes associated with past human occupants and use.
3. Nature of archeological resources (prehistoric,

historic, ethnographic) associated with each type of physiographic province, ecological zone, topographic feature, or landscape identified.

4. A summary of the nature and adequacy of prior archeological research in the region in terms of quality, quantity, and geographic coverage.
5. Identification of gaps and weaknesses in the scientific knowledge about the region's prehistory and history, and identification of research problems, questions, or topics (especially those of regional and national importance) in need of further archeological study.

Time

Broad temporal divisions are not necessarily viewed as appropriate units of time when examining all research questions; they are heuristic devices that are legitimate for an overview of this scale and scope. However, the temporal placement of archeological materials and sites does assume an important function. One outcome of this interest in chronology is the construction of regional cultural sequences. These chronologies are based upon changes in archeological assemblages as observed over time and are thought to represent cultural adaptations. In order to encourage the examination of long-term cultural processes, the Systemwide Archeological Inventory Program of the Rocky Mountain Cluster will follow a parallel structure for the discussion of each time period.

Quaternary

The Quaternary Period dates to 60,000 to 9,000 B.C. and is of great interest to archeologists studying Early Man and Paleoindians. As more accurate interpretations

of paleo-environments are realized, more accurate interpretations of past human subsistence strategies and adaptations become possible. Quaternary studies include the analyses of alluvium, pollen, soils, chronology, paleohydrology, paleontology, fecal remains, packrat middens, and malacology.

The time of the earliest arrival of people in North America is a topic with divergent views. There is no consensus among archeologists about the arrival of the earliest North Americans except that man was definitely in the New World within the Quaternary. Advancement in Paleoindian field studies during the past decade concludes that we can now place the minimum time for the first occupation of America at 20,000 B.P., with some probability of this event occurring 30,000 B.P., and the possibility that it occurred as long as 50,000 B.P. (Fladmark 1983).

The major problem with most of these sites is that they do not meet specific criteria that would provide clear evidence of the hypothesized 'Pre-Clovis' culture (ca. 15,000 to 12,000 B.P.). Stanford (1983:65) describes these criteria as (1) a clearly defined stratigraphy, (2) reliable and consistent radiometric dates, (3) consonance of data from relevant interdisciplinary studies, and (4) the presence of unquestionable artifacts in indisputable primary context. These criteria clearly address research domains that the National Park Service's Rocky Mountain Cluster continues to pursue while inventorying its park units for evidence of Early Man.

Mid- and Late-Wisconsinan

Fladmark (1983:13-41) concludes that the Mid- and Late-Wisconsinan epochs (25,000-11,000 B.P.) include a wide range of environmental variables, operative at different times and places. These variables may have affected human dispersal through North America, as well as types of cultural systems that filtered into unglaciated regions. Some human movement might have been possible during all or most of the climax phase, particularly within the generally mild and resource-rich Pacific coast. Any interior cultures of the Mid- and Late-Wisconsinan must have been thoroughly adapted to cold Arctic-Polar or Subarctic environments.

Within the Rocky Mountain Cluster, there are no parks with Mid-Wisconsinan deposits. However, there are soils located near Nathrop, Colorado (Scott 1975; Scott et al. 1975), and the Selby and Dutton archeological sites in eastern Colorado (Graham 1981; Stanford 1979) that date

to these time periods. Quaternary resources are not plentiful, albeit inadequately inventoried, in the Rocky Mountain Cluster.

Yellowstone has paleontological resources from this time. In addition, Glacier and Bighorn Canyon are known to contain Quaternary resources.

Culture Areas

There are three major culture areas represented within the Rocky Mountain Cluster: Rocky Mountains, with four sub-areas, and the Northern and Southern Plains. The Wyoming Basin, Great Basin-Wasatch Front, and the Southwest Cultural Areas are adjacent to the Rocky Mountain Cluster and our parks were utilized on a part-time basis by people living principally in these adjacent areas. The southwestern culture region includes New Mexico and Arizona. The Great Basin cultural and geographic region includes Nevada and Utah, western Colorado and portions of Oregon, Idaho, Wyoming, and California. The Colorado Plateau cultural and geographic region includes western Colorado, eastern Utah, portions of southwestern Wyoming, northern Arizona, and northwestern New Mexico.

Six culture areas contribute to the Rocky Mountains: (1) Pacific Northwest; (2) Northern Rocky Mountains, including Northwest Plateau; (3) Middle Rocky Mountains, including Northwest Plateau and the Wyoming Basin, (4) Southern Rocky Mountains, including Southwest; and (5 and 6) the Western Plains, which has two culture areas, Northern Plains and Southern Plains. Each of these areas has a great variety of environmental zones that were exploited differentially in the past. Parks in each of these physiographic/cultural areas are listed in Table II:1.

Northern Rocky Mountain Province

Environment

The Northern Rocky Mountains cultural geographical area straddles eastern Idaho and western Montana. The portion within the Rocky Mountain Cluster is located in western Montana. The Northern Rockies extend from north of the Canadian border south to the Wyoming border and the northern boundary of Yellowstone National Park. The Northern Rocky Mountain province

Table II:1. Park Units in their physiographic/cultural areas.

Physiographic Unit	Cultural Areas	Number	Park Units ¹
Rocky Mountains	Northern Rocky Mountains	3	YELL, GLAC, GRKO
	NW Plateau		
	Pacific NW		
	Northern Plains	4	GRTE, JODR, YELL, BICA
	Middle Rocky Mountains		
	NW Plateau		
Rocky Mountains	Wyoming Basin	5	BLCA, CURE, FLFO, GRSA, ROMO
	Southern Rocky Mountains		
	Southwest		
Great Plains	Northern Plains	4	DETO, FOLA, LIBI, BICA
	Southern Plains	1	BEOL

¹Some units contain evidence from more than one cultural area.

is flanked on the east by the Northern Plains and to the west by the Columbia Plateau. Elevation ranges between 3,100 and 11,000 feet above mean sea level. Most of the Northern Rockies had upthrust and extensive Quaternary glaciation that created deep trough-shaped valleys. Most of the mountains are separated by broad intermountain grasslands. The various geomorphological landforms within the Northern Rocky Mountain area contain several life/vegetation zones. These life/vegetation zones include foothills, and valley grasslands, coniferous montane and subalpine forests, and alpine (Fig. 4). Vegetation communities in the Northern Rocky Mountain province are dominated by Ponderosa, lodgepole, and limber pines,

Englemann spruce, and Douglas-fir. However, the understory includes many various edible plants (Scott 1989:3).

Only two Rocky Mountain park units are located within the Northern Rocky Mountain province: Glacier National Park and Grant-Kohrs Ranch National Historic Site. The following cultural chronology is drawn from Reeves (1993:2-25).

Cultural Chronology

The native cultural history, prior to the coming of the Europeans, has been divided into three periods termed the Paleoindian, Archaic, and Late Prehistoric (Tables II:2,



Figure 4. Site 24GL702. Crew excavating upper component on terrace in Glacier National Park. Site is being eroded by wave action of the Sherburne Reservoir.

II:3) These periods represent ca. 10,000 years, until the late 1700s, when the impact of the horse and technology of European manufacture radically changed American Indian culture and land use. The Transitional Period bridges that period between pre-contact time and the confinement of the American Indian peoples to the reservations.

In the following discussion, there is a reliance upon cultures defined by distinctive projectile points. Identification often relies upon a knowledgeable individual and identifications can vary between archeologists. Thus, culture history remains an important topic.

Paleoindian and Early Archaic Periods

The earliest occupations (ca. 10,500 B.P.) of the Northern Rocky Mountains were by peoples recognized as the Clovis Culture (Table II:3). An isolated Clovis and an obsidian Alberta point are recorded in Glacier National Park as well as an obsidian Alberta Point. A second early tradition in the Glacier region is represented by artifacts associated with the "Old Cordilleran" cultural tradition of the Columbia and Fraser Plateaus, of the Northwest Plateau Culture Area. The earliest excavated evidence of occupation from Glacier represents a horizon known as the Stemmed Point Tradition. Additional Early Period complexes in the Glacier region include Cody and Plains Mountain (Reeves 1978). Two phases (Red Rock Canyon and Valley Entrance) of the Plains/Mountain Complex are defined in the Waterton Valley north of Glacier. The Plains/Mountain Complex appears to have been developed out of the earlier Plains Agate Basin complex that appeared on the plains ca. 10,550 B.P. (Frison 1991). Climate change around 9,500 B.P. resulted in the expansion of a bison hunting culture. The Cody complex from the Central High Plains apparently displaced the earlier Agate Basin culture to the mountains, where it, in turn it is hypothesized, displaced the old Cordilleran Culture which persisted in the mountains as the Plains/Mountain Complex until ca. 8,750 B.P. Only 12 sites in Northern Rocky Mountain parks have

occupations in the ca. 10,000 to 8,750 B.P. year range. The majority of these sites appear to date to ca. 8,000 B.P., possibly because the associated land forms were not stable until then.

Many of these early occupations are mixed with later occupations. It appears that the basic land and resource use pattern and seasonal scheduling of activities was established ca. 8,000 B.P. and concentrated on bison hunting. The seasonal round was characterized by overwintering camps in the main valley and spring-to-fall hunting camps in the tributary valleys and higher life zones.

The Early Archaic is characterized by large side notched points (Fig. 5) and this period is thought to have been hot and dry, especially in comparison with Paleoindian environmental conditions. The Early Archaic is poorly understood in the Rocky Mountains but is present at the Mummy Cave and Lookingbill sites.

Middle Archaic Period

Mummy Cave Complex. The Middle Period is characterized by dart points used with the atlatl. A number of phases and complexes date to the Middle Period. The Mummy Cave Complex (Reeves 1969, 1972, 1973) is characterized by large side-notched projectile points. On the plains, the Mummy Cave peoples were well-adapted bison hunters. In the mountains they were hunters and fishermen. The environment at this time was considerably different than today. Slightly warmer, drier conditions prevailed. Chinook winds were more frequent in winter, temperatures more moderate with less snowfall and standing snow-depths, and summers were drier. The result was the expansion of valley grasslands both up-valley and upslope. In Glacier, human occupations are more frequent and "intensive" than in later times, suggesting more repeated utilization, and perhaps by large residential groups.

About 4,800 B.P., the regional climate dramatically changed with the onset of the first of the Neoglaciations. Conditions were cooler and wetter, grasslands and open

Table II:2. Park units containing materials of recognizable prehistoric groups.

Most Recognizable Prehistoric Groups	Number	Park Units
Paleoindian	6	BICA, GLAC, GRTE, GRSA, ROMO, YELL
Archaic	8	BICA, BEOL, CURE, GLAC, GRTE, GRSA, ROMO, YELL
Late Prehistoric	5	BICA, GLAC, GRTE, ROMO, YELL
Intermountain Tradition	5	CURE, GRSA, GRTE, ROMO, YELL

Table II:3. Cultural chronology of the Northern Rocky Mountain province.

Period	Complex/Phase	Age B.P.
Paleoindian		10,500-7750
Early Archaic	Bitterroot	7750-1600
Middle Archaic	Mummy Cave Complex	7750-3500
	McKean Complex	4500-3500
Late Archaic	Pelican Lake Phase	3500-1800
	Besant Phase	2000-1500
Late Prehistoric	Avonlea Phase	1600-800
	Old Women's and	800-200
	Tobacco Plains Phases	
Transitional/ Protohistoric	Mandan/Hidatsa, Arikara, Shoshone, Blackfeet, Crow	200-125
Prehistoric/ Historic	Mandan/Hidatsa, Crow, Nez Perce, Blackfeet, Cree, Flathead, Kootenai, Gros Ventres, Assiniboine, Cheyenne, Sioux, Arapahoe, Kiowa	125-present

montane forests were reduced, and sub-alpine forests expanded. A major shift occurred in the mountain ecosystems (Reeves 1978) and the local inhabitants are hypothesized to have used fire to lower the forests to maintain open valley grasslands and the mountain bison population.

The late Mummy Cave sites are more common than early Mummy Cave sites as landforms of Neoglacial age are better preserved than those that date to earlier times. Thus, the Mid-Holocene climate resulted in prolific downcutting and erosion of stream valleys and removal of many early Mummy Cave sites. Consequently, early Mummy Cave sites with buried and stratigraphically intact components are quite rare.

McKean Complex. The McKean Complex is an intrusive cultural complex into the Northern Plains/Rocky Mountains. The complex has three distinctive projectile points: McKean, Duncan, and Hanna. Large stone boiling and roasting pits occur and fire-cracked rock is common. Distinctive burial styles and other cultural traits set this complex well apart from the resident Mummy Cave Complex. In addition, McKean Complex sites contain

specific kinds of chipped stone materials (basalt and obsidian) and calcined bone fragments scattered on living surfaces. The burned bone fragments suggests that bone was used for fuel. Continuity in artifact assemblages and other archeological traits can be traced forward in time to the subsequent Pelican Lake Phase. This suggests that McKean is the ancestral culture of this later buffalo hunting culture of the Western Plains and Rocky Mountains (Brumley 1975; Reeves 1983).

Late Archaic

Pelican Lake Phase. The Pelican Lake Phase is the best documented phase of the Late Archaic Period in the Northern Rocky Mountains. A series of regional sub-phases have been proposed. In Waterton-Glacier, Pelican Lake is represented by the Blue Slate Canyon Sub-phase (Reeves 1983). This sub-phase is predominately characterized by large corner-notched dart points. Other diagnostic artifacts include triangular knives, rectangular and oval

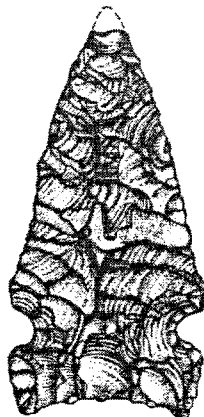


Figure 5. Early Archaic point from Yellowstone National Park.

scrapers, serrated flakes, spear points, and pointed unifaces. A conical core technology was also used. The predominate raw chipped tool stone materials were derived from Montana chert quarries. This sub-phase represents a mountain adapted, regional culture, perhaps equivalent to a tribal grouping within a larger linguistic cultural group (Husted and Edger n.d.).

Pelican Lake may be ancestral to the Avonlea Phase and later phases, identifiable as the archeological representative of the pre-contact Piikani (Blackfeet) on the plains and K'Tunaxa (Kootenai) in the mountains. These people were intimately tied to the seasonal movements of the mountain bison herds that wintered and calved in the main valley, moving in the spring into pastures in Blakiston Valley and other pastures in the lower valleys.

Besant Phase. The Besant Phase represents an intrusive cultural tradition whose homeland lies to the east of the Pelican Lake area. Distinctive characteristics include Besant side-notched dart points and Samantha side-notched arrow points. Additional distinctive tools include dorsally retouched, triangular-shaped end scrapers and asymmetric knives. Utilized tool-stone sources consist of Knife River flint and related varieties obtained from quarries in the plains of the Missouri Basin in North Dakota. Distinct territorial boundaries existed between the Besant and Pelican Lake-Avonlea Phase cultural tradition groups.

Late Prehistoric Period

The Late Prehistoric Period is characterized by the introduction of the bow and arrow. The Crandell Mountain Sub-phase is the local representative of the Avonlea Phase. Diagnostic projectile points consist of small (Head-Smashed-In) corner-notched and (Timber Ridge) side-notched types. Utilized tool stone materials were from Montana cherts and chalcedony as well as Top-of-the-World materials. Also characteristic of this phase are roasting and bone boiling pits.

Avonlea Phase. The Avonlea appears to be an ancestral archeological culture to both the Tobacco Plains and Old Women's Phases as it occurs in both areas, and continuity between it and the later phases can be traced in a number of material culture traits. In the mountains, Avonlea is generally aceramic and there seems to be a transition in technology from Late Middle Archaic sites to Tobacco Plains. On the Canadian plains, Avonlea is often ceramic—the nearest excavated Avonlea ceramic site to Waterton-Glacier lies approximately 20 kilometers north. These ceramics are the early Saskatchewan Basin

Ware (Byrne 1973). The archeological data suggest that the initial splitting of Avonlea began some 1,400 B.P.

Old Women's and Tobacco Plains Phases. The Old Women's and Tobacco Plains Phases are characterized by two cultural traditions: the K'Tunaxa, representing the Tobacco Plains Phase of the Rocky Mountains, and the Piikani, representing the Old Women's Phase in the Foothills and Western Plains. The Tobacco Plains and Old Women's are quite distinct cultural phases. Tobacco Plains is best known from traditional K'Tunaxa camps in the Crowsnest Pass (Loveseth 1980), Waterton Valley (Reeves 1980), and the Kootenai Valley (Roll 1982). The Tobacco Plains phase emphasizes the use of the Top-of-the-World chert that is the traditional K'Tunaxa quarry. In addition, a microlithic bifacial core technology characterizes this phase. The Old Women's Phase emphasizes local plains and mountain lithics and has a technology based on the extensive use of split pebble techniques to produce blanks for end scrapers and other tools. Diversity between tools of each phase continues with knives, end scrapers and drills. Pottery in Old Women's sites is late Saskatchewan Basin Complex ware. Tobacco Plains sites are aceramic.

Transitional Period

The Transitional Period represents a short period of time when traditional native culture, subsistence, and settlement patterns underwent rapid and radical change as a result of the continuing impact of disease, the horse, and the penetration of the lands by the non-native fur and whisky traders, miners, missionaries, army, ranchers, and farmers. Stone tools, particularly those most characteristic of different ethnic groups including projectile points, scrapers, knives, and pottery, were replaced by items of European manufacture such as metal points, muskets, rifles, knives, and copper pots. The transition is very visible in the archeological record in Glacier National Park.

