

ALASKA REGIONAL PLAN

Systemwide Archeological Inventory Program

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TABLE OF CONTENTS

MANAGEMENT SUMMARY	1
INTRODUCTION	2
REGIONAL OVERVIEW	3
PREHISTORIC AND HISTORIC OVERVIEW	7
Paleoarctic Tradition	12
Paleoindian Tradition	13
Northern Archaic Tradition	14
Regional Specialization	14
Tundra and Arctic	15
Arctic Small Tool Tradition	15
Thule Tradition	17
Northwest Coast	20
Paleomarine Tradition	21
Transition	21
Developmental Northwest Coast Stage	21
Interior Alaska	25
Southwest Alaska and Pacific Coast	29
DESCRIPTIONS OF INDIVIDUAL UNITS	34
Alagnak Wild River	34
Land Ownership	34
Environment	34
Archeological Resources	35
Historical Aspects	36
Ethnographic Aspects	37
Discussion	37
Aniakchak National Monument and Preserve	37
Land Ownership	38
Environment	38
Archeological Resources	40
Historical Aspects	42
Ethnographic Aspects	43
Discussion	43
Bering Land Bridge National Preserve	43
Land Ownership	44
Environment	44
Archeological Resources	46

Historical Aspects	48
Ethnographic Aspects	49
Discussion	49
Cape Krusenstern National Monument	50
Land ownership	51
Environment	51
Archaeological Resources	52
Historical Aspects	55
Ethnographic Aspects	55
Discussion	57
Denali National Park and Preserve	57
Land Ownership	58
Environment	58
Archeological Resources	60
Historical Aspects	63
Ethnographic Aspects	64
Discussion	65
Gates of the Arctic National Park and Preserve	65
Land Ownership	66
Environment	66
Archeological Resources	68
Historic Aspects	70
Ethnographic Aspects	71
Discussion	71
Glacier Bay National Park and Preserve	71
Land Ownership	72
Environment	72
Archeological Resources	73
Ethnographic Aspects	74
Historical Aspects	75
Discussion	75
Katmai National Park and Preserve	75
Land Ownership	76
Environment	76
Archeological Resources	78
Historical Aspects	80
Ethnographic Aspects	81
Discussion	82
Kenai Fjords National Park	82
Land Ownership	82
Environment	82
Archeological Resources	83
Historical Aspects	85
Ethnographic Aspects	85

Discussion	86
Klondike Gold Rush National Historical Park	86
Land Ownership	87
Environment	87
Archeological Resources	88
Historical Aspects	89
Ethnographic Aspects	90
Discussion	91
Kobuk Valley National Park	91
Land Ownership	91
Environment	92
Archeological Resources	94
Ethnographic Aspects	96
Historical Aspects	96
Discussion	97
Lake Clark National Park and Preserve	97
Land Ownership	98
Environment	98
Archeological Resources	99
Ethnographic Aspects	100
Historical Aspects	102
Discussion	102
Noatak National Preserve	103
Land Ownership	103
Environment	103
Archeological Resources	105
Historical Aspects	107
Ethnographic Aspects	107
Discussion	109
Sitka National Historical Park	110
Land Ownership	110
Environment	110
Archeological Resources	111
Ethnographic Aspects	112
Discussion	113
Wrangell-St. Elias National Park and Preserve	113
Land Ownership	114
Environment	114
Archeological Resources	116
Historic Aspects	119
Ethnographic Aspects	119
Discussion	120
Yukon-Charley Rivers National Preserve	121
Land Ownership	121

Environment	121
Archeological Resources	122
Historical Aspects	124
Ethnographic Aspects	125
Discussion	126
ARCHEOLOGICAL INVENTORY AND SITE RECORDS	127
FIELD STRATEGIES	137
PRIORITY SETTING	142
STAFFING	142
PROPOSED ARCHEOLOGICAL INVENTORY PROJECTS	143
APPENDIX A	145
BIBLIOGRAPHY	166

TABLES

1. Summary of Alaska Region NPS areas	3
2. Alaskan NPS areas by region	15
3. Cultural chronology of Northwest Alaska	18
4. Cultural chronology of the Central Brooks Range (Northern Alaska)	19
5. Cultural chronology of Southeast Alaska	24
6. Cultural chronology of Central Interior Alaska (DENA, WRST, YUCH)	28
7. Cultural chronology of Southwest Alaska (Alaska Peninsula)	32
8. Cultural chronology of the Pacific Coast	33
9. Portion of parks that have not been archeologically surveyed.	129
10. Site acreage by park broken down by site category	131
11. Comparisons of site numbers and acres within park boundaries and immediately adjacent areas	132
12. Total number of sites recorded in parks by year	133
13. Alaska Region properties listed on the National Register of Historic Places	134
14. CRMIM survey results (acres)	135
15. CRMIM survey results (miles)	136
16. SAIP project priorities for fy 95, 96 and 97	144

FIGURE

1. Map showing locations of Alaska NPS units.	6
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MANAGEMENT SUMMARY

The Alaska Region of the National Park Service contains 23 areas (8 national parks, 10 preserves, 2 monuments, 2 historical parks, and one wild and scenic river) that encompass about 54,700,000 acres. They constitute only 6% of the units in the National Park System, but they contain 68% of the acreage. Of that total acreage, over 51,000,000 acres (about 94%) have not been archeologically surveyed even at the most cursory level. This Alaska Regional Plan, a part of the Systemwide Archeological Inventory Program, provides background information on the state of our archeological knowledge of the Alaskan parks and lays out a broad strategy for a long-term program of archeological inventories to systematically close the gaps in that knowledge.

Appendix A contains 71 project descriptions totaling almost \$18,700,000. At the current level of funding (\$210,000) it will take almost 100 years to complete those projects. Obviously it will be critically important to intelligently prioritize the projects on a regional basis to make certain the highest priority projects are funded first. The plan proposes the establishment of a priority setting committee consisting of the regional archeologist, a park superintendent, two park cultural resources specialists, and a park natural resources specialist.

A long-term cooperative effort among park and regional staff, other federal and state agencies, universities, museums, institutions, Native organizations, and individuals will be necessary to accomplish this formidable task. Professional research designs, qualified field crews, adequate project direction, database management and storage, use of modern technology, curation of collected artifacts and archival materials, and publication of professional reports with management and interpretive summaries will all need to be part of the program.

The plan lays out various options for implementing a long term archeological inventory program in the National Park units in Alaska. With the changing organization and restructuring of the National Park Service and with the increased emphasis on placing more services and personnel in the parks, a strategic plan for cultural resource programs in the Alaskan parks is needed. A long term archeological inventory program needs to be part of that plan. This document recognizes this need and makes recommendations that can only be implemented as part of a region-wide strategic plan for cultural resource programs.

INTRODUCTION

The main purpose of the regional survey plan is to provide a framework for a full-scale, long-term inventory of significant archeological resources on the 98% of National Park Service (NPS) lands in Alaska that have not been systematically surveyed. The plan is in compliance with NPS legislative requirements to locate, inventory, and nominate archeological resources, as mandated in Section 110 of the National Historic Preservation Act, as amended, and Section 14 of the Archeological Resources Protection Act, as amended. The inventories will be conducted in conformance with established policies and guidelines (NPS-28, the National Park Service's Cultural Resource Management Guideline and the Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation) for preservation planning, and with established General Management Plans and Resource Management Plans. The basic goals of the program will be, to the maximum possible, to discover the nature and extent of the archaeological resources in each NPS area; to determine the scientific values of those resources; to document those resources to National Register of Historic Places standards; and to obtain the needed data sets for management of those resources and for the Archeological Sites Management Information System (ASMIS).

The Systemwide Archeological Inventory Plan (SAIP) requires regional plans for implementation in order to allow for the diversity of resources in the system. The wide ranges in park sizes, park types, environmental conditions and constraints, and archaeological resources requires the greatest possible flexibility in the implementation of the program. Familiarity with the resources and problems of each area, as currently exists at the regional and park levels, will allow the tailoring of specific plans and research designs for the greatest efficiency and best results.

Because of the time span of this regional plan - 20 to 30 years - this plan discusses regional strategies and not specific research designs. Therefore, it is of major importance and central to achieving the objectives of SAIP that as part of each project, as it is funded and prior to implementation, a project specific professional research design will be developed. Each research design will be subject to State Historic Preservation Office and professional peer review. It will focus on the systematic and scientific acquisition, analysis and reporting of basic archeological resources data. Each will lay out the methodology of survey in each phase of the project, using explicit rational and justifiable criteria for those methods. Each will also develop a framework of relevant scientific objectives and research domains that project data will address. Since some of these inventories will continue for years, it is essential that research designs be structured for review and revision, as needed.

REGIONAL OVERVIEW

It is difficult to sum up on charts or in brief narrative the complexity of Alaska's resources, issues, and the immense tasks that face managers and resource specialists in this region. Alaska Region is at the very beginnings of the process of inventory and evaluation. Most of the NPS units are relatively new, with patterns of multiple land ownership and utilization by indigenous populations. They lack basic and baseline resource data and are understaffed and underfunded. It is a truism and almost a cliché that the large size of most of the units in Alaska make the regional resources inventory process exceedingly difficult and complex, as well as expensive. A long-term perspective, covering years, must be adopted. The temptation, because of cost, effort, time, and bureaucratic inertia, to settle for relatively superficial knowledge of our cultural resources must be resisted to the greatest extent possible.

As shown in Table 1 and Figure 1 the Alaska Region of the National Park Service contains 23 areas.

Table 1

SUMMARY OF ALASKA REGION NPS AREAS

<u>Type of Park Area</u>	<u>Number</u>	<u>Acreege (Rounded)</u>
National Historical Park	2	13,300
National Park	8	32,570,300
National Preserve	10	21,304,450
National Monument	2	797,000
Wild and Scenic River	1	24,050
TOTAL	23	54,709,100
(Wilderness)		33,919,650

The NPS system in Alaska contains parks, preserves and monuments. A preserve differs from a park only in that sport hunting is permitted in those areas. Since most of the Preserves are associated with National Parks or National Monuments, there are fifteen administrative units in the Alaska Region. These constitute 6% of the units in the NPS system but they contain 68% of the acreage in the system. Of the Alaska acreage, 62% is in official and legal Wilderness status. Briefly, the NPS units in the Alaska Region are:

- Alagnak Wild River - (ALAG) - 24,038 acres; forms the northern boundary of Katmai National Park and Preserve on the Alaska Peninsula; has not had any archeological inventory;
- Aniakchak National Monument and Preserve - (ANIA) - 602,779 acres; on the Alaska Peninsula; volcanic formations and coastal ecosystems; has not had any archeological inventory;
- Bering Land Bridge National Preserve - (BELA) - 2,784,900 acres; on the Seward Peninsula in northwest Alaska; Beringia; prehistoric to contemporary coastal Eskimo occupation; extensive paleontological material; rare Arctic lava flows; migratory bird nesting areas; arctic coastal ecosystems;
- Cape Krusenstern National Monument - (CAKR) - 659,807 acres; northwest Alaska; more than 5000 years of coastal occupation, including contemporary Eskimo; a National Historic Landmark and an Archeological District on the National Register of Historic Places; contemporary traditional culture;
- Denali National Park and Preserve - (DENA) - 6,028,091 acres; the Mt. McKinley massif, glaciers, wildlife, interior Alaska ecosystem; gold mining; an Archeological District (Teklanika) and several Historic Districts on the National Register of Historic Places;
- Gates of the Arctic National Park and Preserve - (GAAR) - 8,472,517 acres; Brooks Range and boreal forest; river systems; Paleoarctic tradition to inland Eskimo and Athabaskan occupation; contemporary traditional culture;
- Glacier Bay National Park and Preserve - (GLBA) - 3,283,168 acres; southeast Alaska; active tidewater glaciers; temperate coastal ecosystem, marine and land mammals, marine Paleoarctic tradition; Tlingit occupation (Pacific Northwest Coast culture);
- Katmai National Park and Preserve - (KATM) - 4,090,000 acres; Alaska Peninsula; Alaskan brown bears and salmon and trout; volcanism; coastal and peninsular ecosystems; prehistoric Eskimo and Aleut occupation; and several Archeological Districts on the National Register of Historic Places; Brooks River National Historic Landmark;
- Kenai Fjords National Park - (KEJF) - 669,541 acres; southcentral Alaska; marine mammals, glaciation; rain forest coastal ecosystem; early mining and logging; coastal occupations;

- Klondike Gold Rush National Historical Park - (KLG0) - 13,191 acres; 1898 gold rush; a National Historic Landmark and an Historic District on the National Register of Historic Places;
- Kobuk Valley National Park - (K0VA) - 1,750,421 acres; northwest Alaska; boreal forest ecosystems; arctic wildlife; 10,000 years of human occupation; inland Eskimo development; contemporary traditional culture;
- Lake Clark National Park and Preserve - (LACL) - 4,044,132 acres; Alaska Peninsula; mountain to coastal ecosystems; wildlife; salmon spawning areas; active volcanoes; prehistoric to contemporary Athabaskan occupation; coastal Eskimo occupation; Kijik National Historic Landmark;
- Noatak National Preserve - (NOAT) - 6,574,481 acres; northwest Alaska; major river system; transition zone between arctic and subarctic ecosystems; wildlife; geology; Paleoarctic tradition to contemporary traditional culture; extensive archeological sites;
- Sitka National Historical Park - (SITK) - 106 acres; southeast Alaska; Tlingit and Russian history since the late 1700's; the Russian Bishop's House, a National Historic Landmark; the Tlingit Fort Site on the National Register of Historic Places;
- Wrangell-St. Elias National Park and Preserve - (WRST) - 13,188,325 acres; southeast and southcentral Alaska; mountain to coastal ecosystems; glaciation; wildlife; extensive mining history including Kennicott Copper mine; coastal and inland prehistoric occupation; contemporary traditional culture;
- Yukon-Charley Rivers National Preserve - (YUCH) - 2,523,509 acres; northeast Interior Alaska; river ecosystems; boreal forest; peregrine falcons; 10,000 years of prehistoric occupation; paleontological sites; contemporary traditional culture; extensive mining history;

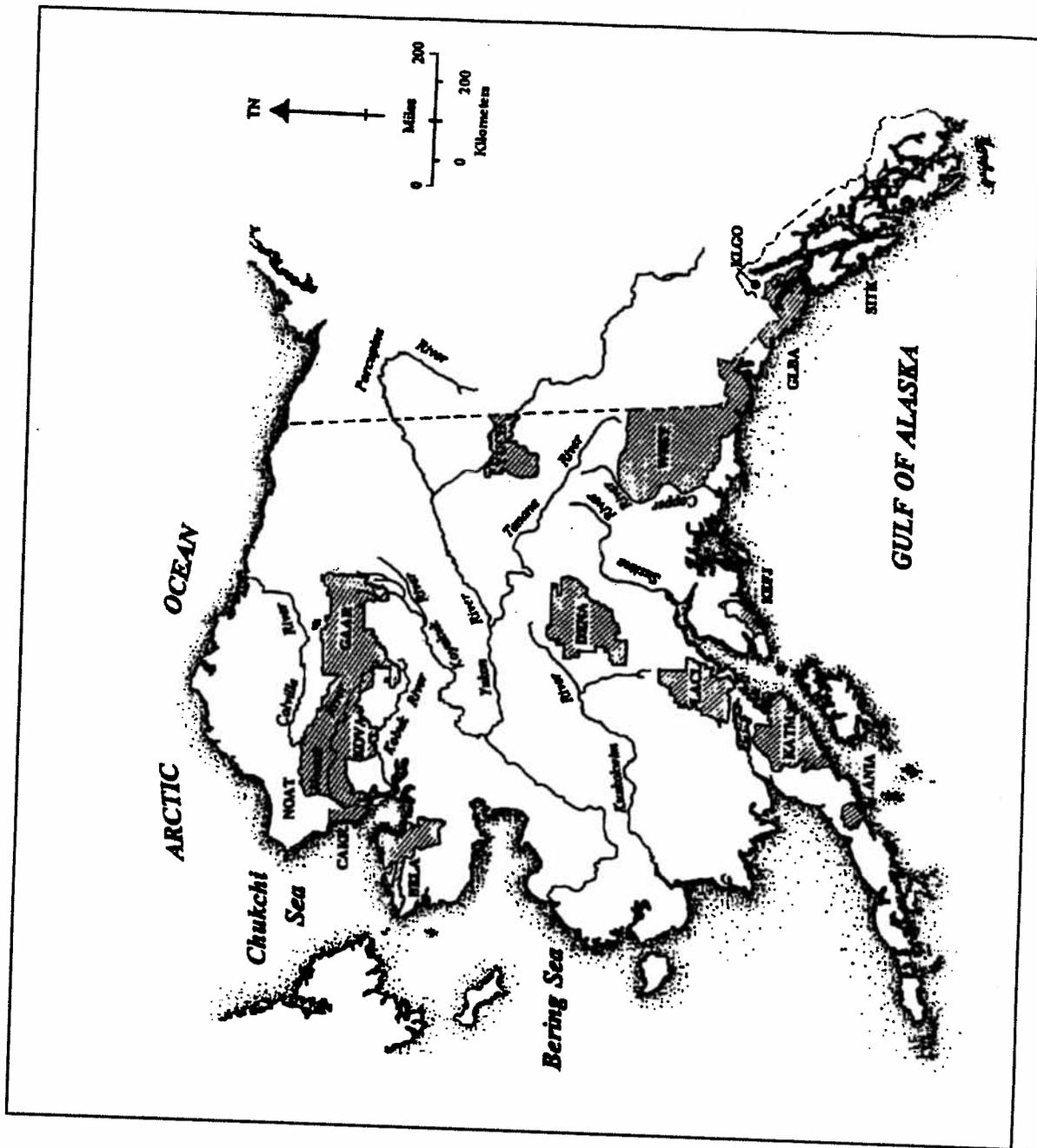


Figure 1. Map showing locations of Alaska NPS units.

PREHISTORIC AND HISTORIC OVERVIEW

A complete discussion of what is known of the prehistory of the Alaska Region is not within the purview of this document. The region is so large (1/5 the size of the continental United States), and diverse ecologically, physiologically, and culturally that any synthesis must be skeletal in nature. Provided here is a general description of the broad units of the cultural chronology of the area and then more specific discussion of the prehistory of the four, arbitrarily defined, units into which the national parks and preserves of the Alaska Region have been grouped. There is also a discussion of the archeological, historic, and ethnographic aspects of each of the NPS units.

Today, mainland Alaska is a large projection that sticks out like a thumb from North America toward Siberia. Its interior flatlands, dissected by rivers and mountain chains, lead into the main body of North America and its rocky southern coast runs into the Pacific Northwest coast of Southeast Alaska, British Columbia, Washington and Oregon. Ten thousand years ago, however, the Alaska mainland was, physically and ecologically, a part of Asia, from which it was severed by the rising seawater that formed the Bering Sea to the south and the Chukchi Sea to the north. Bering Strait is the connection between the two seas. Alaska's importance to American prehistory is precisely the result of its unique geographic position; not just for the early settlement of the continent but also as the land through which later waves of immigration passed.

During the Pleistocene, northern and central Alaska (and Beringia as a whole), experienced a lesser amount of glaciation than did much of North America, including the Northwest Coast. During the height of the last great Wisconsin glaciation, continuous ice Barriers in Alaska were confined to the east-west trending mountain ridges of the north and south. In the Yukon, east of the present-day Alaska border, the mountain glacier systems curved and nearly joined together along the northern extension of the Rocky Mountains. Thus, at the height of the Pleistocene, the Alaskan interior formed a relatively ice-free bowl, covered by "steppe tundra" vegetation (also called mammoth tundra), out of which a narrow, ice-free corridor led eastward and southward, between the Cordilleran and Laurentide ice sheets into the continental interior. Another possible ice-free zone that could have formed a migration route was down the coastal zones into the Pacific northwest. By 10,000 BP, the melting of the ice sheets had removed the barriers and opened all routes from Alaska.