Historic Period

During the Historic Period, American Indian cultures such as the Nitsitapii (Blackfoot), Snakes (Nimi/Shoshone), and K'Tunaxa (Kootenai) occupied the Glacier National Park region. These Indian tribes were socially and culturally complex, nomadic Northern Plains bison hunters. Their seasonal rounds began in the spring with bison drives, planting tobacco, and replacing tipi poles. The summer brought the bands together for the traditional sundance. As the summer passed into fall, bison drives were conducted in order to lay in stores of

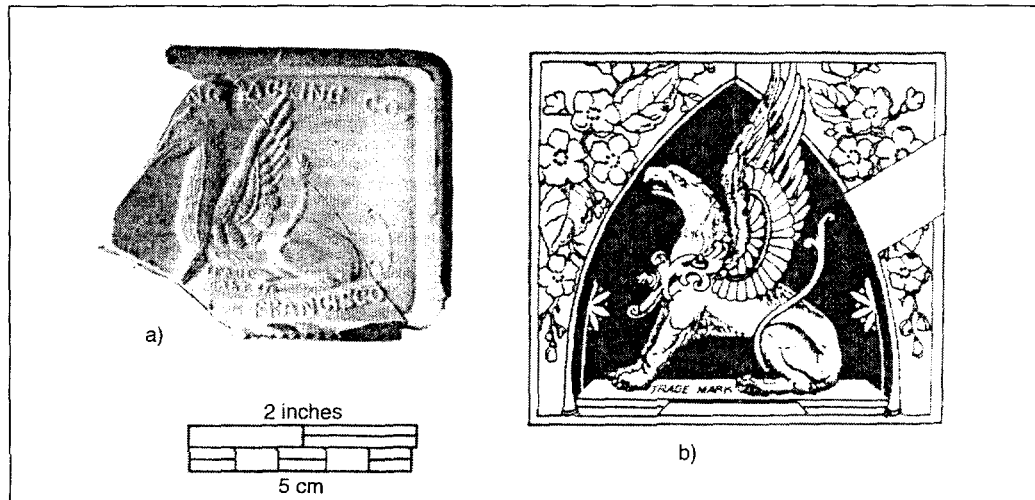


Figure 6. Cutting Packing Co. Trademark. Grant Kohrs Ranch National Historic Site.

dried meat and pemmican for winter. After the fall bison drives, the tribes split into bands and moved to the winter camp grounds. There are few known sites relating to American Indian cultures in Northern Rocky Mountain parks after A.D. 1880.

Grant-Kohrs Ranch NHS commemorates the cattle frontier and the development of the modern cattle industry. The park's historic archeological sites relating to this theme (Fig. 6). Other important non-American Indian historical archeology includes mining and homesteading in Glacier and early park administration sites in Glacier and Yellowstone.

Middle Rocky Mountain and Wyoming Basin Provinces

Five geographical and culture areas (Middle Rocky Mountains, Columbia Plateau, High Plains, Great Basin, and the Colorado Plateau) are considered together because the prehistory and cultural development of the Rocky Mountain Cluster park units located in the Middle Rocky Mountains and Wyoming Basin have general similarities. They all have defined Paleoindian, Archaic, and Late Prehistoric time periods. There are some similarities in Historic Period trends in the neighboring geographic cultural regions. The prehistory of the Middle Rocky Mountains and Wyoming Basin is well represented in the cultural chronology for the following National Park Service units.

Four Rocky Mountain park units are located in the Middle Rocky Mountain geographical province: Bighorn Canyon National Recreation Area, Grand Teton National

Park, John D. Rockefeller, Jr. Memorial Parkway, and Yellowstone National Park.

Environment

The Middle Rocky Mountain province takes in the northwestern portion of Wyoming, including the Bighorn Mountains and Basin, the Wind River Mountains, and the Yellowstone Plateau. From Yellowstone National Park, the Middle Rocky Mountain province trends south along the Teton Range, then follows the Wasatch Mountains, turning east and following the Uinta Mountains. The Wyoming Basin connects with and resembles the adjoining Colorado Plateau. This portion of the Rocky Mountain Cluster contains several intermountain basins (Bighorn, Wind, Green River, Great Divide, and Uinta basins) and small mountain ranges (Owl Creek, Wyoming, Green, and Absaroka). Six major rivers drain the Middle Rocky Mountains and the Wyoming Basin. The Bighorn Basin drains to the north by the Wind/Bighorn River. The Wyoming Basin drains to the south by the Green, Yampa, Blacks Fork, and Little Snake rivers. In addition, the major portion of the Wyoming Basin contains the Great Divide Basin which has internal drainage that neither drains to the Pacific or the Atlantic. Hunt (1967:398) states that the Middle Rocky Mountains and Wyoming Basin differ from their neighbors chiefly due to their heterogeneity of climate, terrain, and ecology.

The Middle Rocky Mountains contain steep mountains and foothills that reach a height of 11,000 feet. The mountains and foothills are covered by dense conifer forests and aspens. Along the rivers in the valley bottoms are broad leaf trees such as cottonwood, box elder, and willow. Altitudes in the Wyoming Basin are mostly

between 6,000 and 8,000 feet. The dominant geological feature within the Wyoming Basin is the Great Divide Basin that straddles the Continental Divide. The Wyoming Basin is a high desert and contains a sagebrush and short grass vegetation. All of the major mountain ranges in these provinces were glaciated during the Pleistocene.

Cultural Chronology

The cultural influences by prehistoric groups surrounding the Middle Rocky Mountains and Wyoming Basin created a fairly complex chronology (see Table II:4). Mummy Cave is a deeply stratified, dry site about 15 miles east of Yellowstone National Park. The chronology from Mummy Cave, Wyoming (Husted and Edgar n.d.; McCracken et al. 1978), has been accepted as the most representative of the Middle Rocky Mountain province. Although Mummy Cave is in the Rocky Mountains, the archeological materials represent significant relationships with the northwestern Plains, the Great Basin, and Columbia Plateau. A brief Wyoming Basin chronology discussed by Schroedl (1985) takes into account influences from other regions and will be used here. In addition, Frison's (1991) chronology for the Northwestern Plains was also used for the Middle Rocky Mountain and Wyoming Basin provinces. Although Frison's (1991) use of the term "Northwestern Plains" is not correct in the physiographic sense, it covers most of the cultural/geographical area discussed here (Table II:4).

The native cultural history, prior to the coming of the Europeans, has been divided into three periods: the Paleoindian, Archaic, and Late Prehistoric. These are associated with American Indian material culture and land use history from ca. 11,000 B.P. until the late 1700s when the impact of the horse and artifacts of European manufacture radically changed American Indian culture and land use.

In the following discussion, John D. Rockefeller National Parkway is lumped with Grand Teton National Park. Yellowstone, Grand Teton and John D. Rockefeller received influences from the Columbia Plateau, Great Basin, Western Plains as well as containing local mountain-adapted peoples. Much of the Northern Rocky Mountain culture history is applicable particularly to Yellowstone. The archeology of Bighorn Canyon represents both plains and mountain-adapted peoples.

Paleoindian Period

Paleoindian occupation of the Middle Rocky Mountain and Wyoming Basin province is well represented. In

Table II:4. Cultural chronology of the Middle Rocky Mountain and the Wyoming Basin Province.

Period	Complex/ Phase	Age (Yrs Ago)
Paleoindian	Clovis	11,500-10,800
	Folsom	10,800-10,500
	Agate Basin	10,500-10,000
	Hellgap	10,300-9,500
	Cody Complex	10,000-8,500
	Late Paleo	8,000-7,000
Archaic	Early	7,000-5,000
	Middle	5,000-2,500
	Late	2,500-1,500
Late Prehistoric		1,700-200
Historic		200-50

general, Paleoindians are characterized as big-game hunters and seem to be the earliest inhabitants of the Middle Rocky Mountains and the Wyoming basin. These big game hunters of the Late Pleistocene hunted now-extinct species of mammoth, bison, horse, and camel, and date to approximately 12,000 to 10,000 years B.P. Plants were also used as roasting pit features at the Barton Gulch site west of Yellowstone National Park date back almost 9,000 years B.P. (Armstrong 1993). Cultural materials (radiocarbon-dated cultural levels, diagnostic projectile points) representing the complete Paleoindian Period from Clovis to Late Paleoindian are found in the Middle Rocky Mountains and the Wyoming Basin (Frison 1991; Husted and Edgar n.d.). A complete sequence of Paleoindian materials has been recovered from Grand Teton National Park. Although no Folsom sites have been discovered in Yellowstone National Park, an obsidian Folsom projectile point was recovered south of Grand Teton and sourced to Obsidian Cliff (48YE344) in Yellowstone National Park (Davis et al. 1995). Cody Complex and Late Paleoindian materials are documented in Yellowstone National Park, Grand Teton National Park, and Bighorn Canyon National Recreation Area (Fig. 7).

Archaic Period

Early Archaic. The Early Archaic Period dates from 7,000 to 5,000 years ago. Prior to the Archaic Period a geologic episode, the Altithermal is thought to coincide

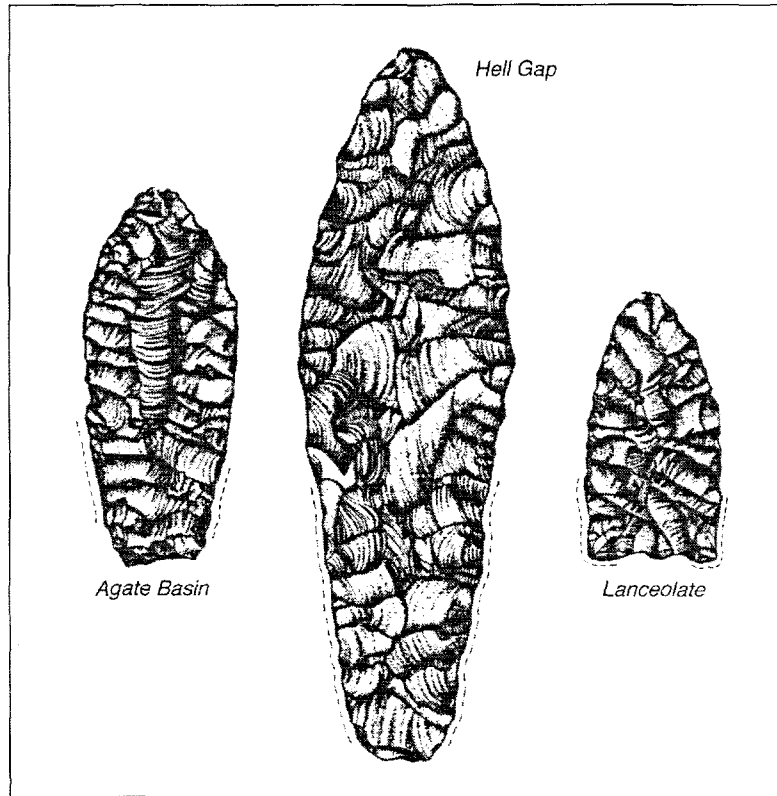


Figure 7. Paleoindian points from Yellowstone National Park. (Dashed line shows grinding. Actual size.)

with a cultural hiatus in the region. Antevs (1948, 1955) describes the Altithermal as a period of increasing temperature and xeric climatic conditions which resulted in a reduction of available forage and carrying capacity for populations of large herbivores. This hypothesis may be partially correct. However, cultural evidence for this area during this period is generally lacking and cannot support or negate this hypothesis. The altithermal could represent a climatic condition that resulted in the exclusion of human habitation in much of the area. There is strong evidence of Early Archaic cultural groups in the foothill-mountain area and in most areas of greater topographic relief along mountain slopes. It is thought that the subsistence base shifted from the exploitation of large mammals to a balanced utilization of wild plant resources and small mammals (Armatage et al. 1982). Evidence of this subsistence shift and semi-sedentary settlement is present in the Wyoming Basin (Eakin 1984; Eakin et al. 1987; Harrell and McKern 1986; Miller 1984; Truesdale et al. 1987). At Mummy Cave, the Early Archaic is represented by the Bitterroot Culture and phase with diagnostic (Pahaska and Blackwater) side-notched points (Fig. 6). The Early Archaic is well

represented in the Middle Rocky Mountains and Wyoming Basin and in Grand Teton National Park, Yellowstone National Park, and Bighorn Canyon National Recreation Area.

Middle Archaic. The Middle Archaic Period, dating from 5,000 to 2,500 B.P., coincides with a return of mesic climatic conditions. Subsistence strategies continue to be a balanced economy of hunting and gathering. Technological changes include the appearance of lanceolate (McKean) and stemmed (Duncan, Hanna) projectile points. Desert Archaic points (Elko, San Rafael side-notched) are found in southwestern Wyoming. At Mummy Cave, 15 miles east of Yellowstone National Park, the Bitterroot Culture's Beaverhead Phase prevails with stemmed, indented base and corner-notched points. Middle Archaic sites have been recorded in Bighorn Canyon National Recreation Area, Grand Teton National Park (Fig. 8), and Yellowstone National Park.

While a variety of dated features and isolated activity areas have been excavated from this period, extensive assemblages and feature complexes are not yet well documented. In addition, several Middle Archaic sites appear to suggest that elaborate mortuary rituals, includ-

ing the use of red ocher, were being practiced (Metcalf et al. 1981; Millar 1981).

Late Archaic. Recent dating efforts show the Yonkee point is Late Archaic (Bump 1987). This point is most often found associated with bison kills. The subsistence strategies during the Late Archaic, dating between 2,500 to 1,500 B.P., are similar to those in the Middle Archaic. Although the Late Archaic is characterized by the introduction of medium-sized points such as Pelican Lake, Besant (Frison 1991), and Elko series points, the transition from Middle Archaic to Late Archaic is not clearly defined. Cultural materials of the Middle Archaic McKean Complex were replaced by later manifestations. These later cultural manifestations included the Pelican Lake and Besant Phases. Large to small corner-notched projectile points are diagnostic of Pelican Lake, while Besant Culture is characterized by large side-notched points. Both phases are associated with large scale bison procurement. In the Wyoming Basin, it has been argued that the Middle and Late Archaic periods represent phases in the post-Altithermal cultural development in southwestern Wyoming rather than distinct cultural periods (Zier et al. 1983). Late Archaic cultural materials have been recorded in Bighorn Canyon National Recreation Area, Grand Teton National Park, and Yellowstone National Park.

Late Prehistoric

The Late Prehistoric Period begins about 1,800 B.P. and continues until about 400 B.P. Communal bison procurement reached its greatest prehistoric expression in terms of numbers of animals killed during this time (Frison 1978:223). The Late Prehistoric Period is recognized by a change in projectile point types and sizes resulting from the introduction of the bow and arrow. The earliest arrowpoints in the Northwestern Plains are identified as Avonlea (Frison 1978:62). Avonlea points are characterized by true side-notches placed close to the base and extremely fine flint knapping technology. Both small corner and side-notched bow and arrow projectile points occur at the same time, reflecting a number of different cultural groups. Side-notching and base-notching together on small points appeared toward the end of the Late Prehistoric Period and were common in protohistoric times.

Ceramics also appeared in the Middle Rocky Mountains and throughout the Wyoming Basin at this time. Although found in relatively small amounts, they are a valuable cultural marker. Several pottery traditions are represented. Intermountain Ceramic Tradition (Fig. 9), Uncompahgre Brown, Plains Woodland, Dismal River, Promontory, and Fremont pottery are present. In the northern portion of the Middle Rocky Mountain province,

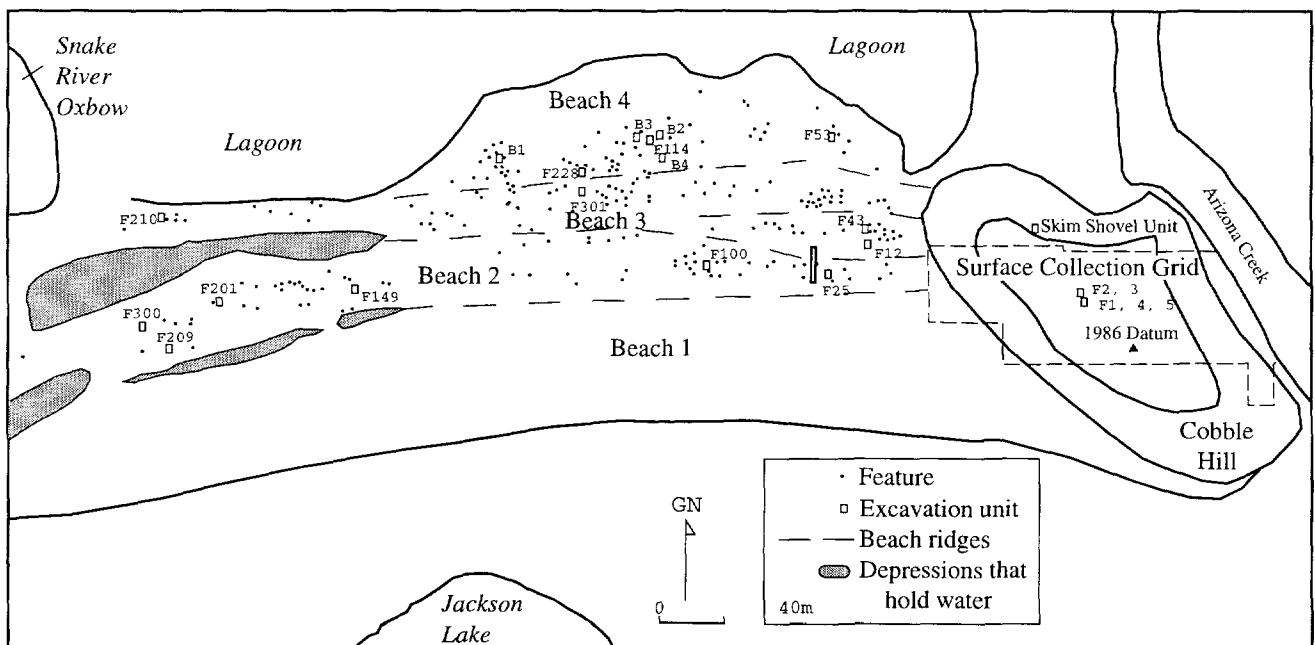


Figure 8. Site map, 48TE1067. Grand Teton National Park.

Crow Indian movements are thought to be identifiable by ceramics (Frison 1978:67). Others are unidentified at this time (Fig. 10). Plains Woodland pottery is found on the eastern edge of the Middle Rocky Mountain and Wyoming Basin along river drainages. The Intermountain Tradition and Uncompahgre wares in southwestern Wyoming and in Yellowstone and Grand Teton national parks. These wares are considered to be associated with Shoshone and Ute movements (Fig. 9). Fremont wares can also be located in southwestern Wyoming and suggest some influences or movements of these horticulturalists into the Wyoming Basin region. Pueblo pottery, both corrugated and painted sherds, have been found along the southern border of Wyoming west of the North Platte River. These sherds have not yet occurred in datable contexts or in association with diagnostic materials. The occurrence of Dismal River and Promontory pottery in Wyoming is still questionable, although occasional recording of these types does occur.