At the time of European contact, the coast of Alaska north of the Alaska Peninsula was occupied by people adapted to life along winter ice-bound coasts. They spoke two distinct Eskimoan languages. One was spoken eastward as far as Hudson's Bay; and a second was spoken by the Pacific coastal people of the region around Kodiak island and Prince William Sound, as well as around Norton Sound. From the tip of the Alaska Peninsula and westward throughout the Aleutian Islands, were found the Aleuts, who existed by open-water hunting and fishing and whose language was related to Eskimoan in an Eskaleutian language stock. The Alaskan

interior was home to broadly adapted hunters and fishers of the boreal forest. Several distinct languages were spoken by these people, all part of the large Athabaskan family of languages, stretching throughout the boreal forest. The northern Northwest Coast was the home of the Eyak, Tlingit, and Haida, whose languages are sometimes included with Athabaskan in a Na-Dene linguistic phylum.

The physiography of Alaska is dominated by mountains and rivers. Dominating the north of Alaska is the Brooks Range, which runs generally east-west, into the Yukon Territory. There it swings southward - the Richardson, Pelly, and Selwyn Ranges - and can be seen as the northern end of the Rocky Mountains. Across the center of Alaska runs the Alaska Range, which is dominated by the Denali and Foraker massifs. Lying between the Brooks and Alaska Ranges are the Tanana-Yukon Uplands in the east, and in the far west is the Seward Peninsula. Lowland areas of considerable extent occur on the north slope of Alaska and in the Yukon and Kuskokwim basins of the interior. Southeast Alaska contains the Wrangell Mountains. The Chugach Range runs from that range westward to Prince William Sound and the Kenai Peninsula. In Southwest Alaska, the Aleutian Range becomes the backbone of the Alaska Peninsula and continues as the Aleutian Islands, extending about 1300 miles into the Bering Sea. The closest section of mainland Alaska to the Chukotka Peninsula, of the Russian Far East, is the tip of the Seward Peninsula, which, logically enough, shows the only "readily traceable genetic relationship" between the bedrock of Alaska and those of Siberia. Hopkins has said that the lithology of the Seward Peninsula is more like that of Chukotka than it is like that of the rest of Alaska (Hopkins 1967).

Also dominating the landscape of Alaska is its hydrography. The largest river system is the Yukon and its tributaries, the Porcupine, the Tanana, and the Koyukon. The Yukon crosses Alaska in a WSW direction, emptying into the Bering Sea. Crossing the North Slope is the Colville River, which originates in the Brooks Range and terminates in the Arctic Ocean. In northwest Alaska are the Noatak and Kobuk Rivers with their numerous tributaries. The Kuskokwim River, draining the large Kuskokwim Delta, runs south of the Yukon River and also empties into the Bering Sea south of the Yukon and just north of the Alaska Peninsula. The southcentral region is marked by the Susitna River draining into Cook Inlet and the Copper River, which empties into Prince William Sound. Further south is the Alsek-Tatshenshini system, which drains into the Gulf of Alaska by way of Dry Bay.

The landscape is dissected by these mountain ranges and river systems, which, when crosscut by the arctic and subarctic climate of the region, form innumerable microniches and habitation zones. Overall, though, the two dominant vegetation types (except for the Southeast Panhandle) are tundra and taiga. The boundary between the two zones, which has shifted many times over the millennia, seems to be governed mostly by climate. In warmer times, the treeline, or northern edge of the boreal forest (another name for taiga), shifts to the north, bringing ecological change in its wake and fostering concomitant cultural change. The extreme southeast part of Alaska, the Southeast Panhandle, where SITK, GLBA, and

KLGO are located, is part of the Pacific Northwest Coast, which is dominated by a coastal environment and a temperate rain forest.

The prehistory of the Alaska region can be described by means of a series of cultural traditions, each of which represents a distinct lifeway that persisted for a number of human generations and is represented archeologically by broadly similar sets of artifact assemblages. It is noteworthy that there is a tendency in Alaska to construct major prehistoric chronological sequences based on the few excavated sites (such as Onion Portage, Ugashik, Cape Krusenstern, Ground Hog Bay), and to apply them over wide geographic areas. This problem needs to be addressed by better evaluation of sites in order to verify the chronologies at the local level and to develop better views of the mosaic of adaptations and changes that characterize the prehistory of Alaska. Since most distinctions are currently based upon comparisons of artifact typologies, correlations of ethnic and linguistic identities with archeological entities are necessarily speculative. Distinguishing between diffusion and migration, a central archeological research domain in Alaska, is also difficult. Similarly, the study of human interaction with different and changing environments is a primary focus of cultural resources research in Alaska. A great deal more data need to be accumulated in order to address these cultural and interpretive questions. One neglected resource that can help address these matters is the study of late prehistoric, protohistoric and ethnohistoric sites of the last 500 years. These sites and resources, mostly exposed surface sites, are especially vulnerable to loss because of the more ephemeral nature of the cultural material in them.

Although the archeological database for the Alaska Region remains both limited and sketchy, preliminary evidence allows us to state with confidence that a wide range of archeological sites, prehistoric, historic and ethnohistoric, are contained within the NPS units. Among the most important are those that date from the late Pleistocene and early Holocene (the boundary is difficult to fix precisely). These provide a record of the first entries of humans into the Americas and consequently, they are associated with one of the great migratory events of human history -- the peopling of the New World. The descendants of the "First Alaskans" who created these sites went on to spread across North and South America, eventually reaching Tierra del Fuego about 10,700 years BP. As far as Native Americans are concerned, all roads seem to lead back to Alaska; it was the original homeland in the New World.

The majority of the archeological resources of the Alaska Region date from the post-Pleistocene era, roughly the period between 11,500 BP and the coming of the Europeans (circa 1750 AD). These sites document the diverse and changing adaptations of Alaska's major Native groups. From all indications, the story contained in these prehistoric sites is varied and immensely complex. The cultural complexity and diversity represented in the archeological record can be partly attributed to the vast size and the varied environments of Alaska. The state stretches from the rainy and forested Pacific Northwest to the arid and treeless Arctic Coastal Plain. In distance, this span of territory is comparable to the many miles that separate Florida from northern Minnesota and the range of ecological and cultural

variation is at least similar, if not greater. The prehistory of Alaska reflects this extreme variation.

Another source of the complexity of Alaska's archeological record is the interaction that occurred among the various groups and areas. People did not stay put through time; there was a constant ebb and flow of cultural groups and traits. For example, the Dena'ina Athabaskans apparently expanded out of the interior to dominate a large segment of the southwestern Alaska coast, pushing out Yupik and Chugach Eskimo, in the centuries before European contact. Within a few centuries, however, their material culture, as seen in the archeological record, became difficult to indistinguish from their maritime Eskimo neighbors. Trade was also widespread and this promoted the emergence of new cultural variations. The famous Chilkoot Trail of Klondike Gold Rush National Historic Park was originally a major trade route which the coastal Tlingit established and guarded for their trade with the Athabaskan groups of the interior.

Still another complicating factor, and one not found elsewhere in the prehistory of the Americas, was the continuing contact that existed over the millennia between Alaskan Natives and the Old World of northeast Asia. Ideas, goods, and often people moved back and forth across the Bering Strait that separates Alaska from Siberia. We know from local informants that, well into the nineteenth century, Siberian raiders were frequent visitors to the shores of what is now the Bering Land Bridge National Preserve on the Seward Peninsula. Peaceful contact was also frequent. For instance, one of the favored items that passed across the Bering Strait in peaceful times was iron, which reached as far east as Hudson's Bay - a symbol of Alaska's unique connection to the Old World that existed for thousands of years prior to the sailing of Columbus.

The archeological record in Alaska's parks is varied and rich. Some of the larger and more complex sites, such as the large prehistoric settlements of the sea mammal hunting Eskimo and the maritime Tlingit, are characterized by complex architecture and frequently yield bone, ivory, and wood objects of unequaled craftsmanship and artistic skill. Nor are Alaskan sites few and far between. Extremely dense concentrations appear to be fairly common along many segments of the Alaskan coast, around certain lakes, along salmon-rich rivers, and at favorable locations beside major caribou migratory routes.

Archeological sites associated with the historic past also abound. The earliest are associated with the Russian colonization of Alaska, occurring not only at Sitka in the southeast, but also in the Lake Clark and Wrangell St. Elias areas. The most common historical archeological sites are those linked to the American Period, and most particularly to the Gold Rush era and the time immediately following. These range from whole former towns like Dyea at KLGO to scattered and isolated camps of early prospectors, hunters and trappers. Sites associated with this expansive era of American history occur throughout most of the Alaska park areas.

Also worthy of note as archeological resources are the historic and ethnohistoric settlements of the Native peoples of Alaska. These document the acculturative changes that followed European contact and expansion, as well as

providing a bridge to the interpretation of the more remote prehistoric past. Because these more recent sites are part of a remembered past, they often have traditional cultural value to Native Alaskans and are also part of the ethnographic resources of the Alaska Region. Because traditional lifeways have continued (with various modifications) into the present, it is difficult to define discrete ethnographic resources in this region. Use of many of the park areas by Native Alaskans is widespread and frequently intensive; and is not limited to an occasional ceremony or plant collecting expedition. A large percentage of Alaskan parklands serve very real subsistence needs for local people. From this perspective, park areas like Kobuk, Noatak and others do not contain ethnographic sites, they are ethnographic sites.