Protohistoric/Historic Period

In general, American Indian sites from this period are poorly known, particularly in Grand Teton National Park. Rare examples of wickiups (see front cover), or conical timbered lodges can still be found in Yellowstone. These provided temporary shelter for travelers and raiding parties. Protohistoric/Historic Period American Indian sites in Bighorn Canyon are associated with the Crow Indians and include rock art, vision quest sites, and campsites.

Most historic archeology relates to the military and

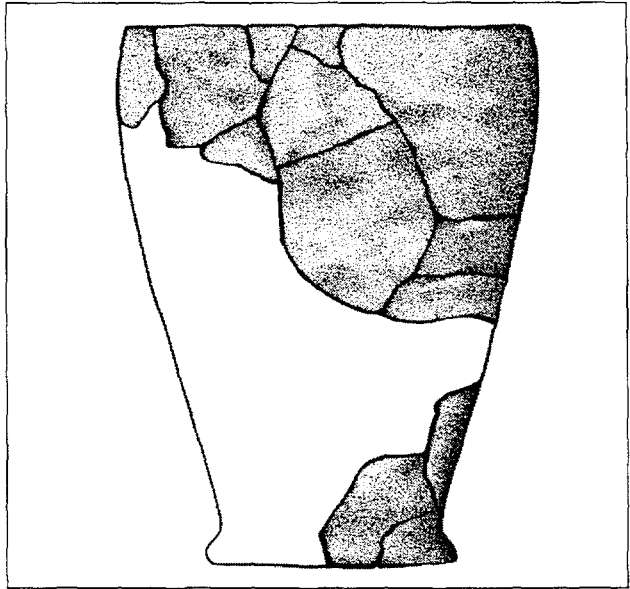


Figure 9. Reconstructed Intermountain vessel from Yellowstone National Park (twelve inches tall).

park administration in Yellowstone and homesteading in Grand Teton.

Southern Rocky Mountain Province

Environment

The Southern Rocky Mountain province forms a broad north-south band running through the center of the state of Colorado. This band consists of two parallel ranges separated by a number of valleys and parks. The eastern

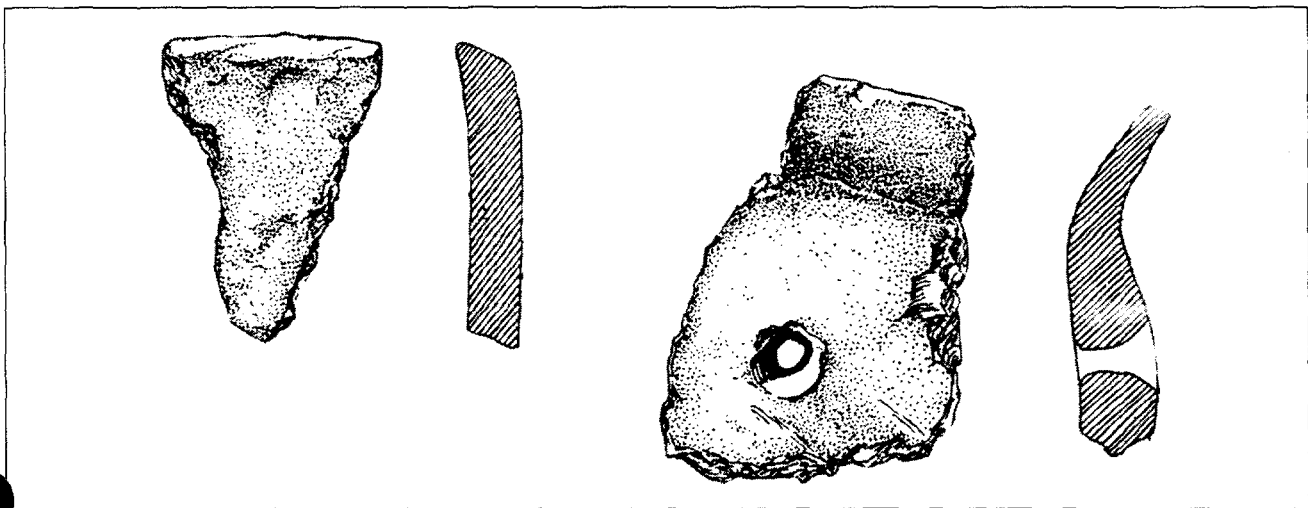


Figure 10. Late Prehistoric ceramics from Bighorn Canyon National Recreation Area (actual size).

belt is the Front Range from the Wyoming State line to beyond the Arkansas River. The area south of the Arkansas includes the Wet Mountains and the northern part of the Sangre de Cristo Mountains. From north to south the western belt includes the Park Range, Gore Range, Saguache Range, and the San Juan Mountains (Cassells 1983:19).

This geographic region is characterized by rugged peaks, some over 14,000 feet. Between these peaks are grass-covered valleys and three major parks: North, Middle, and South parks. There is one major valley, the San Luis Valley. The high peaks and valleys that characterize the Southern Rocky Mountain province form a vast and complex drainage system, and water is plentiful throughout the area. The major drainages listed from north to south include; the North Platte, White, Colorado, Gunnison, Upper Arkansas, South Platte, and the Rio Grande rivers.

Cultural Chronology

The cultural history of the Southern Rocky Mountain province, like most of the surrounding cultural/geographical regions, can be divided into four cultural units: Paleoindian, Archaic, the Late Prehistoric/Formative, and the Protohistoric/Historic (Table II:5). This sequence is summarized in Lintz and Anderson (1989).

Although there is increasing evidence for a Pre-Clovis Period in Colorado (Humphrey and Stanford 1979), this topic is still controversial, and this period is not as yet represented by corroborative archeological evidence from this region. The Paleoindian Period dates from 12,000 to 7,500 B.C. and is characterized by the hunting of extinct megafauna. Although evidence of Paleoindian occupations in the mountain area is limited, many isolated points and tools are known to exist in the region.

Paleoindian Period

The Paleoindian Period in the Southern Rocky Mountain region is divided into three cultural segments: Clovis, the Folsom, and the Plano or Late Paleoindian (Fig. 7). Each of these sub-periods is well defined and distinguished by different point styles and manufacturing techniques and by particular faunal associations. These distinct tool assemblages and subsistence patterns represent the Paleoindian peoples' adaptation to the plains and mountain tundra environment of the Late Pleistocene. In addition, Paleoindians also relied on small game and plant resources to supplement their diet. An increase of point styles in the Plano Period may be indicative of a

Table II:5. Cultural chronology of the Southern Rocky Mountain province.

Period	Complex/ Phase	Age, B.P. (Ca.)
Paleoindian	Llano, Clovis	11,500–10,800
	Folsom	10,800–10,000
	Agate Basin	10,500–10,000
	Hellgap	10,300–9,500
	Cody Complex	10,000–8,500
	Late Paleo	8,000–7,000
Archaic	Early	7,000–5,000
	Middle	5,000–2,500
	Late	2,500–1,500
Late Prehistoric	Anasazi	1,700–200
	Fremont	
	Woodland	
	Up. Rep.	
Protohistoric/ Historic	Cheyenne	200–50
	Ute	
	Shoshone	
	Arapahoe	
	Navajo	
	Hopi	
	Apache Kiowa	

more diverse subsistence pattern and the exploitation of a wider variety of animals.

Clovis. Clovis points are reported in Rocky Mountain National Park along Trail Ridge Road at an elevation of 11,000 to 11,500 feet (Husted 1962, 1965:496). Near Curecanti, in the Gunnison River drainage, Clovis points occur as surface scatter and as isolated finds (Carpenter et al. 1976; Burgess et al. 1980:28; Jones 1982:6). An excavated hearth at Curecanti has also yielded a date of 10,094±830 years B.P. (Jones 1982:12; Stiger 1981:109). The Mount Emmons Project, also in the Gunnison Basin, produced a possible Clovis/Folsom "fluted" mid-section (Baker et al. 1980:120). Hurst (1943:251) reported the presence of extinct mammoth and bison remains from the Gunnison Valley, but no associated cultural materials. Late Pleistocene fauna have also been excavated from a cave site in Curecanti, though cultural associations are dubious (Euler 1979; Euler and Stiger 1981).

Folsom. There are abundant Folsom remains in the San Luis Valley, and a more limited distribution in other

areas within the Southern Rocky Mountain province (Calabrese 1979; Dawson and Stanford 1975; Emery and Stanford 1982; Hurst 1941).

Plano. Examples of Plano points found in the Southern Rocky Mountain province include Eden, Meserve, Cody, Agate Basin, and Jimmy Allen along the Front Range and in the vicinity of Rocky Mountain National Park (Husted 1965:494) (Fig. 11). A Jimmy Allen point was recovered during the excavation of the Iola Site in Curecanti, and other diagnostic Plano surface finds have also been recovered in that park (Jones 1982; Stiger 1981:62). Charcoal from a possible post mold at Curecanti dated to 7272 ± 110 years B.P., indicating Late Paleoindian/Early Archaic occupation. To the west of Cimarron, also in the Gunnison River Basin, structural remains associated with other cultural artifacts indicate a well-developed stone tool industry that date to 8,300 years ago.

Archaic

Archaic Period dates between 5500 B.C. and A.D. 500 coincide with the terminal Pleistocene environmental change (Altithermal) that resulted in an environment similar to what exists today. This period is characterized by the exploitation of small game animals and an increased reliance on the gathering of wild plants. Specifically, pollen and macrofloral studies indicate the

possible exploitation of pinyon nuts, wild grasses, cactus, and sagebrush leaves (Euler and Stiger 1981; Stiger 1981).

The Archaic, then, is generally characterized by a shift to a more diversified subsistence pattern that is manifested in the archeological record by the increasing occurrence of ground stone tools, a greater variety of projectile point styles, and a wide array of other tools within Archaic assemblages. Other diagnostic features include large stone boiling pits, possible hunting blinds, structures defined by patterned post molds, and stone circles. This Archaic adaptation is thought to originate in the Desert West, and more precisely within the Great Basin. The Archaic Period is well represented throughout the Southern Rocky Mountain province and can be divided into Early, Middle, and Late periods.

The utilization of the mountains' rich biotic and abiotic resources coupled with small-band mobility served their populations well and promoted a continuation of Archaic lifestyles until European contact periods. A synthesis of Archaic hunter-gatherer lifeway adaptive strategies has been developed by Black (1982:165-168, 1991).

Early Archaic Period. The Early Archaic presence in the Southern Rocky Mountain province is identified by diagnostic projectile points, including Blackwater, Pahaska, and Southsider Side-notched points, Hawken,

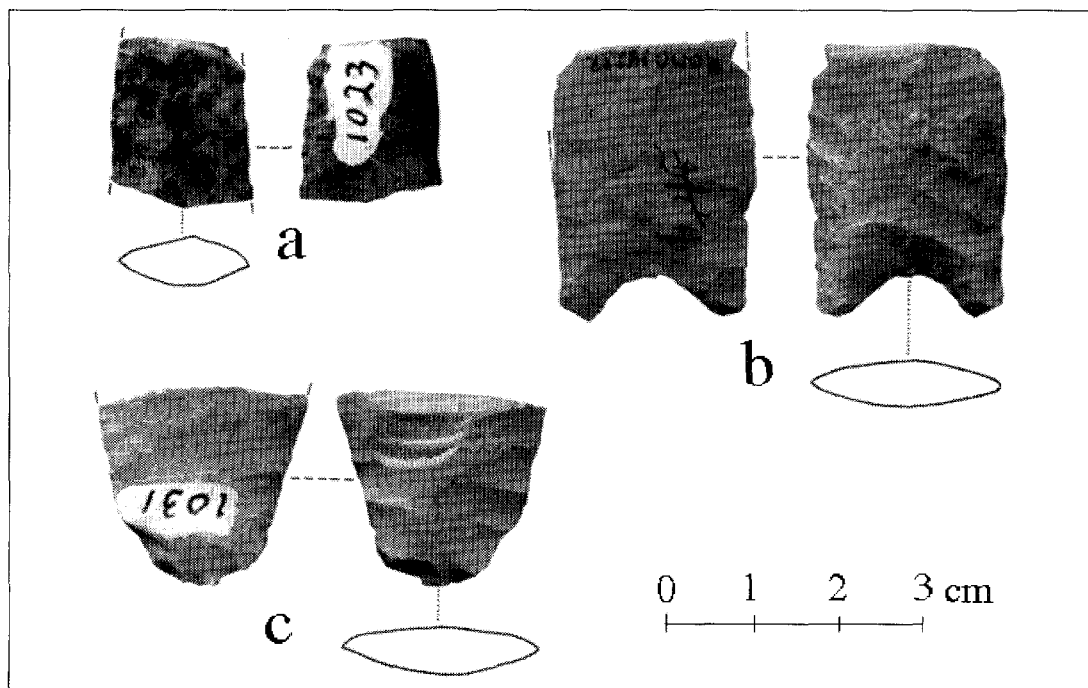


Figure 11. Paleoindian point fragments from site 5RL6. Rocky Mountain National Park.

Bitterroot, Oxbow types, and some Mummy Cave points. A controversial topic relating to the Early Archaic concerns the Altithermal and its effects on Early Archaic populations. According to Antevs (1955), climatic conditions in western North America were markedly drier and hotter during the period from about 7,000 to 5,000 B.P. than they are now. Benedict (1979) proposes that an analysis of the distribution of Early Archaic radiocarbon dated sites in western North America shows large-scale abandonment of those areas that would be most affected by a warmer climate and drought. He further proposes that these populations retreated to cooler and wetter refuges. The Southern Rocky Mountains is one of these more hospitable zones (Benedict 1979; Benedict and Olson 1978). These patterns have led Benedict to conclude that the Mount Albion Complex along the Front Range and in Rocky Mountain National Park particularly is a mountain-based culture that represents one such population migration to the mountain valleys of the Front Range. Other sites along the Colorado Front Range such as Magic Mountain (Irwin-Williams and Irwin 1966) and LoDaisKa (Irwin and Irwin 1959) display similarities to the Early Archaic occupations defined in the Mount Albion Complex. This led Benedict to hypothesize that at least part of the Magic Mountain occupation included visits from a mountain-adapted culture (Benedict 1979).

Work in Curecanti National Recreation Area of the Gunnison River Valley yielded a tremendous amount of data within the Southern Rocky Mountain province. Stiger (1981) noted that Curecanti National Recreation Area radiocarbon dates were prior to 6,000 B.P. He suggests that this evidence indicates the Indians were exploiting specific environmental components which were absent from the region after 6,000 B.P., causing the aboriginal inhabitants to abandon the area. However, later Curecanti National Recreation Area investigations (Jones 1982; Stiger 1981:Appendix B) refute Stiger's abandonment theory.

Evidence suggests that at certain locations in the Southern Rocky Mountain province (i.e., Curecanti National Recreation Area, Middle Park), occupations during the Early Archaic were semi-sedentary base camps (Black 1982). Sites at Curecanti are usually located near ridges or in lowlands and contain adobe structures, and slab-lined and unlined hearths. Exposed in excavation, the structures appear as patterns of post molds, charred wood, or small charcoal-filled depressions that also contain concentrations of pole-impressions burnt clay and are interpreted as evidence of possible wickiup-like

structures (Jones 1982). These sites were probably used for habitation and plant and animal resource processing and consumption. It is possible that trash dumps containing bone, lithics, charcoal, and fire-cracked rock are located below these ridge sites (Stiger 1981).

The Curecanti National Recreation Area lowland sites exhibit a higher density of flaked stone artifacts, cores and debitage, but produce a lower ground:stone ratio. This may indicate more stone tool manufacture, less plant food preparation, and short-term occupation, though fire hearths also occur here.

Middle Archaic Period. The Middle Archaic, 5,000 to 2,000 B.P. is characterized by the presence of the McKean-Duncan-Hanna projectile point series. However, in the Colorado Front Range, the McKean Complex is preceded by people making a medium sized, atlatl point with shallow notches and a round base called MM3. The MM3 point dates from 3300 to 3800 B.P. Middle Archaic diagnostics also include Mallory and Oshara styles, the Elko series, and Northern, Hawken, and Sudden Side-Notched points (Fig. 12). The last three point types also occur in the Early Archaic Period. Though there are obviously many diagnostic points of the Middle Archaic Period, McKean Complex points are present through the entire Southern Rocky Mountain province. End and side scrapers appear frequently in tool kits, ground stone is abundant, and the true mano and metate grinding tools appear. Early waddle and daub houses dramatically changed our view of Archaic lifeways (Fig. 13). Large roasting pits and hearths and/or boiling pits are definitive features. Benedict (1981:87) theorized that the McKean Complex was derived from a relocated Altithermal group. He sees a transition from Late Paleoindian Jimmy Allen points to McKean lanceolate points and from Pryor Stemmed points to Duncan points (Benedict 1981:88).

Black (1991:1-29) suggests that lithic technology leads to the definition of a unique Archaic adaptation called the Mountain Tradition. This tradition is widespread in the Rockies during the late Paleoindian and Early Archaic periods as far north as southern Montana. However, Middle Archaic expansion of the McKean complex appears to limit use of the term in post-4,500 year ago era to the Southern Rocky Mountain province. Archaic continuity in the Southern Rocky Mountains is expressed in archeological remains as recently as 1,000 to 700 B.P., after which explaining the presence of Numic sites (thought to represent Shoshonean peoples) may have required a new influx of hunter-gatherer populations.