There are probably underwater archeological resources within some of the Alaska NPS units, especially in the coastal units. However, at present they are not of major concern. Treasure hunting and consequent site destruction do not appear to be current issues in management of NPS lands in Alaska. In setting project priorities under SAIP, the Regional Archeologist and the priority-setting committee will consult with the Submerged Cultural Resources Unit of the NPS. Recommendations from that unit will be utilized in the Alaska SAIP program implementation.

The image of the Alaska Region park areas as uninhabited wilderness has caused a misconception of the prehistoric and historic uses of the areas and the type of resources found there. People have hunted, fished, trapped and lived in them for millennia. The currently popular conception of "Wilderness" as untouched by human hand or influence is misleading. Humans have been part of these ecosystems for thousands of years and have exercised profound influences on them. The study of paleoenvironments and setting baselines against which to measure changes is part and parcel of the study of the archeological record.

One of the most important research domains of interest in Alaska is, of course, Beringia and the entry of humans into the New World. A broad view of this domain would include the first, early entry and the successive waves of immigrants that followed. It is generally accepted that the New World was settled by immigrants from Siberia and Northeast Asia at least 13,000 years ago and that the majority of these people arrived across the Bering Land Bridge and Bering Strait. The date of the first arrival is still an unsettled issue among researchers.

An early date of 33,000 years BP has been proposed for a cultural complex found at Monte Verde, Chile by Dillahay (1984, 1988) but it has not yet been generally accepted. Another, more substantial component at this site, dating from 14,000 to 12,000, has been widely accepted. Another site, Meadowcroft Rockshelter in westcentral Pennsylvania, has a component that has been dated at about 16,000 years BP. Further to the north, a small cultural component at Bluefish Caves in the Yukon, has been dated by Cinq-Mars at ca. 13,000 BP. Also in the time range of 13,000 BP are some broken bones from Trail Creek Caves on the Seward Peninsula that the excavator feels could only have been broken by humans (Larson 1968). All the other firmly dated sites that seem to be pertinent to early human settlement of this hemisphere postdate 12,000 BP.

The picture of who crossed the bridge and when is still a murky one, with new finds and hypotheses modifying the model on a regular basis. The strongest current hypothesis is the Three Wave theory proposed by Greenberg, Turner and Zegura (Turner 1994). It is based on linguistic, dental and genetic data and it generally correlates to the current state of archaeological knowledge. This model hypothesizes that there were three main waves of immigration across Bering Strait that came from distinctive founding populations in Siberia and northeast Asia. The first wave passed through Alaska to found the main Amerindian groups of the New World. The second wave would have been the Athabaskan settlers that occupied the taiga areas. The last wave, according to this model, would have been the ancestors of the Eskimo/Aleut populations. This model gives a fine broad picture but it is hard to prove or disprove in the details of the archeological record. There are also scholars who disagree with this hypothesis on theoretical grounds (Moore 1994). Since the waves would have been made up of many small groups of people, the archeological remains could have varied widely as each group carried a tool kit that varied from other groups. As a result, there are almost as many ideas and theories as there are differing archeological assemblages. The general picture presented here represents a very general syntheses and is far from definitive.

Paleoarctic Tradition

The most widely accepted early tradition in Alaska has been the Paleoarctic Tradition (also called the American Paleoarctic, the Siberian-American Paleoarctic, the Beringian Tradition, the Denali Tradition, and the Paleomarine Tradition), which is characterized by a lithic assemblage based on a core and blade technology featuring microblades, distinctive microcores, and burins. This tradition has been found in most parts of Alaska, under one guise or another. It is generally dated at 8000 to 10 000 BP.

The type site is Onion Portage in KOVA (but not NPS property) where the Akmak assemblage was investigated by Anderson (1970a). This tradition shows clear antecedents in and relationships to archeological sites of Siberia and northeast Asia, e.g. archeological entities in Kamchatka and Chukotka (Late Ushki and early Ul'khum as defined by Dikov (1993), the Duiktai Complex of Siberia) as well as more distant sites in Japan, northeastern China, and Mongolia. While no one Siberian or Asian archaeological entity shows as an exact antecedent there are definite correlations across the board with the technology of the Paleoarctic Tradition sites of Alaska. In greater Beringia, which Anderson (1970a:70) sees as an environmental zone of tundra/northern taiga that stretched from Lake Baikal to eastern Alaska, the concept of this tradition reflects the presence of a common adaptation with an economy focused on land-based hunting by small and mobile groups of people whose sites seem to represent small camps and/or lookouts.

The Paleoarctic Tradition is widespread in Alaska, especially the hallmark microblade and burin technological complex. Paleoarctic type assemblages have been found in or very near every NPS area in Alaska except SITK and KLGO.

Paleoarctic materials, sometimes called the Denali Complex, have been found at Dry Creek (Component II) in the Interior by DENA, and at Aishihik Lake in western Canada near WRST. Along the coast it has been called the Paleomarine and has been found at Groundhog Bay on the tip of the Chilkat Peninsula, just outside GLBA, at Hidden Falls on Baranof Island, and Chuck Lake on Hecata Island. These coastal sites provide support for the theory of a coastal migration route for the early settlement of the New World that Fladmark (1979) first proposed.

Paleoindian Tradition

Recent discoveries in Alaska have led to the revival of the scholarly debate on the origins of the Paleoindian cultures that are exemplified by the Clovis, Folsom, Agate Basin, Plainview and other archeological traditions that were extant in the continental United States from 11,500 BP until Archaic times. The currently accepted idea is that the Clovis culture, with its distinctive fluted point technology, evolved south of the continental ice sheets of the late Pleistocene, and followed the periglacial environmental zones (characterized by a megafaunal subsistence base) northward as the glaciers retreated. One of the main supports of this theory of indigenous development has been the apparent lack of antecedent cultures in Siberia, Northeastern Asia, and Alaska. While fluted points have been found in Alaska (but not in Siberia) they have never been firmly dated as early enough to mark the migration or diffusion of the technology from north to the south. Recently, Dikov (1993) has suggested that the archeological assemblage of the lowest levels of the Ushki sites in Kamchatka, the Early Ushki component, seems to have some Paleoindian affinities.

Recently, Kunz and Reanier (1994) have redated and reinterpreted the data from the Mesa Site, which lies at Iteriak Creek just north of the boundary of GAAR. The site, now dated at between 10,300 and 11,500 BP, contains a lithic assemblage characterized by lanceolate points that are like some Paleoindian points but lacking the fluting. Also lacking is the Paleoarctic core and blade complex. This has led the researchers to postulate that this site represents a different group of people, a cultural group they have named the Northern Paleoindian tradition, which is related to the Paleoindian groups, such as Agate Basin and Hell Gap of mid-continent North America. Component I at Dry Creek near DENA, which lies stratigraphically under a Paleoarctic component and has been dated around 11,500 BP, also lacks a core and blade industry. This Nenana Complex is also seen as having links to the Paleoindian traditions of the lower 48 and as predating the Paleoarctic cultures.

Thus it can be seen that the early cultural history of Alaska has not been definitively described. Relatively few early sites have been found and thoroughly investigated. Given the size of the potential resource and the unexplored nature of the terrain, there are bound to be new discoveries that generate as many questions and theories as answers.

Northern Archaic Tradition

The next widespread cultural entity (horizon?) that can be discerned in the prehistory of Alaska is another technological tradition. It has been named the Northern Archaic tradition because it seems related to the Archaic cultures of the boreal forest south and east of Alaska. This apparently intrusive group or groups appeared around 6000 BP across a wide area of Alaska. The type site is at Onion Portage in KOVA. It has also been found in the Brooks Range in GAAR, at the Palisades in CAKR, in the Graveyard Point site in KATM, in the interior of Alaska, and in the northern Yukon of Canada. Some of the sites include microblade technology and tabular microcores such as that found at the Tuktu and Kurupa Lake sites in GAAR. The presence or absence of this earlier technology has led to varying interpretations of the origins and roles of the Northern Archaic people. On one hand it has been judged as basically an interior tradition, a result of people following the expanding boreal forest northward during a climatic warming period and displacing the local descendants of the Paleoarctic groups in Alaska. On the other hand, others have seen it as a technological diffusion that spread with varying degrees of acceptance from the boreal forests northward and westward. Migration and/or diffusion, this enigmatic cultural level appears to have had relatively little influence on later prehistory in the region. Cook (1969) and some others, however, see this tradition as a possible root for the later Athabaskan cultures in the Interior of Alaska.

Regional Specialization

Beginning around 4000 BP, the archeological record becomes richer and more detailed, and a finer focus can be utilized and more specific chronologies and hypotheses proposed. In broad areas differentiated by physiography, ecology, and geography, the cultural chronologies can be developed on a local basis and then compared with the broader events of those time periods. While broad similarities remain, with much commonalities in the archeological record, regional specializations do appear. In this overview, the following zones, adapted from those used by Dumond (1977, 1987) and others, will serve as the basis for this review of post-4000 BP prehistory: Tundra and Arctic (including the Bering and Chukchi Sea coasts); Interior; Pacific Coast and Southwest Alaska; and Northwest Coast (Table 2). Of course, none of the areas are mutually exclusive and each can be more finely or differently divided, depending on one's viewpoint and the time period of concern. In addition, since cultural boundaries waxed and waned over the millennia, most NPS areas do not fit exclusively in any one regional area.

Table 2

ALASKAN NPS AREAS BY REGION

TUNDRA & ARCTIC	NW COAST	SOUTHWEST & PACIFIC COAST	INTERIOR
GAAR	GLBA	ANIA	DENA
BELA	SITK	KATM & ALAG	YUCH
CAKR	KLGO	LACL	WRST
KOVA	WRST (partially)	KEJF	GAAR (partially)
NOAT			

Tundra and Arctic

In an area stretching along the coastline from Bristol Bay and the Alaska Peninsula, along the Bering Sea and Chukchi Sea coasts, northward around Alaska, and eastwards across the arctic all the way to Greenland, the coastline is ice-bound in winter and the terrain is generally treeless. In this zone, which can be up to several hundred kilometers broad, developed much of the culture of modern Eskimo (Inupiat and Yupik in Alaska) peoples (Tables 3 and 4). Some decisive and significant adaptations took place here and in adjacent Siberia that allowed a more efficient exploitation of this zone. Settlements spread and grew, in some places becoming more specialized, as the historically visible cultures appeared.