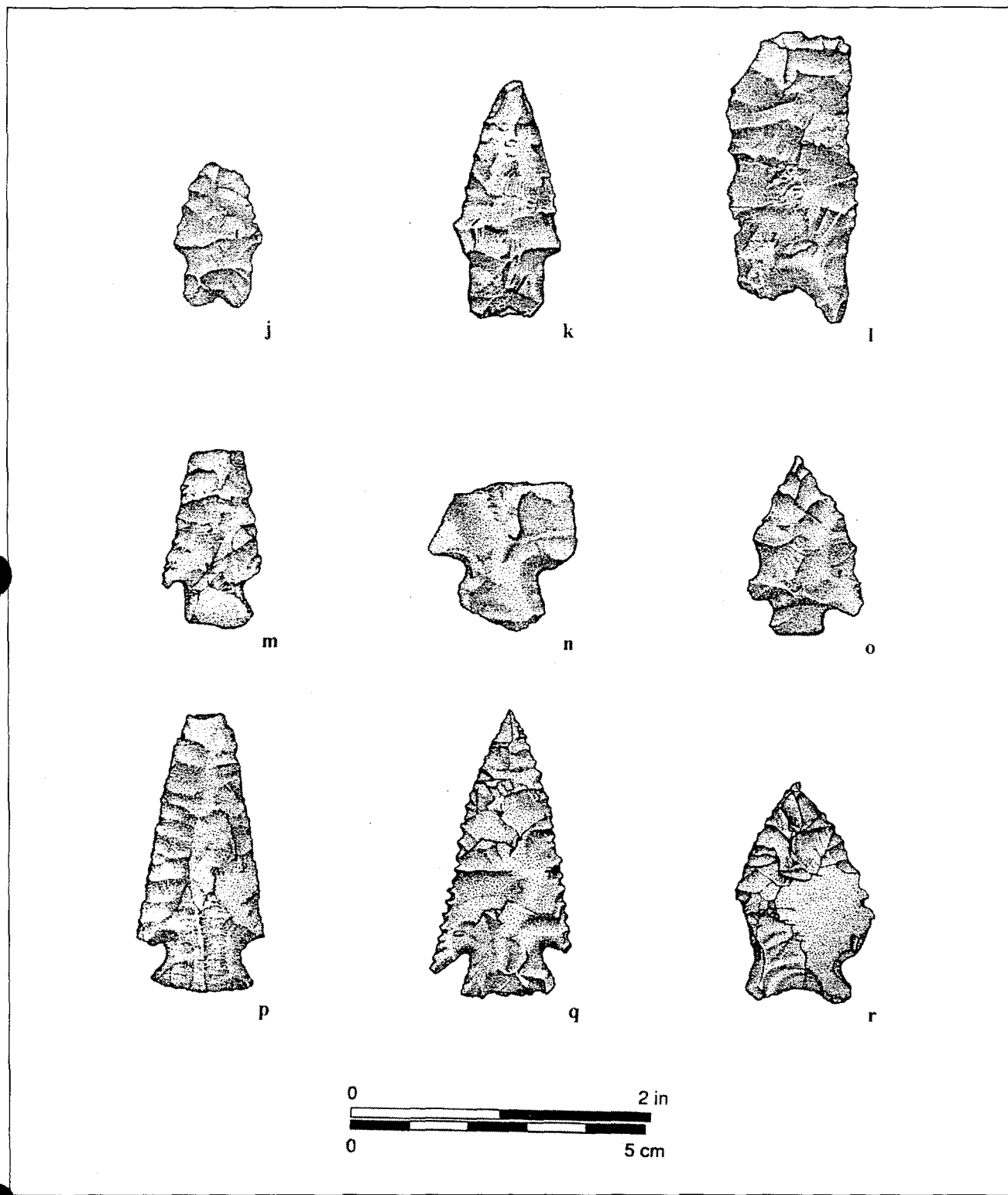


Figure 12. Middle and Late Archaic projectile points from Curecanti National Recreation Area.

Figure 13. Salvage excavation of 3500-year-old house being eroded by Blue Mesa Reservoir. Curecanti National Recreation Area.



Black's ideas about the Mountain Tradition remain to be fully tested.

Middle Archaic materials have been located in Rocky Mountain National Park. Additional information pertaining to the Middle Archaic in the Southern Rocky Mountain province can be found in Guthrie et al. (1984).

Late Archaic Period. The Late Archaic Period, 2,000 to 1,400 B.P., exhibits a continuing trend of increasing ground-stone frequencies and decreasing projectile point size (Fig. 14). Among Late Archaic styles are Pelican Lake points, the Magic Mountain site's Apex Complex types, Roubideau Phase and Ironstone Phase points of the Uncompagre Complex, some complexes at LoDaisKa, Besant points, and En Medio points of the Oshara Tradition. Additional specific information pertaining to the Late Archaic in the Southern Rocky Mountain province can be found in Guthrie et al. (1984).

Late Prehistoric

The Late Prehistoric Period appears to continue a hunting and gathering adaptation "Archaic lifestyle." Guthrie et al. (1984:49) indicates that the distribution of sites seems to be dictated primarily by horizontal and vertical distances to water and by advantageous views of faunal resources. Multiple-activity base camps appear to be located at lower elevations and nearer to water than peripheral special, or limited activity sites (Baker et al. 1980:191). This time period in the Colorado Plateau is recognized as the Formative Stage, represented by Anasazi and Fremont cultures. The Formative Stage is

defined by the presence of agriculture (corn, beans, and squash) and the integration of agricultural and horticultural subsistence lifeways into a well-established, sedentary village life. Guthrie et al. (1984) doubt that the Southern Rocky Mountain province exhibited a Formative lifestyle, although Formative populations may have utilized particular regions. The proximity of the Southern Rocky Mountain area to a variety of cultural areas is represented by the number of influences exhibited in the mountains by external Formative groups. These groups include the Anasazi to the southwest, the Fremont to the northwest and west, and the Plains Woodland and Upper Republican to the east.

Anasazi. The Anasazi Culture of the southwest, 1050 B.P. to 650 B.P., is represented sparsely in the Southern Rocky Mountains. There is evidence of the Anasazi contact in the Rio Grande National Forest, but most comes from the San Luis Valley. The presence of southwestern pottery and some definitive projectile point styles may suggest trade with or utilization of the area. Zier (1977) suggests the possibility of Anasazi hunting forays venturing into the mountains north of the Dolores area. However, no evidence for horticulture has been recovered from the Southern Rocky Mountain area. Horticulture marks Formative culture development.

Fremont. Fremont influences from Utah and the Great Basin (A.D. 100–1250) are characterized by a semi-agricultural lifestyle with pithouses and masonry structures, storage features, distinctive ceramics, and rock art styles. Evidence in the Southern Rocky Mountain



Figure 14. Game Blind Structure (5LR15). Animals would not have seen the blind until they crested the saddle and were within atlatl range. Charcoal from blind was dated at 2610 ± 60 BP. Rocky Mountain National Park.

area for Fremont occupation is scarce; however, there is some evidence (i.e., point styles) for Fremont occupation in the Routt National Forest (Ward-Williams and Foster 1977) and in the Middle Park area (Lishka and Black 1979).

Plains Woodland/Upper Republican Phases. Evidence of Plains Woodland occupation in the Southern Rocky Mountain province has been found along the Front Range along in the foothills/plains transition zone and in the San Luis Valley. The Plains Woodland Tradition to the east is characterized by sedentary village horticulturalists and is represented in the mountains only by ceramic fragments and projectile points. Rock shelters along the Front Range contain multiple Archaic and Plains Woodland components suggesting local continuity with the addition of the bow and arrow and pottery to the archaic material culture. Plains Woodland pottery and points are found in Rocky Mountain National Park (Hartley 1981). Evidence for Plains Woodland

decreases as the movement to the west of the Front Range increases (Black 1982:163). The presence of Plains Woodland materials in the Southern Rocky Mountain province does not necessarily suggest the presence of a Formative Stage. Instead, it appears that Formative peoples probably utilized the mountains in a hunting and gathering pattern of seasonal transhumance by taking advantage of the diverse biotic zones and resources present.

Upper Republican sites are found within sight of the Front Range but not within the foothills or Rocky Mountains (Wood 1971). Sites are identified by characteristic pottery. The core Upper Republican area is in Nebraska and Kansas.

Protohistoric/Historic

The Protohistoric/Historic Period for the Southern Rocky Mountain province dates from about A.D. 1300 to 1800 (Guthrie et al. 1984). This period includes part of

the Late Prehistoric Period as defined by Frison (1991) but excludes the earlier Plains Woodland and Upper Republican traditions. Ethnographic accounts indicate occupations by groups such as the Ute, Shoshone, Arapahoe, Comanche, Cheyenne, and Apache in the Southern Rocky Mountain province. It is difficult to identify ethnic affiliation of archeological sites in the absence of historical documentation and even more difficult to distinguish between related groups, such as Ute and Shoshonean, at archeological sites. The Ute/Shoshonean Indians were primarily small game hunters and gatherers, collecting nuts, roots, seeds, and grasses, and utilizing many species of wild plant life (Fig. 15). Much of their game included the smaller animals such as rabbit, antelope, deer, and fish. They also lived off of even smaller resources such as eggs, lizards, snakes, insects, and ants (Steward 1967:243). In the early 1800s, the Ute/Shoshonean sociocultural and socio-economic lifestyle changed with the introduction of the horse. Though this new way of life was short-lived from the early 1800s to about 1870 when the United States forces defeated them, the horse markedly changed the people's lives (Steward 1967:252).

The introduction of the horse into the Rocky Mountain Cluster and the manifest destiny of the United States changed all historically known Indian tribes in the area, removing them from traditional lands and placing them onto government reservations.

Great Plains Province

Environment

The Great Plains province slope eastward from about 5,500 feet at the foot of the Rocky Mountains foothills to about 2,000 feet at the eastern boundary. In the United States, drainage on the plains is parallel and the streams flow eastward from the Rocky Mountains to the Missouri and Mississippi rivers. Trees are largely confined to the valleys; the uplands are, for the most part, treeless; original grasslands are now plowed fields or pastures.

The Great Plains within the Rocky Mountain Cluster are bounded on the north by the Canadian-United States border and extends south to central Texas, and from the Rocky Mountains on the west to the central portion of South Dakota, Nebraska, Kansas, Oklahoma, and Texas. Most of the cultural chronology described below has been taken from Eighmy (1984). Culturally, the Great Plains, for purposes here, is divided into two distinct areas: the Northern and Southern Plains. Willey (1966:313) divides

the Great Plains into several areas (Northwestern, Central, and Southern Plains); the Central Plains influences rarely extend into eastern Colorado. Park units located in the Western Plains include Little Bighorn Battlefield National Monument, Fort Laramie National Historic Site, Devils Tower National Monument, and parts of Bighorn Canyon National Recreation Area. Only one park unit, Bent's Old Fort National Historic Site, is located in the Southern Plains province.

Cultural Chronology

There are five cultural traditions associated with the Plains area: Paleoindian, Archaic, Ceramic, Plains Village/Late Prehistoric, and Protohistoric/Historic. The general archeological chronology of the Plains area is presented in the following cultural traditions and culture periods (Table II:6)

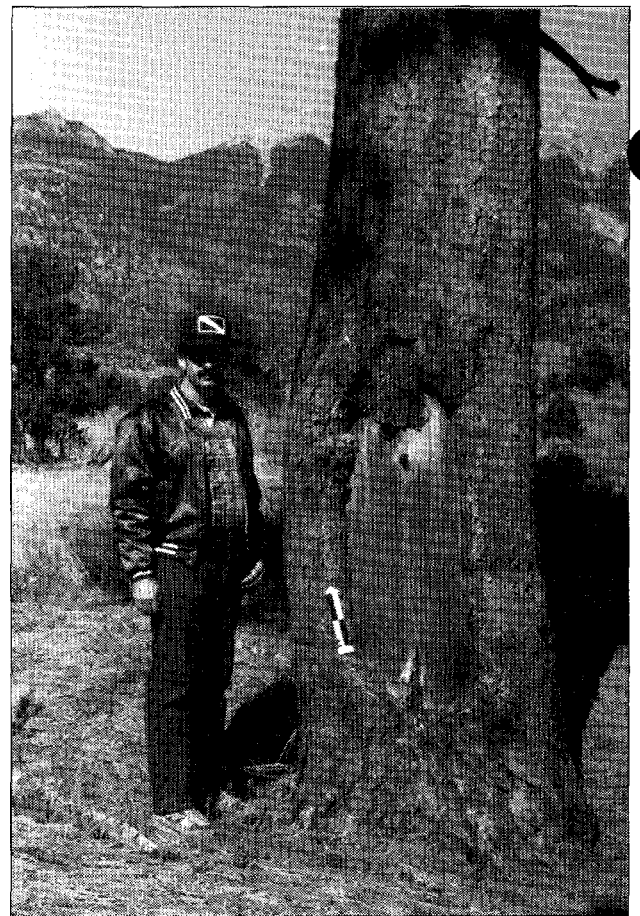


Figure 15. Culturally scarred tree (SSH1035), Great Sand Dunes National Monument. This scar was created in A.D. 1826. The inner bark would be collected and used for food.

Table II:6. Cultural chronology of the Great Plains province.

Major Periods	Dates (Yrs BP)	Northwest Plains	Central Plains	Southern Plains
Paleoindian	11,000	Clovis	Clovis	Clovis
	10,000	Folsom	Folsom	Folsom
	9,000	Agate Basin	Lime Creek	
	8,000	Scottsbluff, Eden	Simonsen	Plainview
	7,000		Logan Creek	Portales
Archaic	6,000	Mckean		Edwards Plateau
	3,500	Pelican Lake	Signal Butte	
Ceramic Stage/ Late Prehistoric	2,000	Besant/ Middle Woodland	Renner (Hopewell)	Delaware A Cooper Phase
	1,400	Avonlea Late Woodland	Loseke Sterns Creek	
Plains Village	900	Old Women's Phase/Initial Middle Missouri	Nebraska	Apishapa Antelope Creek
	800	Extended Middle Missouri	Upper Republican	Custer Washita
	300	Extended Coalescent	Lower Loup	Henrietta
	250	Apache?	Dismal River	
	200	Arikara, Crow, Cree, Blackfeet, Cheyenne, Sioux, Mandan/ Hidatsa	Pawnee Omaha	Comanche Kiowa (Dismal River)

Paleoindian Period

The Paleoindian Period, prior to 6,000 B.P., was the time of the Big-Game Hunting tradition on the plains. Eastern Colorado has been a focal point for research into the Paleoindian Period because of the high density of sites coupled with relatively little overburden. Due to deflation during Dust Bowl years, it is unclear whether the high density is the result of a higher prehistoric population density on the plains or to the physical processes of site formation and transformation.

The earliest generally recognized evidence for human activity in Colorado is represented by Paleoindian Period, 12,500 to 7,000 B.P., when the climate was characterized by cool summers and warm winters (Bryson et al. 1970:53-74). This tradition is characterized by the presence of relatively large lanceolate projectile points found in association with large extinct Pleistocene fauna (mammoth, bison, horse and camel). Paleoindian peoples are inferred to have been organized into egalitarian

nomadic bands depending on the large game they hunted and also on the seasonal plants they gathered.

The Paleoindian Period can be divided into three periods; Clovis, Folsom, and Plano, recognized by distinctive projectile points. Although Paleoindian projectile points have been reported from many areas of southern and eastern Colorado, no sites have been reported south of the Arkansas River.

Clovis. The Clovis Period, 12,500 to 11,000 B.P., is considered to be the earliest period within the Paleoindian Stage. Clovis material culture is characterized by large, fluted lanceolate spear points, and blade tools that were most likely used for various tasks. Clovis sites in eastern Colorado include the Dent site, where a Clovis projectile point was associated with the remains of a horse and several other stone tools dated to 11,760 years B.P., and the Lamb Spring site south of Denver (Frison 1991; Stanford et al. 1981:115-116). In addition, evidence for

ritual practices (red ocher in burials) appears.

Folsom. The Folsom Period, 11,000 to 10,200 B.P., experienced a warming climate associated with the early Holocene. One consequence of the change in climate was the disappearance of the immediately post-glacial megafauna. Folsom sites are characterized by distinctively fluted points in association with extinct bison species. Excavated Folsom sites within the region that are associated with extinct bison include the Lindenmeier site, a campsite on the extreme northern Colorado plains (Roberts 1937), and the Linger site, a probable dune kill site in the San Luis Valley. Although no Folsom sites have been recorded in southeastern Colorado, numerous isolated projectile points have been recorded in this area.

Plano. The Plano Period, 10,200 to 7,500 B.P., includes several complexes characterized by different lanceolot projectile-point styles. It is thought to reflect a cultural continuum with adaptive modifications in tool variability based on the sequences at the Hell Gap site in eastern Wyoming (Irwin 1971:48, 52-54). An increasingly complex lifestyle is documented during this time period, as indicated by the presence of a tool kit that includes a variety of stone and bone tools, and more types of kill, processing, and camp sites. Evidence of Plano occupation in the Southern and Northern Plains provinces is plentiful though few intact sites are known. There are Paleoindian materials in Bighorn Canyon National Recreation Area.

Archaic Period

The onset of the Altithermal marks the beginning of the Archaic Stage during which a significant reorientation of lifestyle occurred (Benedict 1979:1-12). As a result of the changing climate conditions and a decrease in the large game populations, the people turned to hunting smaller game and relying more on gathering wild plants. Based on changes in projectile point morphology, the Archaic is divided into three periods: Early, Middle, and Late. Archaic projectile points are most often stemmed and are not as delicately flaked as the earlier Paleoindian points. Considerable regional differentiation can be found, but few Archaic Stage complexes are well-defined. This is a result of a highly mobile lifestyle coupled with the specialized and diversified nature of Archaic Stage tool kits used in different site settings. Bent's Old Fort contains Archaic sites.

Early Archaic Period. The Altithermal, a climatic episode of hotter and drier conditions, marks the start of the Early Archaic, 7,500 to 5,000 B.P. (Frison 1991). In response to this climatic shift, the plains may have been

partially depopulated (Wedel 1964:200) with some groups possibly relocating to the relatively cooler and wetter conditions of the higher foothills and mountains (Benedict 1979; Benedict and Olson 1978). The Early Archaic is characterized by large, shallow side-notched and some corner-notched projectile points. Early Archaic sites present in the region include Magic Mountain, LoDaiska, and Cherry Gulch in the Colorado foothills and the Mount Albion, Fourth of July, and Albion Boardinghouse sites in the high mountains in and/near Rocky Mountain National Park. (Benedict 1975, 1981; Benedict and Olson 1978; Irwin and Irwin 1959; Irwin-Williams and Irwin 1966; Nelson 1981). In southeastern Colorado, Early Archaic points have been reported from nine sites in the Apishapa Highlands (Lutz and Hunt 1979:133).

Middle Archaic Period. The Middle Archaic, 5,000 to 3,000 B.P., represents continued changes with groups moving onto the plains and the interior montane basins. Frison (1991) suggests that these groups followed a carefully calculated schedule of seasonal food exploitation. Characteristic artifacts of this period include points such as McKean, Duncan, Hanna, and Mallory types and formalized manos and grinding slabs along with various retouched flaked tools. Features include large hearths and possibly lined floors. The distinctive McKean culture of the Middle Archaic have been identified at many rock shelters in the Colorado Front Range. In the Northern Plains province Middle Archaic materials have been recovered from Little Bighorn Battlefield National Monument (Fig. 16) and Bighorn Canyon National Recreation Area. In southeastern Colorado only one site, Draper Cave (Hagar 1976), has been excavated. This site contained McKean, Duncan, and Hanna style projectile points. Additional surface projectile points, diagnostic of the Middle Archaic, have been recovered in the region.

In the eastern Southern Plains, Middle Archaic influences are quite definite. Phases such as the Grove and pre-ceramic Fourche Maline of Oklahoma and the Carrollton and Elam of north-central Texas occupy a border position between the eastern Woodlands and the Great Plains.

Late Archaic Period. The Late Archaic Period dates between 3,000 and 1,700 years ago, although the archaic lifestyle persisted much later. Diagnostic projectile points are large and exhibit corner notches. Sites are found in canyons on the Chaquagua Plateau and in Colorado Front Range rock shelters. An increase in the amount of ground and pecked stone is noticed.

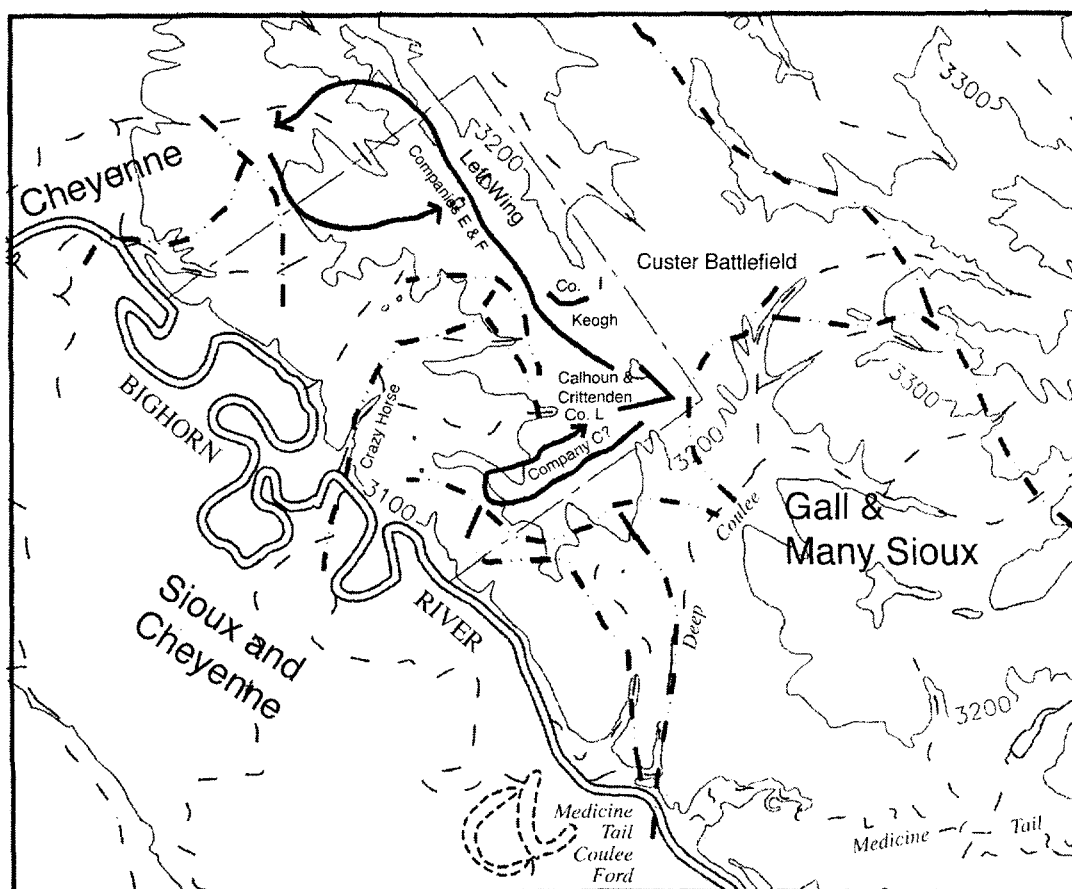


Figure 16. Interpretation of the movements along the Custer Ridge Extension. Little Bighorn Battlefield National Monument. (Bold lines show cavalry movements.)

Ceramic Stage/Late Prehistoric

The Ceramic Stage is characterized by the appearance of the bow and arrow, ceramics, and horticulture. Each of these technologies appeared first during the Plains Woodland Period. Neither ceramics nor horticulture were ever dominant traits in the cultures of the Great Plains Province. In southeastern Colorado, three distinct periods are assigned to the Ceramic Stage: Plains Woodland, 1,700 to 900 B.P., Late Prehistoric 1,100 to 900 B.P., and Protohistoric/Historic, 400 to 150 B.P. An increase in artifact assemblage variability has permitted the identification of several locally diverse groups for each period.

Plains Woodland/Early Ceramic Period. Around 1,800 B.P., mountain glaciation resumed and major alluviation occurred on the plains. Although an archaic (hunter-forager) lifestyle persisted throughout the region, distinctive traits developed and were adopted from other cultural groups that mark the appearance of the Plains

Woodland or Early Ceramic Period (Eighmy 1984; Wood 1967). Traits associated with the Plains Woodland period includes the appearance of cord-marked pottery and small corner-notched arrow points, the widespread appearance of architecture, and perhaps some incipient agriculture. A marked increase in the number of sites dating to this time period occurs, suggesting a significant population increase or greater site visibility due to the presence of architectural remains. Woodland sites are well documented in the Northern and Southern Plains provinces. Rocky Mountain National Park contains Plains Woodland materials.

In the Southern Plains, little is known of the Plains Woodland tradition, at least in an unadulterated and relatively early form. Later phases, such as the Washita or Antelope Creek, exhibit Plains Woodland elements such as cord-roughened pottery. However, the total make-up of these phases is such that they are more easily

related in content, as well as in chronological equivalence, to the Plains Village tradition. An exception is the presence of early cord-roughened pottery that appears on the Southern Plains in northeastern New Mexico and southeastern Colorado.

Late Prehistoric Period. The Late Prehistoric Period includes those peoples who were living on the plains in a hunter-gatherer lifeway. In the Southern Plains particularly, they are not well known as the emphasis has been on the Plains Villagers, their neighbors.

In the Northern Plains, these people are identified by a series of side-notched projectile points (Fig. 17). Their economy was based upon the buffalo and they used the skin tipi. Some made ceramics (Fig. 10).

Plains Village Period

Plains Village Tradition. The Late Prehistoric Period, 900 B.P., follows the Plains Woodland period. The Plains Village pattern developed predominantly on the prairie-plains of eastern North Dakota through central Oklahoma and into the Texas Panhandle and is sometimes termed the Middle Ceramic Period. The classic Plains Village culture is characterized by a more sedentary life pattern than the earlier Plains Woodland. Sites tend to consist of villages composed of one room wattle-and-daub, square or rectangular four-post houses with a central fire pit and eastward-extended entrances. The villages are located in defensible locations adjacent to river bottoms, where the people grew corn, beans, and squash to supplement their hunting and gathering subsistence base. Diagnostic artifacts include globular cord-marked pottery, diamond-shaped beveled knives, small side-notched and unnotched arrow points, various bone and stone tools, beads, and stone elbow pipes.

The classic Plains Village pattern never fully developed on the plains of eastern Colorado; the core area is to the east. Numerous non-architectural sites in eastern Colorado are thought to represent seasonal hunting camps from the more sedentary villages further east (Wood 1971). Several Plains Village cultures (Upper Republican phase, Smoky Hill aspect, Mid-Arkansas focus, Custer phase, Washita phase, and Antelope Creek phase) may have influenced local southeastern Colorado cultures.

Apishapa Phase. The Apishapa Phase is primarily derived from the Plains Village influences/groups, whereas the Upper Purgatoire (Sopris phase) is derived

from southwestern influences. The earlier local Plains Woodland may have been absorbed into the Apishapa Phase. The Apishapa Phase on the Chaquaqua Plateau in southeastern Colorado appears as stone-enclosed sites. This phase is similar to those found in Oklahoma and Texas panhandles.

Upper Republican Aspect. The Upper Republican Aspect, 850 to 650 B.P., follows the Plains Woodland period in northern Colorado and along the Front Range, in eastern Wyoming, and western Nebraska (Wood 1971, 1990). Upper Republican is a variant of the Plains Village pattern prevalent elsewhere on the plains. Upper Republican villagers resided in central Nebraska and north central Kansas, where they grew corn, beans, squash, and sunflowers and made large round ceramic jars with cord-roughened exteriors and vertical or collared rims.

No park units in the cluster have recorded Upper Republican or Apishapa Phase materials, although sites for these peoples are in areas neighboring park units.



Figure 17. Late Prehistoric point from Bighorn Canyon NRA (actual size).

Protohistoric Period

The Protohistoric Period, 400 to 150 B.P., spans from the initial contact between the Spaniards and the Plains Indians in 1540, when the Spaniards claimed the Purgatoire River and surrounding territory, to the initiation of regular contact between the Indians of the Arkansas Valley and the Spanish colonies in New Mexico ca. 1750. This is also the Late Ceramic Period.

Dismal River Aspect. Several protohistoric archaeological complexes have been identified in the region. The Dismal River Aspect sites, located in the Northern Plains province, date between A.D. 1675 and 1725 (Gunnerson 1960:144; 1968:167, 1987:238). The Dismal River economy was based primarily on bison, deer, and beaver hunting and secondarily on the cultivation of corn and squash (Gunnerson 1960:245, 1987:238). Settlements consist of small clusters or scattered houses, which have an unprepared floor and a pole-and-earth roof supported by five center posts. Dismal River ceramics are thin, sand tempered, gray-black plain ware. Additional diagnostic artifacts of the Dismal River Aspect include triangular unnotched arrow points, plano-convex scrapers, and a variety of bone implements including scapula hoes. Euro-American trade goods include iron, brass and glass beads, iron axes and scrapers, and copper and brass conical tubular objects (Gunnerson 1969:251; Wedel



Figure 18. Mitigative excavations in the quartermaster dump, Fort Laramie National Historic Site.

1959:596). The Dismal River Aspect has been associated with Plains Apachean groups which are thought to have migrated south across the Plains, some arriving in the Southwest around A.D. 1525 (Gunnerson 1974:5). None have been found to date in parks in this cluster.

Historic Period

The division between the Ceramic Stage of the Protohistoric Period and the Historic Period is somewhat arbitrary. Generally the Historic Period begins when written records are available for a specific area. Although European people were in the region throughout the Protohistoric Period, their effect on the aboriginal peoples

within the project area was minimal until the middle eighteenth century, when contact between the European and aboriginal groups became regular.

The Historic Stage is divided into two periods, the Aboriginal Occupation Period (1750–1867) when the native peoples in the region controlled the land, and the Settlement Period (1867–1930) when Euro-Americans controlled the land.

During the middle eighteenth century, French traders successfully penetrated the Arkansas Valley. Simultaneously, the Spanish began regularly attending the trade fairs held at Pecos, Taos, and elsewhere. Fur traders joined the aboriginal trade fairs at the Knife River Indian Villages (North Dakota) and in Jackson Hole (Grand Teton National Park) with trade goods coming in from the Hudson Bay Company and the Northwest Company in St. Louis.

With this regular contact, some quantities of European goods began to occur on aboriginal sites on the Northern and Southern Plains provinces. Bent's Old Fort was established on the Santa Fe Trail to take advantage of the developing trade. In southeastern Colorado, groups of Apache and Comanche arrived from the north, while the Utes continued to seasonally exploit local resources.

For Native peoples, the Historic Period is marked by upheaval and unrest. The transmission of common European diseases to populations without any immunity resulted in many deaths and extreme social disruption. Relatively few sites can be attributed to this period. One exception are the wooden structures (wickiups and cribbed-log structures) made by Aboriginal peoples throughout the plains and mountains for shelter, a few of which have survived to the present (Fig. 12).

In the Northern Plains, Fort Laramie is tied to the military, Native peoples, important treaties, and the development of the west (Fig. 18). Little Bighorn Battlefield National Monument marks the conflict between the military and Native Americans that culminated in the Battle of the Little Bighorn. As noted in the Middle Rocky Mountain Section, Bighorn Canyon contains archeology related in the Crow Indians for this period (Fig. 19).

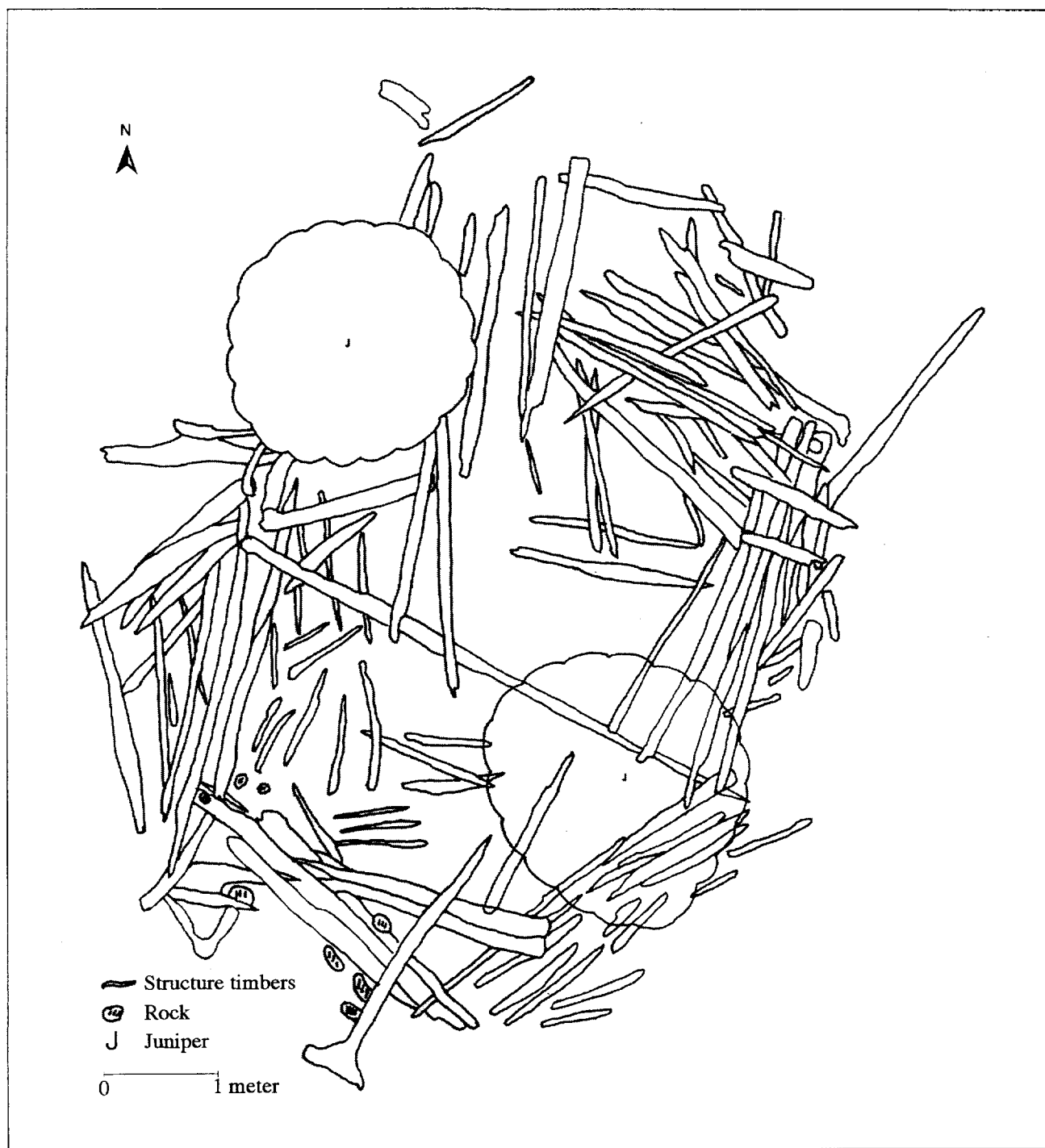


Figure 19. Bighorn Canyon has three very rare crib-construction log structures that were built by Native Americans, probably Crow Indians, in the late 18th and 19th centuries A.D. These structures were used by Northern Plains Indians for hunting, vision quests, and fortifications for war-related activities. (Plan view.)

Part III:

Archeological Database for the Cluster

This chapter presents the status of archeological overviews and resource management plans as well as the summary of the types of major archeological projects conducted at each park unit. The number of acres surveyed for cultural resources and the percent of park lands surveyed are listed. Information about number of sites recorded and whether or not the site records meet modern standards are presented, along with information about base maps and computerized site data bases. The location and status of collections are summarized. National Register properties are listed along with the titles of the proposed survey projects.

Overviews

Archeological overviews are available for all parks in the Rocky Mountain Cluster, although they need to be updated for Glacier and Yellowstone. Until very recently, little was known about the archeology of Fort Laramie. Although overview is essential for understanding the archeology of a park area, there often are other documents or reports available that can substitute for the overview. An example would be a report summarizing a complete survey of a small park unit, for example, the report by Scott and Fox (1987) available for Little Bighorn Battlefield. Overviews prepared for other agencies can also serve in this capacity if no formal National Park Service overview exists; *The Prehistory of the Custer National Forest* (Beckes and Keyser 1983) is relevant to Devils Tower National Monument and Bighorn Canyon National Recreation Area. Few project statements in the Rocky Mountain Cluster resource management plans call for overviews because these have already been completed. With limited baseline data available for many parks, the priority in this region is

archeological inventory, with documentation and evaluation of archeological sites, in order to better understand the parks' archeological histories and resources.

Resource Management Plans

The current emphasis on updating resource management plans has been a bonus for the Rocky Mountain Cluster Inventory Plan. There are 14 plans in final form. Grand Teton and John D. Rockefeller are combined in one plan.

Previous Archeological Projects

Archeological projects have been conducted at every park unit in the cluster (Table III:1). These vary from intensive, systematic surveys to small clearance surveys, reconnaissance projects with unknown survey coverage, to mitigation to recover information that would otherwise be lost (Figs. 15 and 18).