Arctic Small Tool Tradition

One of the most distinctive and widespread Arctic cultural traditions appeared around 4000 BP. The Arctic Small Tool tradition (ASTt) was first called the Denbigh Flint complex by its discoverer, Louis Giddings (1964), after the type site on Cape Denbigh on Norton Sound. Subsequently, it has been found throughout the Tundra and Arctic Zone that is characterized by coasts that are ice-bound in winter and treeless hinterland, from the Bering Sea side of the Alaska Peninsula, northward along the coast and throughout the Brooks Range, and eventually, along the Canadian Arctic coast and the Arctic-Archipelago to Greenland. The archeological assemblage is distinctive. It derives its name from the finely-flaked, tiny lithic tools that are its hallmark. Irving (1964), from the perspective of the Punyik Point site in the Brooks Range, linked the widespread appearance of these distinctive tools into the Arctic Small Tool tradition.

The origins of this tradition are obscure. It appeared fully developed in northwestern Alaska and spread rapidly southward and eastward. Its microblade, core and burin technology seem to have roots in the Paleoarctic tradition and in the general technology of Siberia and northeastern Asia. However, the continuity with Paleoarctic is cut almost everywhere in Alaska by the intervening and widespread Northern Archaic tradition which had its roots to the south and east in the boreal forests. It seems most probable that the transition to ASTt must have occurred somewhere outside of Alaska, probably northeastern Asia. Also noteworthy is that this time period marked the development and spread of circumboreal cultural adaptations (perhaps as arctic environments stabilized worldwide).

Subsistence was apparently balanced between hunting and fishing with the most likely mainstay species being caribou and anadromous fish. According to Dumond (1987), there is very little evidence for winter ice sealing, consistent use of dogs, or boat use - all of which are traits of the modern Arctic Eskimo groups. Some investigators feel that the Arctic Small Tool tradition marks the arrival of the ancestral Eskimo cultures while many others feel that, although there appears to be some technological continuity, the ancestral development of the historic Eskimo cultures took place in Siberia and the islands of the Bering Sea at a much later date. Nevertheless, the AST tradition people, by exploiting the resources of the coast and the hinterland, were the first group of people to spread across the North American arctic, as far east as Greenland (recognizable there as the Pre-Dorset culture).

There are currently two models for the subsequent course of the Arctic Small Tool tradition. Many investigators, including Anderson and Irving who worked in northwestern Alaska and the Brooks Range, see the tradition as encompassing a number of subsequent phases after the Denbigh Flint complex, lasting until around 1000 BP. These include the Choris, Norton, and Ipiutak phases. There is certainly a strong thread of cultural continuity through them that indicates some form of connection. Other researchers, such as Dumond whose perspective derives from work on the Alaska Peninsula, see a hiatus following the Denbigh part of the AST tradition and the shift to a new, but related, tradition named the Norton tradition. In this construct, Dumond subsumes the earlier Choris, the classic Norton, and the later Ipiutak cultures. The tradition is distinguished by the appearance of pottery just after 3000 BP. This pottery is clearly derived from Asian antecedents, is fiber-tempered and linear-stamped. Microblade use has diminished or ended, projectile points are larger with more lanceolate forms, burins have changed in form, and oil lamps and slate tools make their appearance. By the time of the proper Norton culture, after 2500 BP., the pottery is check-stamped and polished slate implements are present. The settlement pattern seems to have changed to that of large coastal communities that reflect an increased reliance on sea mammal hunting for subsistence.

Around the Bering Sea, the Norton culture persisted until around 1000 AD. On the Alaskan Peninsula this is evident as Norton influence progressively spread across it from the Bering coast to the Pacific coast by 600 AD. Further north, it seems to have been superseded by the Ipiutak culture (which others see as all part of the Arctic Small Tool tradition), which lacked pottery, ground slate, and oil lamps, but

otherwise maintained a technological continuity with Norton. Ipiutak shows Asian influences or connections in its spectacular art which seems to show Scythian style elements. The type site, found by Larson and Rainey (1948) at Point Hope, contains hundreds of permanent houses and lavish burials. Ipiutak sites have also been found away from the coast, in and around the Brooks Range, in NOAT and GAAR. Cape Espenberg, in BELA, has Ipiutak sites. Ipiutak lasted from around 2000 BP until about 800 AD, when the Thule Tradition appeared.

Thule Tradition

This tradition, ancestral to the historic Inupiat and Yupik cultures of Alaska, has also been called the Northern Maritime (Collins 1964) or the Neo-Eskimo tradition. As defined by Dumond (1977), it includes all the prehistoric, recognizably Eskimo remains from coastal Siberia, St Lawrence Island (after about 100 AD), the northern Alaska coast (after 500 AD), and from the southern coasts (after about 1000 AD). The assemblages are characterized by use of polished slate for tools and reliance on coastal resources, especially open water hunting.

The earliest identifiable cultures of this tradition, named Okvik and Old Bering Sea, were found on St Lawrence Island, Siberia, and other islands of the Bering Strait. The assemblages typically contain polished slate, fiber-tempered pottery, and toggling harpoon heads of bone or ivory. Also noteworthy is an elaborate art of carved ivory objects that differs from Ipiutak. It is possible that Okvik-Old Bering Sea evolved out of Norton, but this has not yet been convincingly demonstrated. What is known is that it evolved into the Punuk culture on both sides of the Bering Strait after 500 AD at the same time that Ipiutak was extant on the north coast of Alaska and the late Norton was present in the Alaska Peninsula area.

Late Ipiutak was contemporaneous with Birnirk. After 800 AD, Ipiutak was replaced on the north coast by Birnirk. There are various hypotheses on the causes and origins of this transition, from Old Bering Sea-Okvik and Siberian influences (but not Punuk) to indigenous development. Originally, the Birnirk focus was primarily on seals but included some caribou; at ~800 AD whaling harpoons appeared in some Birnirk assemblages. While Punuk was almost exclusively coastal and marine oriented, Birnirk was a mainland culture as well as marine, especially in its use of caribou. Birnirk disappeared by 1000 AD, but not before giving rise to the classic Thule lifeway of winter ice-hunting, kayak and umiaq open sea hunting, dogs and dog sleds, settlement in large villages focused on whale hunting, but still using mainland resources.

Around 1000 AD, Thule culture expanded. Following almost the same path as the Arctic Small Tool tradition 3000 years earlier, Thule people moved to the east across northern Canada to Greenland. They also expanded from the coast into more interior regions, such as the North Slope, the Brooks Range, and along rivers such as the Kobuk and Noatak (where the Arctic Woodland Culture developed). They exploited a wide range of resources, kept up extensive trade networks and social relationships. Thule influence also expanded to the south. Following the Norton

culture on the Alaska Peninsula, Thule influence reached as far as Kodiak Island. In the Pacific Coastal region, Thule did not replace the indigenous cultures but did seem to influence them.

Table 3
CULTURAL CHRONOLOGY OF NORTHWEST ALASKA

	Coast			Interior	
Present	Tareumiut	Northern Maritime Tradition	Arctic Tundra Tradition	Nunamiut	
500	Thule				
1000					
2000	Norton	Arctic Small Tool Tradition		Ipiutak (Feniak Lake) Norton-Ipiutak (Tukuto Lake)	
3000	Choris Walakpa (w/pottery) Walakpa			Choris	
4000				Punyik Point (Etiviuk Lake)	
5000		Northern Archaic Tradition		Palisades	
6000					
7000	Tunalik?	Paleo-Arctic Tradition		Akmak-Like Assemblages	
8000					
9000					
10000	Kahroak (Walakpa Bay)				

(adapted from Davis et. al. 1981)

Table 4
**CULTURAL CHRONOLOGY OF THE CENTRAL BROOKS RANGE
 (NORTHERN ALASKA)**

Age	Kurupa Sequence	Central Brooks Range Sequence (Adapted from Alexander 1969:66)	Regional Sequence
1900	Nunamiut Phase	Nunamiut	Arctic Tundra Tradition
1500		Kutchin	
1000		Proto-Nunamiut Kavik	Athapaskan
AD 1		Anaktuvuk Ipiutak (Kayuk)	(Norton Tradition)
1000	Cascade Phase	Punyik Complex	Arcitic Small Tool Tradition
2000			
3000			
4000	Kurupa Phase	Tuktu Phase	Brooks Range Tradition (Northern Archaic Tradition)
5000			
6000			
7000	Gates Phase	Kogruk?	Palaeo-arctic Tradition
8000			
10000		Northern Paleoindian	

(adapted from Schoenberg 1985)

Northwest Coast

This region of Alaska, also known as the Alaska Panhandle, stretches from the Copper River delta and the Malaspina Forelands of WRST, past the Alexander Archipelago south to the northern end of the Queen Charlotte Islands (at the Dixon Entrance to Hecate Strait) in a narrow arc extending along the North Pacific coast. Sharply bounded on the inland side by mountain ranges (the Chugach, Wrangell-St Elias, and the Coast ranges), this zone is radically different in climate, vegetation, and fauna from the regions beyond the mountains. The coastal strip features a relatively mild climate, temperate rain forest, and rich marine life. There are two coastal environments in the zone - outer coast and inner coast. The famed "Inside Passage" of Alaska, a sheltered coastline separated from the open ocean by the islands of the Alexander Archipelago provided a protected marine environment for exploitation. Areas to the north of this region were exposed to the open Pacific and Gulf of Alaska, a much more difficult ecological zone where there was less of a classic Northwest Coast cultural development.