Projects range from Section 106 inventory surveys to testing, excavation, and mitigation projects; surface collection; submerged surveys (Fig. 14); monitoring projects; remote sensing (Fig. 20); and additional research orientated projects. Table III:1 gives a general idea of the level of archeological activity in each park unit.

Acres and Percent of Park Surveyed

Reconnaissance surveys have been conducted throughout the cluster from as early as the 1880s. Intensive archeological inventory survey in the modern sense became the norm after the environmental legislation and

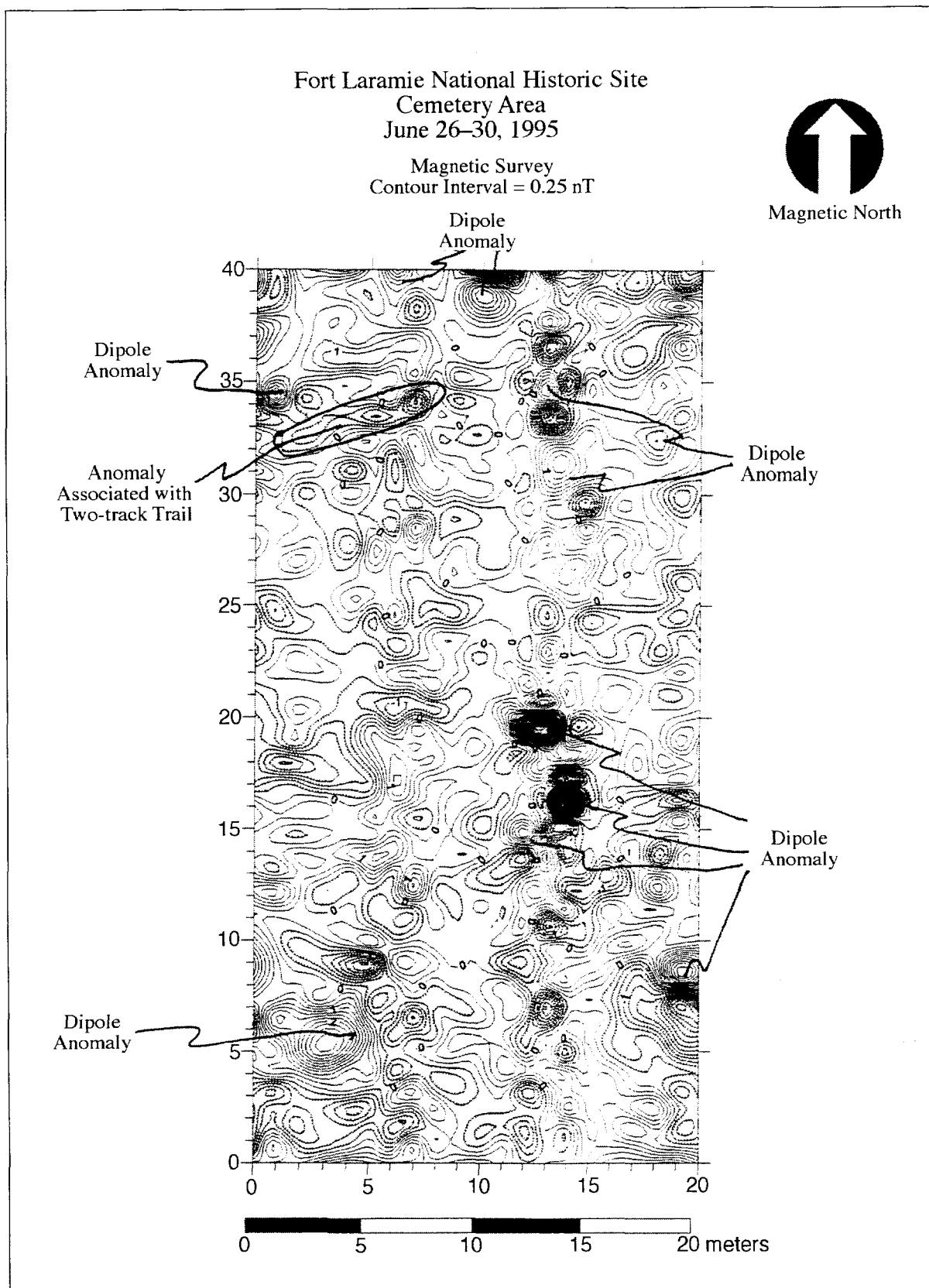


Figure 20. Remote sensing data from the cemetery, Fort Laramie National Historic Site.

Table III:1. Percentage surveyed of park units.

Percent of Park Surveyed	Number	Park Units
100	3	BEOL, DETO, LIBI
50-94	3	BICA, BLCA, GRKO
40-49	1	FOLA
6-7	2	CURE, GRTE
3-4	1	GRSA
2	1	ROMO
Less than 1	4	FLFO, GLAC, JODR, YELL

historic preservation legislation of the 1960s and 1970s. For the most part, surveys undertaken after 1975 meet current management needs. Only 3 of the 15 park units have been completely surveyed to modern standards. Three parks have estimated survey coverage of between 50 and 94 percent, two park units have coverage of between 25 and 49 percent, and eight have survey coverage estimated at 11 percent or less. Survey coverage becomes a crucial issue when establishing regionwide survey strategies and priorities, as discussed later in this plan.

Archeological Sites Recorded and Condition of Site Records

Archeological sites are documented in every park in the Rocky Mountain Cluster. There are more than 2,382 documented sites, which make up 4 percent of the total 60,000 known for the entire National Park Service. The state of the site records is quite variable and our best guess is that only 25 percent of the sites have records that meet modern standards of recording—after 1975 or thereabouts.

Many of the sites were recorded during earlier reconnaissance surveys. During these projects, researchers were more apt to look where they believed sites to be located than they were to cover 100 percent of the terrain. There are often only a few lines of description and often there are no topographic map plots of site locations. Nevertheless, the number of sites known is quite impressive. Relocating and rerecording sites with poor records is incorporated into systematic surveys undertaken under the Systemwide Archeological Inventory Program. It has been shown that systematic surveys of areas previously covered by reconnaissance survey lead to the discovery

of new sites which may have been overlooked by earlier surveyors focused on locating large and impressive sites.

Table III:2 lists the number of sites recorded in each park unit and the condition of the site records. If known, it is noted whether in-house National Park Service forms or official state forms are known to exist. In the states of Colorado, Montana, and Wyoming, the State Historic Preservation Office requires specific state site forms that must accompany any compliance-related correspondence.

Base Maps

The status of sites plotted on topographic base maps is given for each park unit in Table III:2. Overall, the base maps at each park unit correspond with those at the Midwest Archeological Center and are in good order.

Site Data Bases

Each park unit has its own site data base, and copies reside at the Midwest Archeological Center and Rocky Mountain Support Office. The status of each unit in these data bases is shown in Table III:2. Archeological data from only a few parks are officially in the Archeological Sites Management Information System (ASMIS) data base.

Artifact Locations and Storage Conditions

Whether artifacts are conserved and stored for each RMC unit is tallied in Table III:2. The storage location of artifacts collected by archeological projects is listed for each park unit in its Cultural Sites Inventory. The majority of the park units in Rocky Mountain Cluster retain their own collections and these materials may or may not be catalogued in Automated National Catalog System at the present time. Some collections are curated at the Midwest Archeological Center and non-National Park Service facilities and their conditions relative to the Automated National Catalog System are unknown.

National Register of Historic Places

National Register properties are listed for each of the park units in the Rocky Mountain Cluster. Of the 15 park units, 4 are listed on the National Register in their entirety: Bent's Old Fort, Fort Laramie, Grant Kohrs, and

Table III:2. Recorded sites and site records of Rocky Mountain Cluster park units.

Park Unit	Number of Sites in CSI ¹	Estimated Number of Sites	Overview and Assessment	Site Forms	CSI	ANCS	Artifact Conservation and Storage	Base Maps
BEOL	8	8	1997	yes	yes	yes	yes	yes
BICA	187	112,876	1996	yes	yes	yes	yes	yes
BLCA	42	100	1995	yes	yes	yes	yes	yes
CURE	221	32,054	1998	yes	yes	yes	yes	yes
DETO	58	58	1992	yes	yes	yes	yes	yes
FLFO	21	2,254	1998	yes	yes	yes	yes	yes
FOLA	10	10	1989	yes	yes	yes	yes	yes
GLAC	404	37,597	1993	yes	yes	yes	yes	yes
GRKO	21	21	1989	yes	yes	yes	yes	yes
GRSA	43	990	1991	yes	yes	yes	yes	yes
GRTE3	385	565	1992	yes	yes	yes	yes	yes
JODR	15	2,533	1987	yes	yes	yes	yes	yes
LIBI	10	10	1992	yes	yes	yes	yes	yes
ROMO	150	4,749	1995	yes	yes	yes	yes	yes
YELL	807	295,813	1997	yes	yes	yes	yes	yes
TOTAL	2,382	483,610	---	---	---	---	---	---

¹ The first three columns of data are current as of September 4, 1997.

Little Bighorn Battlefield. Only Bent's Old Fort, Little Bighorn Battlefield, and Devils Tower have been surveyed at 100 percent intensity to modern standards.

There are only 85 archeological properties on the National Register in the cluster, although many others are eligible for nomination. The lack of nominations is a major deficiency in the archeological program. There are four individually listed archeological sites: two at Bighorn Canyon, two at Rocky Mountain, one archeological district in Curecanti which contains more than 81 separate archeological sites, and one archeological National Historic Landmark, Obsidian Cliff in Yellowstone. The number of sites that have been formally determined eligible for the National Register through concurrence determinations with the various State Historic Preservation Offices is unknown; each park keeps its own records in this regard.

Underwater Projects

Underwater archeology is identified separately due to the special expertise and equipment that are needed for such projects. Reconnaissance-level investigations by the Submerged Cultural Resource Unit (SCRU) staff at

Bighorn Canyon, Rocky Mountain, and Grand Teton indicate potential submerged pre-contact and historic archeological sites in park lakes. Initial investigations would involve interviewing park personnel and knowledgeable locals for potential areas of interest; visual investigation and survey by SCRU archeologists and photographers, using Diver Propulsion Vehicles (DPVs); and selected core sampling of high-probability areas. The most cost-effective way to complete reconnaissance of these parks is for SCRU to spend approximately 7 to 10 days at each park in conjunction with another project. The cost would be approximately \$7,000 per park, assuming parks provided logistical support.

In 1996, SCRU conducted assessments of underwater resources in Yellowstone and Glacier (Fig. 21). This work located docks, historic artifacts, and a variety of boats and barges. Further work includes the possibility of investigating submerged prehistoric materials. A detailed list of projects is identified in the parks' resource management plans and could be completed by two archeologists and a photographer in approximately 2 to 3 weeks at an estimated cost of \$12,000 per park, assuming park logistical support.

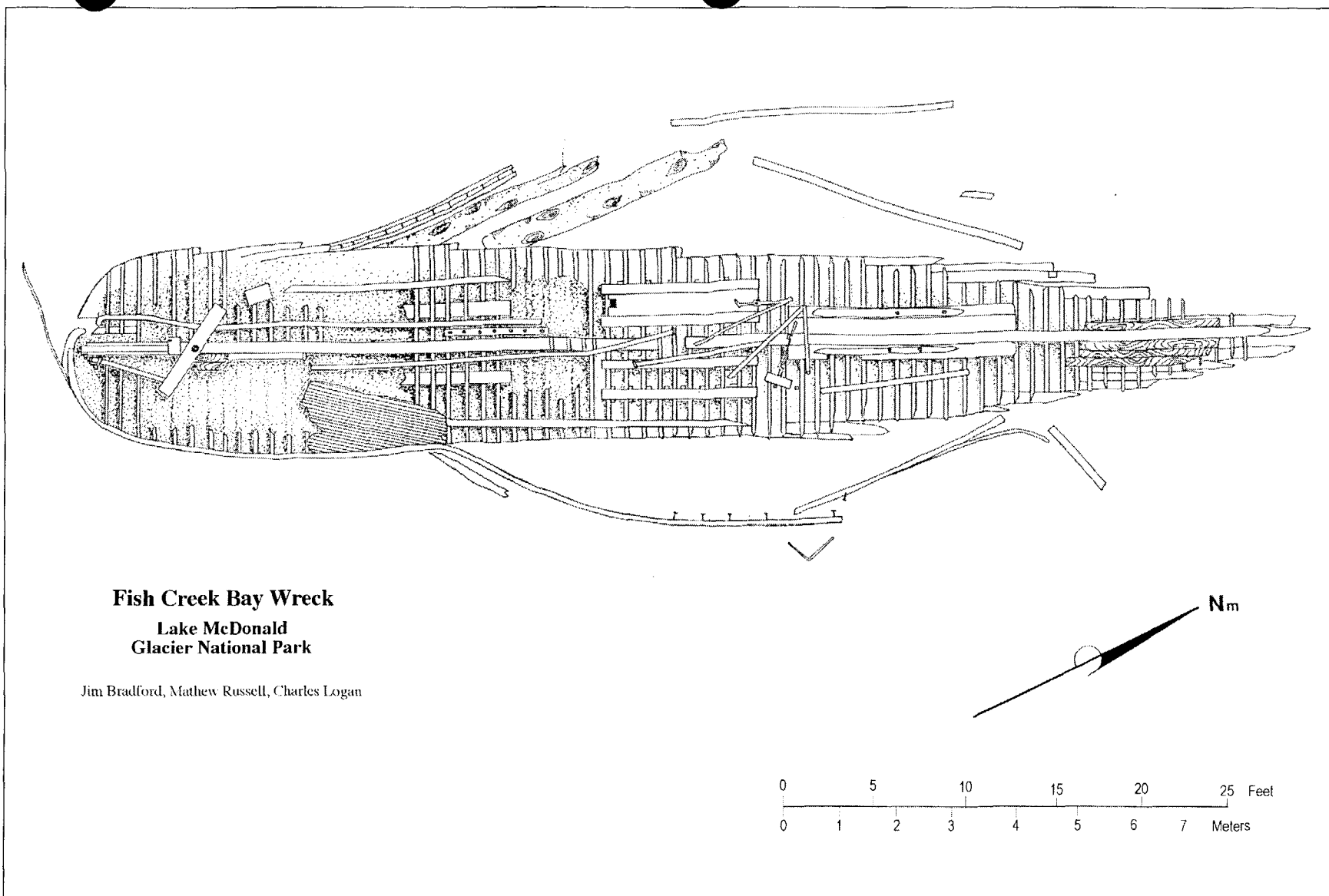


Figure 21. Fish Creek Bay wreck, Glacier National Park.

Historical Archeology

Four parks (Bent's Old Fort, Fort Laramie, Grant Kohrs, and Little Bighorn) have significant historic archeology relating to those events the parks commemorate (Fig. 7). *History and Prehistory in the National Park System and the National Historic Landmarks Program* (NPS 1987) identifies themes represented by national park units and national historic landmarks and should be consulted when evaluating park historic archeology sites. Natural parks also often have important historic archeological remains from developments before the area became a park and from management of the park area (Fig. 22). The historic archeology needs to be considered during planning for any archeological inventory.

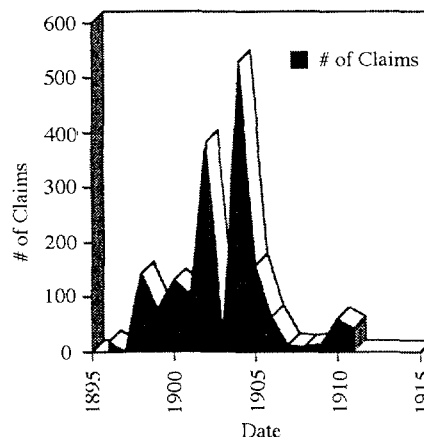


Figure 22. Number of East Glacier mining claims by year. Glacier National Park.

Proposed Project Statements

The Rocky Mountain Cluster is fortunate, and fairly unique, to have fairly current archeological overviews and assessments for every park. Through a concerted effort, these parkwide databases and assessments have been developed and updated as circumstances warranted. Park overviews and assessments have been developed in conjunction with computerization of all known archeological information into the current National Park Service database and preparation of park base maps. These latter not only document site location and size/shape if known, but also document the areas and the reliability of inventories, and are keyed to the appropriate reference(s) for any

given area. Where a park has an active geographic information system, these archeological data are incorporated into that system.

This information results in a good understanding of archeological data deficiencies and serves as a starting point for development of parkwide and project-specific research designs. In addition, the cluster parks do not have backlog projects that need to be addressed through the Systemwide Archeological Inventory Program.

Based upon the level of knowledge and understanding of the archeological resources, the highest need in the Systemwide Archeological Inventory Program (Table III:3) is for park inventory with site documentation and National Register evaluation/nomination.

Table III:3. Types of Systemwide Archeological Inventory Program projects.

Inventory, Site Evaluation, and National Register Documentation: This type of effort includes limited testing for geochronological control of the data, for site evaluation, and for the development of archeological contexts in unusual conditions.

National Register Evaluation, Documentation, and Listing: These projects are for areas where the resources have been inventoried and their significance is generally understood, and where it would be an important management tool to have a group of sites/district listed on the National Register of Historic Places. It may or may not include limited testing.

Special Emphasis Projects: Many parks have distinctive and fairly unique resources, such as specific types of structures, remote sensing applications, roasting pits, and underwater resources. These warrant special types of documentation and investigative efforts. These are of high priority if they lead to better understanding of the resources or are anticipatory to long-term preservation efforts.

Research for Interpretive Information: These types of projects are oriented towards enhancing understanding and visitor appreciation of park archeological resources. Most projects will involve limited testing using specific, research-driven questions geared to provide additional data or to refine our understanding of specific resources. They may include inventory of a new area scheduled for interpretation or to discover new types of sites/data.

Part IV: Clusterwide Strategies for Archeological Survey and Highest Priority Projects (Five-Year Plan)

The park units of the cluster are remarkably diverse in size and type of cultural remains. However, in an attempt to insure that all parks receive the type of investigation required and to insure that the data resulting from the projects provide parks with useful management information and "tools" to use in management of their archeological resources, a programmatic approach to work throughout the region has been developed (Table IV:1). Following consideration of these factors, the highest priority cluster parks for inventory are listed in Table IV:2.