The "classic" view of the Pacific Northwest as a culture area goes back to the work of BOAS and his students. Their views have been modified over the years but the basic perception of cultural unity with many cultural traits shared up and down the coast has persisted. It is characterized by a nonhorticultural subsistence style based on hunting and gathering. Because of the richness and predictability of such resources (fishing for salmon and halibut, sea mammal hunting, shellfish, plants, berries, etc) surpluses were generated, and a complex sociocultural system developed along with an elaborate and distinctive art style. Material culture was distinctive in its highly developed and elaborate woodworking technology that produced plank houses, bowls, canoes, monuments, boxes, and many other tools and utensils. A highly developed twined basketry was also notable, as were textiles of wool and vegetable fiber. Permanent winter villages or towns were a standard settlement pattern. Social organization was notable for the development of a stratified society in which status was based on birth and wealth. There were dominant kin groups and individuals were ranked as elite, commoners and slaves. The elite maintained their status through their wealth. The potlach ceremonial complex of formal gift-giving was one of the main features of this highly stratified society. It was made possible by the rich subsistence base that allowed for the accumulation of surpluses that could then be manipulated.

The Northern Northwest Coast zone roughly corresponds to the historic territories of the Eyak to the north, the Tlingit in the middle and the south, and possibly Haida people at the southern end. Only at the northern end is there any shading into other natural zones where Athabaskan and Pacific Eskimo cultural influences can be seen, probably due to the less sheltered nature of the coastal environment.

Paleomarine Tradition

The earliest culture in this zone has been called the Paleomarine Tradition (Davis 1990) and is readily apparent as a facies of the Paleoarctic Tradition (Table 5). Sites at Groundhog Bay, Hidden Falls, and Chuck Lake indicate that a core and blade using people with a technology that featured microblades, burins and slotted bone and antler points were extant in this area by 9500 BP. Fladmark (1979) has proposed that the Northwest Coast could have been one of the conduits for early migrants into the New World from Siberia and northeast Asia. Certainly the Paleomarine sites lend support to the feasibility of this migration route. In order to occupy this zone, Paleomarine peoples would have to have been capable of exploiting a coastal environment and would have needed a knowledge of boats in order to reach these site locations. Critics of the Fladmark hypothesis have pointed out that glaciers from the nearby mountain ranges would probably have reached tidewater at this time period, blocking southward travel along this coast. There is no doubt that this was not always the case, refugia did exist, and it is probable that sea levels were lower at the same time. Recently, Gruhn (personnel communication) has proposed that this coastal route served as a migration route from Siberia into the New World as far south as Central and South America as long ago as 30,000 to 40,000 BP. The oldest component, possibly cultural, at Mesa Verde, Chile has been dated at 33,000 BP (Dillehay 1984). A lot more paleoenvironmental research needs to be accomplished in order to better evaluate the Fladmark hypothesis.

Transition

The period from 6500 to 5000 BP saw the end of the Paleomarine tradition and a shift towards a more recognizable Northwest Coast culture (Davis 1990). During this time period, the technology shifted to one in which ground stone tools became dominant over the microblade and unifacial flaked stone tool industries. By 5000 years ago, the economic and settlement patterns had adapted to changing environmental conditions. Three sites are cited by Davis for the existence of this transitional period, which he feels was due to *in situ* development through invention or diffusion. The three sites are the Lake Eva, Point Couverdon (just outside GLBA), and Irish Lake sites. On the other hand, Harritt (1994) feels that the evidence is weak for this transitional phase and that there is a stronger basis for postulating a migration of new groups bearing ground stone technology into the northern Northwest Coast area. This evidence lies in Component II at Hidden Falls.

Developmental Northwest Coast Stage

Early Phase

Component II at Hidden Falls, stratigraphically above the Paleomarine component, and dated to between 4670 BP and 3265 BP, shows a full-fledged ground stone industry and represents an Early Phase of this stage. The appearance

of this new technology seems to reflect an increased emphasis on intertidal resources such as mollusks and fishing, the development of large winter settlements near shores and specialized camps for subsistence activities. Comparable assemblages are seen in the Locarno Beach phase on the British Columbia coast and the Takli Birch phase on the coast of the Alaska Peninsula in KATM.

Other sites that fit into this Early Phase of the Developmental Stage are Rosie's Rockshelter on Hecata Island, Coffman Cove on Prince of Wales Island, and Traders Island just south of Chichigof Island. Coffman Cove is a coastal shell midden that has a radiocarbon date of 3685 BP. Traders Island, a very large site dated at 3605 BP and 3000 BP, shows a similarity to Hidden Falls with a greater emphasis on shellfish. Rosie's Rockshelter was dated at around 4000 BP and contained a shell midden and a unilaterally barbed bone harpoon head.

Middle Phase

The Middle Phase of the Developmental Stage was defined by Davis on the basis of Component III at Hidden Falls. It has radiocarbon dates between 3000 and 1300 years ago and shows continued use of a ground stone and bone technology. At least ten other sites in the area show some affiliation with this component. Although use of coastal resources apparently intensified and use of coastal areas continued or expanded, most of the known sites of this phase appear as seasonal camps tied to the harvesting of resources.

Late Phase

The Late Phase shows the development of larger structures and by sites that could be used for defensive purposes. The appearance of larger structures in this archaeological record indicates the "winter villages" were being utilized. Seasonal procurement camps for shellfish, sea mammals, fish, deer, and berries were still being occupied. Continuity with earlier cultures can be seen in the continued use of ground stone and bone and some chipped stone (mostly obsidian). New implements included tools of native copper, stone bowls and lamps, new harpoon forms, and the use of drift iron in later times. The Late Phase dates from about 1000 AD to as late as 1750 AD at one site. Other sites besides Ground Hog Bay (Component I) with late phase remains are the Starrigavan site on the western side of Baranof Island, the Russian Cove site on the mainland near Kupreanof Island, Bear Shell Midden on the northeastern side of Chichagof Island, and Old Town on Knight Island.

Late Phase assemblages and sites show many close parallels with the historic groups of the northern Northwest Coast. Especially noteworthy are the similarities to the historic Eyak who occupied the coast west of Icy Bay. Linguistic and ethnohistoric evidence indicates that the Eyak territory stretched further to the south and east in earlier times. Linguistic research shows strong ties between the Eyak and Haida languages and suggest that a closer relationship existed between the two groups as long as 2000 years ago. Since other research shows a relatively short time depth for Tlingit presence (500 to 1000 years) on the coast, it has been

postulated that a Tlingit expansion separated the Haida and Eyak, who were pushed to the north.

The evolution of the historic, "classic" Northwest Coast culture, with its coastal subsistence focus and stratified, complex social organization, has been attributed to the differential access of groups to the major and stable resources of the area - such as streams with major salmon runs. The ability to harvest and accumulate surpluses of these resources led to some groups becoming more wealthy and powerful than others - with property, increased population, and influence. A highly developed art and oral culture, warfare, slavery, extensive trading relationships, sophisticated technology, and such institutions as the potlach became widespread up and down the coast.

Another area of archeological concern for this coast and its NPS units is historical archeology. Beginning in 1741, with Bering's second expedition which touched on the northwest coast, European contact continued and increased. Russian exploitation of sea otter fueled continued expansion and settlement from the Aleutians. Russians made solid contact with the Eyak and Tlingit by 1780. By 1779, Spanish explorers had reached as far north as southeastern Alaska. James Cook's third voyage, in 1778, reached Nootka Sound and the Gulf of Alaska. Lituya Bay was explored by the French under LaPerouse in 1786. A Spanish scientific expedition under the leadership of Malaspina reached Yakutat Bay in 1791. Sitka was founded by the Russians in 1799 and destroyed by the Tlingit in 1802. The Tlingit Fort was destroyed in 1804 by the Russians (the site is now SITK) and the first permanent European base was on the Northwest Coast was built at Novo-Arkhangel'sk. Later, of course, American purchase of Alaska led to further settlement and exploitation of the region. The Klondike Gold Rush of 1898, followed by a series of other gold rushes, led to the opening of Alaska, which has continued to this day.

Table 5
 CULTURAL CHRONOLOGY OF SOUTHEAST ALASKA

date	Coast		Interior	
	Kodiak region	Southeast AK	SW Yukon & Alaska	
1900-	Pacific Eskimos	Historic Northwest Coast Indians	Bennett Lake and Athabaskans	
1000- AD	Thule Tradition	Late Phase	Aishihik	
0- BC				
1000- 2000-	Kodiak tradition	Middle phase	Athabaskan tradition	
3000-	Ocean Bay tradition			
4000-	Ocean Bay tradition	Early phase	Taye Lake	
5000-		Developmental Northwest Coast stage		Nesikep tradition
6000-		Transition		Little Arm
7000-	Ocean Bay tradition	Paleomarine	Paleoplateau tradition	
8000-				

(adapted from Dumond 1983)

Interior Alaska

The Alaskan Interior is a vast area and has generally been placed within the even larger Subarctic Zone. Stretching from south of the Brooks Range, over the Alaska Range to the Matanuska Valley and over to the Wrangell- St Elias and Chugach Mountains, the interior encompasses DENA, YUCH, and major portions of WRST and GAAR. Since the physiography of the region is so varied, including major mountain ranges, river valleys such as the Yukon, Kuskokwim, and Susitna, and the Yukon-Tanana-Kuskokwim plateaus, vegetation is the criterion most frequently used in defining the Subarctic. Most writers include the boreal forest (taiga) and the transitional forest or forest-tundra ecotone as major elements in delimiting the zone. The Yukon-Tanana-Kuskokwim plateau area of interior Alaska is considered one of the major physiographic regions of the North American Subarctic. In contrast to the Canadian Shield and Cordilleran areas of the Subarctic, this region was not glaciated during the later stages of the Pleistocene. This legacy is evident in well-developed drainage patterns and soils. The climate features long, very cold winters and relatively warm, short summers. Most of the precipitation falls as snow in the winter (another name for the area translates as "cold snow forest"). While the climate is dry (less than 46 cms/year = semiarid), the low evaporation and transpiration rates result in a general surplus of surface water.

One other common way that Interior Alaska is defined is culturally, or ethnographically. In historic times this area was the home of Athabaskan peoples. The Athabaskans have been defined as a group of mostly forest dwelling, hunting and gathering Indians, organized into bands, speaking a group of fairly closely related languages. The Turner, Greenberg, Zegura "Three Wave " hypothesis of settlement of the New World holds that the Athabaskan speaking people were a genetically and culturally separate wave from the early Amerindian groups and late Eskimo/Aleut groups. Anthropologists and linguists generally agree that proto-historic and historic Athabaskans were a separate group in Alaska, distinguishable on cultural and linguistic grounds from neighboring Inupiat, Yupik, Northwest Coast and Pacific Coast cultures. Archeologists, on the other hand, have been unable to pin down the origins of the Athabaskans in Siberia, northeastern Asia, or the New World. While there are several sites that indicate the existence of prehistoric Athabaskans in Alaska, the origins and connections to the historically known ethnographic Athabaskans is much more difficult to trace.

Of concern to us are the 23 languages that form a recognized geographical subdivision of the Athabaskan language family, usually referred to as Northern Athabaskan (Krauss and Golla 1990). They occupy a large, continuous area, mostly in the subarctic interior of Alaska and western Canada. Other groups of Athabaskan languages exist on the Pacific Coast of Oregon and northern California (where it is spoken by a number of riverine and coastal tribes), and in the Pueblo-Southwest (the Apachean languages which include Navajo, Kiowa, Lipan and various Apache tribes).

The Athabaskan family of languages is one branch of a larger linguistic group - Athabaskan-Eyak. Eyak, the only other branch, in 1980 nearly extinct, was spoken

on the south coast of Alaska, near the mouth of the Copper River. Tlingit, a later arrival on that coast, has a close resemblance to Athabaskan-Eyak in structure but not in vocabulary. Sapir (Krauss and Golla 1981) believed that there was sufficient evidence of a genetic (linguistic) relationship between Tlingit, Athabaskan and Haida to group them into a single entity which he named Na-Dene. More recently, other scholars have felt that Sapir's Na-Dene hypothesis was too broad and that an historical explanation better explains the similarities between Athabaskan and Tlingit and that Haida is not part of the group at all. Greenberg's research (Turner 1994) has recently postulated again the Na-Dene grouping as a larger language phylum.

From a linguistic point of view, it appears that Proto-Athabaskan-Eyak was probably present in interior Alaska and the Yukon by at least 6000 BP. The split between Proto-Athabaskan and Proto-Eyak took place around 3500 BP and the Athabaskan languages differentiated around 2500 BP or later (Krauss 1990). The probable location of this differentiation was eastern interior Alaska, the headwaters of the Yukon River, and northern British Columbia, or some part of this area. Again, based upon linguistic evidence, the earliest directions of Athabaskan expansion were probably westward into Alaska and southward into southern and central British Columbia - probably by 500 AD (ibid.). Later expansion included a movement eastward into the MacKenzie River drainage and another movement southward along the eastern side of the Rocky Mountains into the Southwest (the Apachean languages).

Archeologists (Borden; Dumond; Carlson), using the Na-Dene hypothesis, have suggested a correlation between "Na-Dene"-speaking people and the spread of the Northwest Microblade tradition of the southwestern Yukon in Canada around 7000 BP. Since the Northern Microblade tradition is not generally accepted, other archeologists have linked the ancestral Athabaskans to the Northern Archaic and Northern Cordilleran traditions (Clark 1992) of the same general time period. Based on the Healy archeological site, Cook and McKennan (1970) have postulated the development of the recognizable Athabaskan cultural pattern to have begun in the northern Interior with the major environmental and adaptive changes that preceded the Northern Archaic tradition at least 6000 years ago.

The lack of a clearly stratified and dated archeological site showing the development of the Athabaskan culture pattern has prevented resolution of the differing theories. The *Klo-Kut* site, in the middle Porcupine River drainage, provides the longest unbroken prehistoric record of Athabaskan occupation. The site reveals 1500 years of continuous occupation that culminates in a well-documented Athabaskan village component. Morlan (1970) characterizes the inhabitants of *Klo-Kut* as primarily caribou hunters, oriented toward upland, treeless areas and postulates a similar lifeway for other northern Athabaskans during the late prehistoric period. Another site, EAG-139, which is located on the left bank of the Yukon river between Eagle and Eagle Village, represented a Han Athabaskan village that was occupied between 1880 and 1890 AD. Based on oral history and archeological data from the site, it appears that the Han families there focussed on hunting large and small game, especially caribou and salmon.

Another theoretical thread for the prehistory of the Athabaskans is one that links the effects of a major volcanic eruption in the St Elias Range (represented archeologically as the White River Ash), at about 1890 BP with the displacement of Athabaskan groups around Kluane and Aishihik lakes, subsequent movement to the northwest, and the appearance on the Brooks Range with Kavik points and *tcí-thos*, as well as other generalized implements of the Athabaskan tradition. It is also possible that this eruption and displacement was a starting point for the movement of Athabaskan speakers to the Southwest.

The development of Athabaskan culture in the southern part of the Interior (WRST) and southwestern Yukon shows a similar pattern (Table 6). One of the earliest sites, from around 700 BP, is GUL-077, which is a late winter camp along the lower Gulkana River and on the western border of the park. Other Athabaskan sites in that area are Dakah De'nin's Village, a protohistoric site near Chitina, and Taral, a historic period site just across the Copper River.

One of the few Athabaskan cultural sequences has been developed by Workman (1974) for the Aishihik-Kluane Lake area of the southwestern Yukon, just adjacent to the eastern border of WRST. The sequence is divided into four cultural phases (see Table 5):

- **Little Arm Phase** is the oldest, approximately 8000-4500 years in age, with Paleoarctic and Paleoindian traits present.
- **Taye Lake Phase** designates the advent of the Northern Archaic tradition in the area around 4500 BP, persisting until 1800 years ago. Workman has postulated that there was a technological continuity from this phase that persisted to the time of historic contact, and that, as a consequence, the Taye Lake people were speakers of a language in the Na Dene family and thus, were Athabaskan.
- **Aishihik Phase** dates from 1600 BP to ca. 150 years ago and represents late prehistoric Athabaskan culture until European contact. The eruption of Mt Bona and the deposit of the White River Ash marks the beginnings of this phase, Workman sees some technological continuity with the preceding Taye Lake Phase and represents the identifying tie to Athabaskan culture.
- **Bennett Lake Phase** marks the protohistoric native Athabaskan culture (Ahtna and Southern Tutchone) with both traditional implements of the Aishihik phase and European objects.

To be noted is the long persistence of the Little Arm phase (3500 years) that was abruptly replaced by the appearance of the Taye Lake phase technology, which then persisted for thousands of years. Whether Taye Lake really represents the advent of Athabaskan peoples is a major research question for this region.

Table 6.

CULTURAL CHRONOLOGY OF CENTRAL INTERIOR ALASKA (DENA, WRST, YUCH)

Time (Years BP)	Generalized Interior Cultural Sequence			Referenced Cultural Variants	Diagnostic Elements
	Climate	Flora	Fauna		
0	Modern Climate	Modern Vegetation	Modern Fauna	Athapaskan Tradition	Native copper, Trade items, Decorative items, Tchi thos, Preservation of Organic materials
1000					
2000					
3000					
4000					
5000	Thermal Maximum	Expanding Boreal Forest	Pallisades II Complex	Northern Archaic Tradition	Side and Corner notched bifaces occurring with or without microblades
6000					
7000					
8000	Increased Warming	Shrub Tundra	Tuktu Complex	American Paleoarctic Tradition	Blade and Core technology (microblades and Burins)
9000					
10000	Moister, Warmer	Pleistocene Megafauna (Mammoth, Horse, Bison, Caribou)	Denali Complex	Possible Affiliation with Clovis Tradition	"Paleoindian" lithic industry (Various bifacial projectile points, no microblades, no fluted points)
11000					
12000					
13000					
14000	Arid, Cool	Steppe-Tundra	Nenana Complex		

(adapted from Griffin 1990)

Southwest Alaska and Pacific Coast

This diverse and complex (culturally speaking) region (Tables 7 and 8) has been conceived, archeologically, as an area of Pacific Eskimo co-traditions (Clark 1984b) stretching from the Chirikof Island and Chignik area of the Alaska Peninsula west of Kodiak Island to the Copper River delta on the Gulf of Alaska. Even though there has been a great deal of cultural diversity among Prince William Sound, Kachemak Bay, Kodiak Island, the Pacific side of the upper Alaska Peninsula, Chirikof Island, and the middle of the Alaska Peninsula, they can be considered within a single framework or set of co-traditions. The NPS units within this region are ANIA, KATM and ALAG, LACL on the Alaska Peninsula, and KEJF on the Gulf of Alaska coast of the Kenai Peninsula.

In late prehistoric times, the population of this extensive region fell into two major linguistic divisions, Aleutian and Eskimoan, with the dividing line between them falling on the Alaska Peninsula just west of ANIA, near 159 degrees west longitude. Both groups shared many traits, derived probably from their common existence as marine hunters and their common roots as Eskaleut peoples. Both the Eskimoan and Aleut languages were derived from a common Eskaleutian language. The place and time of the separation of these and other languages from the common stock into separate languages is a major research question for this area (see Dumond 1987). However, other influences were regularly felt on the Alaska Peninsula. Over the millennia, both migration and diffusion came from the Bering Sea coast to the north, from the interior areas to the east, and the Pacific areas of Kodiak Island.