Cluster Standards

In addition to the servicewide standards that are to be followed for any SAIP project, detailed in the National SAIP Plan (Aubry et al. 1992), there are several cluster standards that should be incorporated into all projects in order to insure that parks get the information they need to effectively manage their archeological resources.

1. Park databases will meet the systemwide Archeological Site Information Management System (ASMIS) data standards, and all data will be incorporated into park GIS systems as appropriate. This includes both archeological site data and parkwide archeological base maps as delineated elsewhere in this document.
2. Prior to development of any Systemwide Archeological Inventory Project, there will be an evaluation of park management needs for a) resource information (Fig. 17), b) resource protection, and c) resource interpretation. Results are to be built into the project and should include management tools, such as updated computerized database and revised base maps, as well

as preparation of final synthetic reports that specifically address the research questions posed prior to initiation of the project.

3. For each project there will be a research design that details a) research questions (areas to be investigated), b) methods to be used in accomplishing the work, and c) products that will result from the work. The latter should include more than a final, synthetic report and associated annual reports. They should include specific maps, brochures, and curatorial and other databases that will result from the project. Each park should receive the data set most appropriate to enabling adequate and informed site management. These could include National Register documentation and site protection plans.

In general, the following process or levels of inquiry will be utilized in developing Systemwide Archeological Inventory Program projects:

Archeological Overview and Assessment

Each park in the cluster has an archeological overview and assessment, but it is necessary to consider that status of the computerization of all available archeological site information and the development of a cross-link to the Automated National Catalog System (ANCS), if this latter becomes appropriate. All appropriate data will be incorporated into the park's geographic information system. The park overview and assessment also includes documentation of the location of various collections held by repositories both inside and outside the Service. Base

Table IV: 1. Project prioritization factors and park scoring.

Park	Pending Park Planning Effort	Actively Threatened Resources		Documented Archeological Significance			Research Arenas		Level of Information Available		Political or Strategic	Specialized Documentation Needs	
		Internal	External	Enact Legislation	Landmark	Nat. Reg. of Historic Places	Research Important Questions	Park- Specific Research	Limited Data Base	Base Data Needs Clarification		Rock Art	Other Park Specific Needs ¹
BEOL				X		X							
BICA	X	X					X	X		X	X		X
BLCA	X									X			
CURE		X	X	X		X	X	X					X
DETO	X							X					
FLFO								X	X				
FOLA	X	X		X	X	X		X	X				X
GLAC	X	X					X	X		X	X		X
GRKO				X	X	X		X					
GRSA		X	X				X	X	X	X	X		
GRTE	X		X				X	X	X		X		X
JODR							X		X				
LIBI	X		X	X		X	X	X			X		
ROMO	X	X					X	X	X	X			X
YELL	X	X			X		X	X	X	X	X		X

¹Includes underwater projects at BICA, GLAC, GRTE, ROMO, and YELL.

Table IV:2. Ordered cluster project priorities.

Park	Projects	Justification for Priority
GLAC	Archeological inventory; site evaluation; National Register nominations	Scant resource information; pending major General Management Plan effort; ongoing traditional use
ROMO	Archeological inventory; site evaluation, National Register nominations	Scant information; pending General Management Plan update; resource impacts; vandalism; developed areas do not have inventory; outside threats
YELL	Archeological inventory; site evaluation; National Register nominations	Scant information for much of park; multiple planning projects; visitor impacts and natural degradation; archeological National Historic Landmarks; most developed areas do not have inventory
GRSA	Archeological inventory; site evaluation; National Register nominations	Scant information about much of the park; resource impacts and outside threats; vandalism
BICA	Site documentation; National Register evaluation and nominations	Database out of date; few National Register evaluations, nominations needed; impacts unknown
FOLA	Remote sensing/inventory; National Register evaluation and nominations	Little information about subsurface resources
GRTE	Site documentation; National Register evaluation and nominations	Database out of date and not to standard; few National Register evaluations, nominations needed; impacts unknown

maps will be updated showing site sizes and locations, the areas surveyed, and reliability of the survey data. This information will be designed to be compatible with whatever format(s) the park uses and wishes to have available.

Archeological Inventory and Site Evaluation

Depending upon the reliability, quality, and quantity of archeological data available for each park, SAIP projects will be designed to address area inventory, National Register evaluation, and documentation needs before getting into special studies. As an aid in developing research designs for these efforts, the Rocky Mountain Cluster has been grouped into several distinct cultural and environmental areas (as described above). These areas each have several park units that contain similar cultural resources which can complement each other in both research designs and methodological approaches. Each park has an archeological overview and assessment available to provide data for development of a research design. These, especially those incorporated into park geographic information systems, form the basis for

development of sampling strategies and investigation into appropriate testing needs.

Ideally, all areas of all park units should be surveyed. However, 100 percent survey coverage for all parks within the cluster in the near future is not feasible logistically or economically. This is not to say that it is not unrealistic in the decades or centuries to come. However, the impracticality of such a task is recognized. Lack of good baseline data for a park might be solved simply by the development and implementation of a sample survey. The resultant data would then be used to develop a predictive model that can then be tested to evaluate the need for additional surveys in the park. The percentage of survey coverage for each park unit will be guided by a number of factors and is expected to change through time due to research goals and funding initiatives. Two of the most important factors are the significance of the archeological resources in the park unit and management considerations as developed in each park unit's resource management plan. Visitor use and natural threats to the sites also play a role in the amount of survey needed.

Documentation of site significance and listing in the National Register of Historic Places are vital to long term site preservation as well as to acquisition of money to

support site management and protection. National Register listings are a logical result of SAIP inventory projects.

Park-Specific Research Projects

For parks having a sufficient level of understanding of their archeological data base, it may be appropriate to develop problem-specific investigations that focus on specific information or documentation needs. These should be projects such as documentation of roasting pits or Quaternary resources, detailed documentation of prehistoric structures as a vehicle for providing increased interpretive information, and development of detailed geochronological control within a given park. These projects could conceivably be documentation leading to long term preservation of major sites or clusters of sites.

Backlog Projects

It may be appropriate to develop a project to clean-up long overdue or postponed projects for which inadequate funding or loss of funding did not permit completion. At this writing, the Rocky Mountain cluster does not have any such projects.

Political or Strategic Interests

It is recognized that there may be political or strategic interests which would raise the need for archeological data.

Part V:

Proposed Projects and Cluster Management Priorities

Cluster Inventory Goals

The overall survey goals in the cluster are to: 1) inventory small (less than 10,000 acres) parks at 100 percent; 2) survey development areas in all parks at 100 percent; and 3) sample enough of large parks to be able to describe the time periods and cultural groups relative to the different environmental zones in each of these parks. These goals are influenced by management priority setting.

Management Priority Factors

Systemwide Archeological Inventory Program Priority Factors are neither weighted nor listed in a particular priority order. The seven management priority factors are:

1. Schedules for inventory are coordinated with schedules for development or revision of park planning documents (General Management Plan, Management Plan, Development Concept Plan, Interpretive Prospectus). The inventory should precede the planning effort by enough time so that the archeological data and reports are available for the planners.
2. Park areas that have suffered from, or are likely to be threatened by, the destructive effects of natural processes or human activities are assigned a high priority for archeological inventory.
3. Development zones and special use zones within a park should be assigned a high priority for archeological inventory.
4. Historic zones within parks and entire park units that by statute are automatically listed in the National Register of Historic Places, are National Historic

Landmarks, or have World Heritage listing because of their archeological or historical importance, should be assigned a high priority for archeological inventory.

5. Archeological inventory projects that address research questions, problems, topics, priorities of state, regional, or national importance should be assigned a high priority.
6. Park areas lacking virtually any information about presence or absence of archeological resources should be assigned a high priority for preparation of informed Archeological Overview and Assessment.
7. The priority of an archeological inventory project should include the potential presence of archeological resources and the likelihood of being able to locate or discover archeological resources.

In addition to these priority factors, it is of utmost important that once a National Archeological Systemwide Inventory project has been initiated that funding be provided for its successful completion. A second special consideration would be projects that are politically or strategically sensitive.

Classifying the Rocky Mountain Cluster Projects

Priority setting for the next five years (1997–2001) of project funding in the Rocky Mountain Cluster is based on a number of factors related to both archeological and management issues (see Table 4:1). The top projects for funding focused upon seven parks that have minimal databases, and impacts and/or pending planning efforts,

Table V:1. Requirements of the Systemwide Archeological Inventory Program for archeological activities in National Park Service units.

Requirement	Description
1	Archeological inventory activities are focused within the National Park Service areas.
2	Archeological inventory activities are focused on systematic research to locate, identify, evaluate, and document archeological resources.
3	As appropriate, the full sequence of necessary activities are planned, programmed, and undertaken in an archeological inventory project.
4	All appropriate and available National Park Service and non-National Park Service sources of funds, equipment, services, and personnel are used to undertake archeological inventories and to develop regionwide archeological survey plans.

and political and outside pressures. In the future, projects may rise to the top of the cluster priority list because of threats to cultural resources, new park or land acquisitions, or other strategic or management concerns. It is assumed that after five years or completion of these projects the entire list of park will be reevaluated. Prioritization is a dynamic process over the life of Systemwide Archeological Inventory Program. The priority factors listed above can indicate the importance of specific projects. Project statements themselves may be rewritten or take on a new focus. New project statements may be added.

Requirements and Standards of the Systemwide Archeological Inventory Program

To achieve the archeological research goals and objectives, the Systemwide Archeological Inventory Program has established minimum requirements and standards (see Tables V:1 and V:2), and priorities (see Management Priority Factors listed). By delineating these requirements and standards the Systemwide Archeological Inventory Program further emphasizes systematic, scientific research to locate, evaluate, and document archeological resources within National Park Service units.

Requirements 1, 2, and 4 (Table V:1) need little explanation. The "full sequence" in Requirement 3 means the activities for projects as identified in NPS-28. Thus, when a project is planned, activities would include, as appropriate, consulting and coordinating with appro-

priate NPS and non-NPS parties, preparing research designs for field studies, stabilizing and preparing archeological collections for storage, preparing National Register of Historic Places nominations for eligible archeological resources, and making project results available to park managers, planners, interpreters, other appropriate NPS specialists, and the professional community and public.

Research Priorities

Research on cultural resources within the National Park System shall be mission-oriented, supporting their preservation, development, interpretation, and management. When conducting archeological inventories, research questions as well as management priorities and criteria must be addressed. Research domains must be directed at information gaps that exist within each park unit and across the region as a whole. By incorporating the Systemwide Archeological Inventory Program, the cluster has chosen a standardized inventory process so as to elicit archeological information from all park units that will uniformly address information gaps and use standardized data gathering methods. The standard inventory strategy provides a priority guideline for archeological inventory objectives, research methods, and applicable tools that will maximize the archeological information for the individual parks and for the cluster. This strategic guideline is not intended to replace previous archeological inventory requirements. In fact, its intent is to provide a direction for the research aspect of the otherwise management-oriented archeological inventory. The current archeological information base of the Rocky

Table V:2. Standards of the Systemwide Archeological Inventory Program for archeological activities conducted in National Park Service units.

Standard	Description
1	Archeological inventory projects meet the requirements of the NPS policies, guidelines, and standards.
2	Archeological inventory projects are conducted in accordance with a written, fully professional research design, approved by the regional office.
3	Archeological inventory projects are conducted using efficient and effective advanced technologies.
4	Archeological inventory projects are developed and implemented in cooperation with the appropriate State Historic Preservation Officers.
5	Archeological inventory projects are developed and implemented in consultation with appropriate Indian tribes and other contemporary native groups and ethnic populations.
6	Since evidence of past cultural systems extend beyond the boundaries of federally-owned or controlled lands and waters in NPS areas, whenever possible, archeological inventory projects collect and consider data from non-Federal lands and waters with park areas as well as from adjoining lands and waters.
7	Development and implementation of archeological inventory projects involve non-NPS archeologists and other specialists who have a demonstrated competence in a particular culture, geographic region, park area, or advanced technology.
8	Data collected during archeological inventory projects are provided to park planners for incorporation, as appropriate, into park planning documents, and to park managers for resource management, law enforcement, interpretation, maintenance, and other park operational purposes.
9	Archeological data collected during inventory projects are incorporated into Servicewide inventories, lists, catalogs, and databases.
10	The results of archeological inventory projects are made available, as appropriate, to the professional community and to the public.

Mountain Cluster does not uniformly meet these standards.

Research Domains and Information Gaps

Past archeological inventories have delineated research domains and information gaps in the archeological information base. Specific geographical, cultural, and period gaps exist. The following general research areas apply at the local and regional levels:

1. Paleoenvironment
 2. Cultural chronologies, point topology and chronology
 3. Expanding populations
 4. Subsistence
 5. Seasons of site use and settlement patterns
 6. Technology
 7. Structures, their function and architectural attributes.
- The following list of research topics should be

considered in virtually all archeological inventory surveys:

1. Chronometric dates are needed to answer questions about all research questions
2. Cultural, projectile point, and ceramic taxonomies may be investigated by stratigraphic or single component excavations, taxonomic studies, archeological context studies
3. Demographic trends and variation
4. Lithic source identification, utilization, and distribution
5. Settlement, subsistence, and seasonality of sites and differences within each period or culture
6. Site formation, transformation, and abandonment and destruction
7. Paleoenvironment, and climatic conditions may be studied by environmental reconstruction

Research Designs

The Systemwide Archeological Inventory Program promotes flexible research designs to accommodate different park situations; geographical settings, archeological resource types, known archeological data, and individual park needs, as well as significant research problems or questions, trends, patterns, or themes about a park or region's prehistory and history.

Data gaps and research questions identified in the particular State Historic Preservation Plan should be included in the project research design. *History and Prehistory in the National Park System and the National Historic Landmarks Program* (NPS 1987) identifies themes represented by National Park units and National Historic Landmarks and should be consulted when preparing research designs.

The following research areas should be used to meet these requirements and standards.

1. Stabilization and condition assessments
2. Environmental reconstruction
3. Cultural chronology
4. Rock art
5. Ceramic petrography
6. Artifact assessment
7. Submerged cultural resources
8. Geoarcheology/geomorphological studies
9. Tribal consultation
10. Cultural processes

In addition, the following technical methods should be considered where appropriate:

1. Dating: Archeomagnetic, radiocarbon, dendrochronology, obsidian hydration, patination analysis, osteometric analysis
2. Stable carbon isotope analysis
3. Pollen sampling
4. Faunal analysis
5. Geographic information systems
6. Global positioning systems
7. Direct/Remote sensing: high resolution photography, digital photography, ground-penetrating radar, and other geophysical tools (Fig. 18)
8. Quantitative analyses
9. Culture processes

Rock Art

Rock art is especially sensitive to environmental and human impacts and is specifically identified in the NASI document (Aubry et al. 1992). Although, rock art is

infrequently identified in the cluster, this does not make it less important. Due to its rarity, it should be handled on a case-by-case basis.

Tribal Consultation

The National Park Service is required by various federal laws, regulations, policies, and management directives to consult with Native American tribes in decisions regarding planning, interpreting, and managing park resources. An Indian Tribe is defined in Section 301(4) of the National Historic Preservation Act (1966), as amended and in the regulations of 36 CFR 800.2(g). The reasons for consultation as outlined by the *Rocky Mountain Consultation Guidelines and Directory* (Ruppert 1994) include:

1. The NPS manages lands that contain cultural and natural resources essential to the American Indian lifeways and cultural survival;
2. The NPS maintains in storage, and has on public display, collections of archeological and ethnographic items important to their lifeways and ethnic heritage;
3. The NPS annually interprets to millions of Americans and foreign visitors both the past and present lifeways of American Indians and thereby incur a very special responsibility to be factually informed, culturally unbiased, and sensitive in our presentations; and
4. Due to the recently enacted Native American Graves Protection and Repatriation Act of 1990... (P.L. 101-601). Compliance with this act will require that most parks consult with American Indian governmental leaders, and later, at the direction of these leaders, to consult with both secular and religious leaders of tribes.

Ethnographic research related to archeological sites within a inventory project area may help establish eligibility of the site or district for the National Register of Historic Places. A reasonable effort in identifying traditional cultural properties requires consultation of those who would ascribe cultural affiliation with sites and districts within the inventory area (Parker and King n.d.:6) Native American or other locals who have special interest and knowledge about a given area under investigation may be a resource to consult in regards to establishing significance of a site or district. Parties may regard a site or district significant due to its affiliation to religious or cultural practices, historical events, or important person.

Published and unpublished source material regarding

Table V:3. Native American groups/tribes with affiliations with Rocky Mountain Cluster Park units.

Native American Group/Tribe	Number	Park Units
Ute/Paiute	6	BEOL, BLCA, CURE, FLFO, GRSA, ROMO
Gros Ventres	1	GLAC
Flathead	3	DETO, GLAC, GRKO
Shoshone	6	BICA, DETO, FOLA, GRTE, ROMO, YELL
Nez Perce	1	YELL
Crow	6	BICA, DETO, FOLA, GRTE, LIBI, YELL
Northern Cheyenne	6	BICA, DETO, FOLA, GRTE, LIBI, YELL
Blackfeet	3	DETO, GLAC, YELL
Kootenai	3	DETO, GLAC, GRKO
Kiowa	1	DETO
Sioux	3	DETO, FOLA, LIBI
Northern Arapaho	6	BICA, DETO, FOLA, GRTE, ROMO, YELL
Southern Cheyenne	1	BEOL
Cree	1	GLAC
Chippewa	2	DETO, GLAC
Assiniboine	1	GLAC
Canadian Groups (Cree, Blood, Piegan, Tobacco Valley Kootenai, Probably Others)	2	DETO, GLAC

the sites or districts should also be researched exhaustively. Refer to *National Register Bulletin 38: Guidelines for Evaluating and Documenting Traditional Cultural Properties* (Parker and King n.d.) for step-by-step instructions.

Although not necessarily required for all archeological inventories, the potential through consultation for additional information, insight, and understanding of archeological phenomena is good. The Native American groups and tribes which have specific interest in park units may be found in Table V:3.

Cross-Consultation

Standard 7 of the Systemwide Archeological Inventory Program states: "development and implementation of archeological inventory projects involve non-NPS archeologists and other specialists who have a demonstrated competence in a particular culture, geographic region, park area, or advanced technology" (Aubry et al. 1992: 10). The Systemwide Archeological Inventory Program promotes such interaction for its benefits,

including validation of field strategies/research priorities and the acquisition of new approaches, methods, and the utilization of equipment towards research questions/problems. This approach allows for a more complete, cost-effective archeological product.

National Register of Historic Places

Federal agencies are required to inventory evaluation and nominate eligible properties to the National Register of Historic Places (Systemwide Archeological Inventory Program Priority Factor 4) and project classification (Classification Description XI). The National Register of Historic Places is a management tool for the identification of important properties, their documentation, and statements about why they are important. Information may be gained by reviewing documentation for sites placed on the National Register. The National Register of Historic Places' forms should be examined and utilized as a starting point for research of proposed sites or of the same site types.

Research Methods and Technology

The Systemwide Archeological Inventory Program's Standard 3 states "Archeological inventory projects are conducted using efficient and effective advanced technologies" (Aubry et al. 1992:9). These approaches include shovel testing, soil analysis, aerial photography, ground-penetrating radar, remotely operated vehicles, global positioning systems, geographic information

systems, and geophysical prospecting as viable archeological technologies. The projects from early archeological inventories did not utilize the same methodologies or tools. As stated above, the archeological inventory reports written before 1975 do not meet current requirements and lack important information.

VI: Summary of Archeological Resources and Needs in the Parks

The parks within the Rocky Mountain Cluster include a wide range of archeological resources, which represent thousands of years of use by Native and historic peoples, and contain valuable and irreplaceable information about our nation's prehistory and history. Following is a summary of the archeological needs and inventory in each park:

Bent's Old Fort National Historic Site (BEOL) is best known for its historic associations with fur trade along the Santa Fe Trail, but the park also includes four small archaic sites that predate its trail days by several thousand years. Bent's Old Fort has the most complete and current archeological inventory in the cluster. The park's prehistory has been 100 percent inventoried, and all sites have been recorded to standard guidelines. Recent sensing and archeological projects on the fort's cemetery and racetrack have also revealed new information on the historic uses of BEOL.

Bighorn Canyon National Recreation Area (BICA) contains the only Native American cribbed log structures within the Rocky Mountain Cluster. Built in the late 18th and early 19th century, these rare forms of log cabins were used by Northern Plains Indians (probably Crow) for hunting, winter houses, and as fortifications for war and raiding activities. Bighorn Canyon National Recreation Area also includes significant examples of vision quest structures and rock art made by the Crow Indians. However, the park inventory is 25 years out of date, and less than 10 sites have been evaluated for the National Register. Although impacts to the park's archeological sites are assumed to be low, the full extent remains unknown.

The South Rim of *Black Canyon National Monument (BLCA)* was inventoried in the late 1970s. Nearly all of

the identified sites were lithic scatters, most of which were not eligible to the National Register. Recently, land was added to the park's North Rim, where a small inventory project located additional similar lithic scatters, few of which were eligible to the National Register. Although BLCA needs additional inventory work, it is a relatively low priority within the cluster, due to the expected low importance of the sites.

Curecanti National Recreation Area (CURE) encompasses a large nationally-significant archeological district that contains 3,000- to 5,000-year-old houses. These mud-and-stick houses dramatically changed our view of the early hunter-gatherer peoples who lived in this area. Although an 18-year-long archeological project has recently been completed at CURE, much of park remains unsurveyed. In addition, hundreds of hearths and roasting pits along the banks of the reservoir are threatened by erosion and vandalism. The National Register nomination for CURE should be revised to include sites identified since 1982.

Devil's Tower National Monument (DETO) has 100 percent inventory (1997). Cataloging analysis, National Register evaluation, and report preparation will be funded in FY98. Most of the park's recorded sites were lithic scatters with limited information content because few contain the diagnostic tools that allow interpretations of activities and identification of time and culture. In addition, many of these sites have been significantly impacted by erosion. A small number of prehistoric sites within DETO may be eligible for the National Register. For most of the others, testing is required before eligibility can be determined and a nomination prepared. The tower and its talus slopes are sacred to over 10 modern tribes.

In the late 1980s and early 1990s, several small archeological projects were undertaken in *Florissant Fossil Beds National Historic Site (FLFO)*. These projects revealed lithic scatters and culturally scarred trees, and supported results of an earlier and larger but not-to-standard park inventory. The less than one percent of park inventoried (see Table VI:1) represents intensive, to standard inventory, although much of the park has been examined at the reconnaissance level. Although some of the prehistoric resources of FLFO may be locally eligible to the National Register, most sites are not eligible. However, additional work is needed on the park's historic archeological sites, which are not adequately documented.

Fort Laramie National Historic Site (FOLA) contains nationally significant archeological resources that relate to the Oregon Trail and operation of Fort Laramie by the military. The park is also important to many modern tribes. Since much of the park's surface has been disturbed by plowing and is now covered by thick grass, traditional inventory methods are often not effective at finding buried resources. Non-destructive geophysical investigations are required for planning, resource protection, and to gather data for interpretation. Documentation of pre-park homesteading is necessary.

Glacier National Park (GLAC) is completing the first SAIP project in the Rocky Mountain Cluster. Most of GLAC's high and medium priorities and some low-priority areas have been inventoried. Archeological resources within GLAC, which span the range of human occupation in the New World, include northwestern Montana's major quarry for stone tools, vision quests, bison kills, and fishing locations. The high coincidence of park-developed areas (trails, campgrounds) with prehistoric sites results in ongoing impacts to archeological resources. Archeological investigations have been limited by difficult access, ground visibility problems, and a very short survey season for some high-altitude areas (one month in late summer). Currently, the park's greatest archeological need is for a multi-year (Cultural Resource Preservation Program base) National Register evaluation and nomination project.

Most of the areas in *Grand Teton National Park (GRTE)* where sites were likely to be found were inventoried in the late 1970s, but the documentation is inadequate and out of date. In the 1980s, another multi-year project occurred during the draw-down of Jackson Lake, which allowed inventory of the pre-dam shoreline. However, condition of and impacts to sites outside of the

Jackson Lake Reservoir unknown. The park's prehistoric sites represent a wide range of plant, animal, and obsidian procurement locations, as well as camps and plant-processing features that represent more than 10,000 years of human use of Jackson Hole. The major needs are 1) to relocate previously identified sites, record them to standard, and to evaluate National Register eligibility; 2) document historical archeological sites; and 3) nominate the eligible Jackson Lake archeological district to the National Register.

Grant-Kohrs National Historic Site (GRKO) is 100 percent inventoried, except for the recent 200-acre addition to the park. All of the inventoried prehistoric sites within the park have been determined ineligible to the National Register, but several historic archeological sites should be evaluated. The park has a Cultural Sites Inventory but will need historic archeological investigations to support a cultural landscape reconstruction around the Kohrs House. The archeological resources at this park are limited.

Great Sand Dunes National Monument (GRSA) has the largest concentration of culturally scarred trees within the Intermountain Field Area. Other GRSA sites represent camps and plant procurement sites in and around the dune field. Sites in this area are impacted by on-going natural processes and visitation. However, the documentation for GRSA's archeological resources is inadequate for all but the most recently recorded sites. Based on evidence from areas adjacent to the park, archeological sites in moderate density covering almost 11,000 years are expected to be found. Vandalism and threats from activities outside the park to the stability of the dune field and thus to park resources are of concern. The dune field poses special seasonal and logistical problems for inventory.

Within the *John D. Rockefeller National Parkway (JODR)*, inventory is limited to the Snake River and the highway corridors. This inventory work was completed in the 1970s. In general, the archeological resources of JODR are almost unknown due to the extremely heavy ground cover and the lack of development projects. The dense ground cover makes it extremely difficult to find sites, but it also protects resources from erosion and vandalism. Survey work in YELL (on the north) and GRTE (on the south) suggests that the archeological resources of JODR are not as numerous, threatened, or important as in the adjacent parks.

Little Bighorn Battlefield National Site (LIBI) has a 100 percent modern inventory, including preparation of

Table VI:1. Rocky Mountain Cluster Inventory and National Register status.

Park	Acreage	Surveyed Acreage	Percent Surveyed	Recorded Sites	Sites on National Register
EOL	799.80	799.80	100	8	2
BICA	120,296.22	112,876.81	93.8	187	2
BLCA	20,755.14	16,695.45	80.4	42	0
CURE	4,211.47	290.36	6.89	221	81
DETO	1,346.00	1,000.00	74.29	58	0
FLFO	5,998.09	55.86	0.93	21	0
FOLA	832.85	400.00	48.03	10	1
GLAC	1,013,572.43	15,000.64	0.014	404	0
GRKO	1,498.36	1,348.00	89.96	21	1
GRSA	38,662.16	1,679.52	4.34	43	0
GRTE	309,994.05	19,052.80	6.15	385	0
JODR	23,777.22	140.80	0.59	15	0
LIBI	765.34	765.34	100	10	1
ROMO	265,197.86	6,143.26	2.32	150	0
YELL	2,219,790.71	4,194.75	0.0019	807	1

base maps. Most of the archeological resources relate to the Battle of the Little Bighorn. All prehistoric sites are not eligible for the National Register. The archeological work has elaborated the historic record, but has not resulted in major interpretive revisions. The park has a Cultural Sites Inventory, and several books document and interpret the modern archeological inventory.

Rocky Mountain National Park (ROMO) contains high-altitude game drives, vision quests, trails, and campsites. Although the resources are of at least regional importance and cover at least 10,000 years, they are not well understood. In addition, the extant inventory is old, and does not meet current standards or management needs. Large portions of park are remote, and have ground visibility and seasonal limitations. Many developed areas and modern trails also need inventory. Increasing visitation (up 20 percent in FY96) and site vandalism are affecting the resources.

Yellowstone National Park (YELL) has an extremely rich historic and prehistoric archeological record. The park also includes a National Historic Landmark (Archeological): Obsidian Cliff. For over 12,000 years, prehistoric people mined obsidian for tools at Obsidian Cliff, the only archeological site within the park that is listed on the National Register. Compliance-driven inventories and recent Federal Highways work along the road system have provided some information on YELL's northern half, but almost nothing is known about the southern portion. Significant impacts are resulting from erosion and visitor use. Also, most developed areas (for example, 1,200 miles of trails and 300 backcountry campsites) have not been inventoried. YELL needs a basic inventory, evaluation, and nomination project to provide information to planners and park managers. Archeology has high potential to address pressing natural resource management issues.



~ VII: The Five-Year Plan: ~

A Prioritized List of Rocky Mountain Cluster Archeology Projects

On August 20–21, 1996, a clusterwide team met in Denver to review the Rocky Mountain Cluster's Archeological Inventory Program, and to prepare a prioritized list of inventory projects. The team was composed of Gregory Kendrick (Program Leader), Ann Johnson (Archeologist, duty stationed at YELL), Steve De Vore (RMSSO archeologist), Bill Butler (ROMO archeologist), and William Wellman (Superintendent, GRSA).

The committee members classified the parks into three groups: 1) parks without adequate inventory and National Register evaluations; 2) parks that have had considerable inventory but need National Register evaluations and current data on the status of their sites; and 3) parks that have 100 percent or near-100 percent current inventory (BEOL, GRKO, LIBI). Based on these classifications, and taking additional issues such as impacts and threats to resources into consideration, the team then prioritized the parks according to their needs for archeological projects. The projects were prioritized over a 10-year period, including an estimate of funding needs. **Outyear funding will not meet the levels projected in Table VI:1**, but we thought it was important to indicate what a reasonable cluster inventory program would be. In five years, the prioritized list will be revisited. The inventories and evaluations can also be accomplished through the Cultural Resource Preservation Program base.

Glacier was the first SAIP project of the old Rocky Mountain Region and now the Rocky Mountain cluster. This project has completed all the fieldwork and is in the final writing stages. ROMO received FY97 funding to begin their SAIP project.

As can be seen in the Table VII:1 below, Rocky

Mountain National Park was selected as the cluster's highest priority for SAIP special funding because of 1) the absence of information on the park's archeological resources; as well as 2) the existing out-of-date information; 3) resources that are threatened by growing visitation and vandalism; and 4) the lack of National Register nominations for ROMO's archaeological sites.

Yellowstone National Park, which is second in the priority list, has many of the same problems as ROMO. However, some inventory and evaluation activity has occurred in recent years due to Federal Highway project funding. The extreme size of Yellowstone shaped the prioritized program projections. The YELL inventory projected in Table VII:1 will not meet all of YELL's needs. However, it is believed that this will 1) allow inventory of developed areas; 2) provide the necessary data to identify gaps, and clarify research questions and the remaining highest priority areas/needs; and 3) allow other parks an opportunity to share in the SAIP funding.

Great Sand Dunes, the third park in the priority list, is similar to ROMO and YELL in terms of absent and/or poor quality information, not much inventory, and threats to the resources. Because GRSA's archeological resources are thought to be of local and regional significance (lesser significance than ROMO and YELL; admittedly, this perception has been formed with limited data), the park has been ranked third.

BICA is prioritized higher than GRTE because there has been very little work in BICA since 1974 and multiple small projects and a large project (Jackson Lake Archeological Project) were done in GRTE during the 1980s and 1990s.

Table VII:1. Rocky Mountain Cluster Archeological Inventory prioritized program funding needs.

Park	1997 Funding Needs	1998 Funding Needs	1999 Funding Needs	2000 Funding Needs	2001 Funding Needs	2002 Funding Needs	2003 Funding Needs	2004 Funding Needs	2005 Funding Needs	2006 Funding Needs
ROMO	25,000* 80,000 req.	53,000# 110,000 req.	100,000	100,000	20,000					
YELL		100,000^	100,000	100,000	100,000	100,000	100,000			
GRSA		30,000^	80,000	80,000						
BICA					80,000	90,000	100,000	100,000		
FOLA							50,000	50,000	50,000	
GRTE							100,000	100,000	100,000	100,000
CURE								100,000	100,000	100,000
GRKO										15,000
JODR										60,000

* Represents dollar amounts, FY97 project funding approved.

FY98 funds approved.

^ Not funded

It is understood that after five years project priorities will again be examined. However, Table VII:1 was prepared in order to show cluster inventory needs and to show parks where they rank generally for this funding type.

It is important to again emphasize that the SAIP funding is inadequate to satisfy all the archeological

needs of the parks. Other fund sources (base Cultural Resource Preservation Program) and creative arrangements should be carefully examined. It is also unlikely that funding levels identified in Table VII:1 will be forthcoming but this shows what the cluster archeological needs are and what could efficiently and effectively be obligated.

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Appendix A

Acronyms for the Rocky Mountain Cluster park units.

BEOL	Bent's Old Fort National Historic Site
BICA	Bighorn Canyon National Recreation Area
BLCA	Black Canyon on the Gunnison National Monument
CURE	Curecanti National Recreation Area
DETO	Devils Tower National Monument
FLFO	Florissant Fossil Beds National Monument
FOLA	Fort Laramie National Historic Site
GLAC	Glacier National Park
GRKO	Grant-Kohrs Ranch National Historic Site
GRSA	Great Sand Dunes National Monument
GRTE	Grand Teton National Park
JODR	John D. Rockefeller, Jr. Memorial Parkway
LIBI	Little Bighorn Battlefield National Monument
ROMO	Rocky Mountain National Park
YELL	Yellowstone National Park

Appendix B

Legislation and Policies Affecting Cultural Resource Management

- 1906 Antiquities Act (34 Stat. 225) and implementing regulations, Preservation of American Antiquities (43 CFR Part 3).
- 1916 National Park Service Organic Act.
- 1935 Historic Sites Act.
- 1955 Museums Properties Management Act.
- 1960 Reservoir Salvage Act.
- 1966 National Historic Preservation Act (PL 95-515).
- 1969 National Environmental Policy Act and various amendments
- 1970 UNESCO Convention on the Means of Prohibiting and Preventing the Illicit Import, Export, and Transfer of Ownership of Cultural Property (PL 97-446, in 1983).
- 1971 Executive Order 11593.
- 1974 Amendment to the Reservoir Salvage Act (Archeological and Historic Preservation Act) [PL 93-291].
- 1978 American Indian Religious Freedom Act (PL 95-341).
- 1979 Archeological Resources Protection Act (PL 96-95).
- 1979 Protection of Historic and Cultural Properties; Advisory Council Regulations pursuant to the National Historic Preservation Act.
- 1980 Amendments to the National Historic Preservation Act of 1966.
- 1980 Treatment of Archeological Properties; A Handbook by the Advisory Council on Historic Preservation.
- 1983 Archeology and Historic Preservation; Secretary of the Interior's Standards and Guidelines.
- 1984 Museum Handbook, part 2, revised (contains Service mandates and guidelines for documentation of collections).
- 1984 Protection of Archeological Resources: Uniform Regulations (43 CFR Part 7).
- 1985 National Park Service Cultural Resource Management Guidelines--National Park Service 28 (Release 3). Release 4 in 1994.
- 1985 National Park Service policy on the "Disposition of Human Remains," in National Park Service Cultural Resource Management Guidelines (National Park Service-28), Chapter 7, Technical Supplement.

- 1985 36 CFR 2.5G Curation of Natural History Specimens (relevant to archeologically collected natural materials, such as faunal remains).
- 1986 Automated National Catalogue System Handbook.
- 1986 Special Directive 80-1; Collections Storage and Exhibition.
- 1987 National Park Service Native American Relationships Management Policy.
- 1987 Special Directive 87-3; Conservation of Archeological Resources.
- 1988 Advisory Council on Historic Preservation "Policy Statement Regarding the Treatment of Human Remains and Grave Goods."
- 1988 Amendments to Archeological Resources Protection Act.
- 1990 Curation of Federally Owned and Administered Archeological Collections, (36 CFR Part 79).
- 1990 Secretary of the Interior's Standards for Rehabilitation and Guidelines for Rehabilitating Historic Structures.
- 1990 Native American Graves Protection and Repatriation Act (PL 101-601).
- 1992 Secretary of the Interior's Standards for the Treatment of Historic Properties.
- 1992 Department of the Interior Museum Property Handbooks, Vols. I (revised) and II (draft).
- 1992 Amendments (PL 102-575), to the National Historic Preservation Act of 1966.
- 1994 Government-to-Government Relations with Native American Tribal Governments. Presidential Documents Title 3. Memorandum of April 29, 1994.
- 1996 Indian Sacred Sites. Executive Order 13007. May 24, 1996.

¹ Sites are in the Rocky Mountain Region Archeological Resource Inventory computerized database.