Cultural influences from the Bering Sea coast can be seen on the Peninsula in the presence on Paleoarctic sites at Ugashik Lake and at the mouth of the Kvichak River on Bristol Bay. The Anangula site in the Aleutians also represents an early presence of Paleoarctic type culture but it doesn't seem to have influenced later developments in the area. The Northern Archaic tradition appeared in the area about 5000 BP, with sites at Kvichak River and in KATM (possibly present in LACL and ANIA but these areas are unsurveyed).

In contrast, by 7000 years ago, maritime hunters were living on Kodiak Island, the adjacent Alaska Peninsula, and probably throughout the Pacific area. This culture has been called the Ocean Bay I tradition on Kodiak, and the closely related Takli Alder phase on the Pacific Coast of the Peninsula. Ground slate appears in the tool inventory at this time, although chipped stone technology remained predominant. On Kodiak Island the transition to Ocean Bay II around 4500 BP, is marked by the shift to the predominance of ground state tool technology. However, it seems that Ocean Bay I type culture persisted on Takli Island and the Alaska Peninsula (as shown at the Kukak Bay site in KATM), and extending as far northwest as Pedro Bay on Lake Iliamna. This persistent culture has been named the Takli culture by Clark (1984b) (late Ocean Bay I on Kodiak and Takli Birch on Takli Island). Takli and Ocean Bay II seemingly coexisted and interacted until, at least, 3800 BP. After this Kodiak saw the development of the Kachemak tradition. Takli Birch continued on the Peninsula into a much later time with very little cultural elaboration. By late Takli

Birch times influence from Kachemak can be seen, indicative of interaction throughout the region.

In the broad view, the second millennium B.C. showed some cultural diversity in the region with several related, but locally divergent cultures. The Old Islanders of Chirikof Island (near ANIA) employed chipped and ground tool technology but in different styles from Takli and Ocean Bay II. It probably represents a regional phase of the central and western Alaska Peninsula and offshore islands of the 4200 BP period. At the base of the Alaska Peninsula the 4500 year old Pedro Bay site shows variations from Ocean Bay II as does the Brooks River Strand phase on the Bering Sea slope of the Peninsula.

At the Brooks River site, the arrival of Arctic Small Tool people from the Bristol Bay region is evident by 3800 BP and lasted until 3100 BP. The intrusive ASTt occupation of the Brooks River represents a unique phase in the prehistory of interior Peninsula because it is a 700 year period when the influence of Pacific Coast cultures is not evident. This suggests that there was an actual migration of ASTt people from the north and not a diffusion of their technology and culture. The next wave of influence from the north shows up around 2300 BP in the Norton culture, which was resident until 1000 BP. Norton, characterized by pottery and the use of ground slate, marked a shift to an economy based on coastal resources. Norton appears to have shared this marine orientation with the developing Kachemak or Kodiak tradition on the Pacific Coast. They shared many characteristics but Norton doesn't seem to have ever firmly established itself on Kodiak or the Pacific Coast.

As the Kachemak tradition evolved from North Pacific maritime hunters not very different from Ocean Bay, it was represented on the coast of the Alaska Peninsula in the Takli Cottonwood and the Kukak Beach phases, which do show some Norton influences. Sites also have been found in Prince William Sound (Palugvik), as well as in the middle and upper Cook Inlet that are very similar to late Kachemak. Clark labels this development of Pacific Coast groups a co-tradition and Dumond (1987) sees it as a wide-spread Kodiak tradition.

The last centuries of the first millennium A.D. were ones of fusion of Bering Sea and Pacific ideas and cultures. In most areas, cultural continuity is evident though some immigration is probable (Clark 1984b). This period is seen as the time of the development of the historically known Pacific Eskimo. The triggering event for this growth was the fluorescence of the Thule Eskimo culture to the north and its rapid spread to the east and the south from its origins around the northern Bering Strait. By around 1100 AD, the ancestors of the historically known Pacific Eskimo may have been present on the Alaska Peninsula coast in the Kukak Mound Phase and on Kodiak Island in the Koniag phase. According to Clark (1984b:146):

A long series of events and the ongoing operation of cultural processes tending to obliterate cultural differences is involved in the formation of the Pacific Eskimo and their neighbors. The Norton influences and possible migrations of the late first millennium of the Christian era, the subsequent Thule influences transformation on the Alaska Peninsula at

the beginning of the second millennium, or the ongoing local development cannot explain fully the later prehistoric and ethnographic cultures of the region. Ethnographically and archeologically, there also is an impressive body of material and nonmaterial culture with a distinctive North Pacific cast variously shared by the Pacific Eskimo, Aleut, Eyak, and other Northwest Coast peoples.

By 1500 AD, the Koniag culture was well established on Kodiak, representing a well developed Pacific Eskimo culture, probably speaking Pacific dialects of Yupik Eskimo speech, reflecting Bering Eskimo influence, but also reflecting *in situ* development and influences from many other directions. In Cook Inlet and on the upper Alaska Peninsula, Dena'ina Athabaskans were expanding from the east, establishing themselves as far south as Lake Iliamna and Lake Clark. In Prince William Sound and on the western coast of the Gulf of Alaska (KEJF), Kachemak influences remained strong, although there was contact with the expanding Athabaskans. By contact times, their descendants, the Chugach Eskimo, inhabited the area and were expanding.

On the Aleutian Islands, the Aleutian Tradition of maritime hunters developed and remained strong until the invading Russians disrupted that area. It is possible that the Aleuts ventured as far east and north as the lower Alaska Peninsula and the area of ANIA.

Table 7

CULTURAL CHRONOLOGY OF SOUTHWEST ALASKA (ALASKA PENINSULA)

CULTURAL UNIT	DATE (C-14 YEARS)	C-14 DETERMINATIONS
Ugashik River phase	AD 1000 - 1800	335 60 (SI-2076)
Ugashik Lakes phase tidewater subphase	AD 400 - 1000	930 75 (SI-2649) 1055 60 (SI-2650)
Inland subphase	200 BC - AD 400	1535 80 (SI-2642) 1665 80 (SI-2646) 1885 90 (SI-2645) 2110 95 (SI-2078)
Ugashik Hilltop phase	1900 - 1500 BC	3460 75 (SI-2644) 3525 80 (SI-3220) 3615 60 (SI-1551) 2880 60 (SI-2552)
Ugashik Knoll phase	3100 - 2900 BC	4810 (SI-2640) 4840 (SI-2643) 5055 70 (SI-2494)
Ugashik Narrows phase	7000 - 6500 BC	8425 115 (SI-2641) 8995 295 (SI-2492)

(adapted from Dumond 1987)

Table 8. CULTURAL CHRONOLOGY OF THE PACIFIC COAST

DATE	CHIRIKOF ISLAND (MIDDLE ALASKA PENINSULA?)	UPPER ALASKA PENINSULA	KODIAK ISLAND	OUTER COOK INLET (KACHEMAK BAY)	PRINCE WILLIAM SOUND
1900	Resettled with Koniags by the Russians	HISTORIC KONIAG	HISTORIC KONIAG SW/NEKODIAK	HISTORIC KENAI PEN. ESKIMO	HISTORIC ATAPAKSAN
1800			CERAMIC / ACERAMIC / KONIAG / KONIAG	ATHAPASKAN INDIAN ?	BURIAL CAVES
1700	KONIAG		/ UYAK UPPER / LEVEL	\\\\\\\\\\\\\\\\\\\\	
1600	? ?	KUKAK MOUND			? ?
1400					
1200	? ?			FOX FARM BLUFF	PALUGVIK 3-4
1000					
800	BLUFF?				
600		KUKAK BEACH	THREE SAINTS AND		
400	SCREE?		UYAK INTERMEDIATE LEVEL	KACHEMAK III	PALUGVIK 1-2
200		TAKLI COTTONWOOD			
0	ANCHORAGE?				
200	? ?				
400			UYAK LOWER LEVEL	KACHEMAK SUB-III	MOST EARLY SITES WERE DESTROYED THROUGH CHANGE OF THE LAND
600				KACHEMAK II	
800					
1000		TAKLI BIRCH	OLD KIAVAIK	KACHEMAK I	
1200					
1400					
1600					
1800					
2000	OLD ISLANDERS		OCEAN BAY II		
2200			LATE OCEAN BAY I		
2400		PEDRO BAY	(TAKLI CULTURE)		
2600		?			
2800					
3000		TAKLI ALDER			
3200					
3400					
3600					
3800					
4000					

HANDBOOK OF NORTH AMERICAN INDIANS 5 ARCTIC: Prehistory of the Pacific Eskimo Region, Donald W. Clark, pg 137

DESCRIPTIONS OF INDIVIDUAL UNITS

Alagnak Wild River

The Alaska National Interest Lands Conservation Act (ANILCA) of 1980, designated the Alagnak River, and its tributary the Nonvianuk River, as a Wild River under the provisions of the National Wild and Scenic Rivers Act of 1968. This act states that: "certain rivers of the Nation which, with their immediate environments, possess outstandingly remarkable scenic, recreational, geologic, fish and wildlife, historic, cultural, or other similar values, shall be preserved in free-flowing condition, and that they and their immediate environments shall be protected for the benefit and enjoyment of present and future generations..."

Katmai National Park and Preserve is located on the upper Alaska Peninsula. The upper seven miles of the Alagnak and all of the Nonvianuk are included within the preserve portion of Katmai National Park and Preserve and form a portion of its northern boundary. The north boundary follows the divide between the Nonvianuk/Alagnak drainage and the Kvichak/Iliamna drainage. The lower 49 miles of the Alagnak lie outside Katmai, as it runs to Kvichak Bay. Both sections, within and without the preserve, are administered by the National Park Service as a unit of the National Park system. Access to the area is by aircraft and by boat. Snow machines can be used in winter when there is sufficient ice and snow cover.

Land Ownership .

Alagnak Wild River contains about 30,800 acres. Of that acreage, 3000 acres are in non-Federal ownership and 3500 acres are land that has been applied for under the land entitlement sections of the Alaska Native Claims Settlement Act. KATM treats the waters within its boundaries as belonging to the NPS. However, with regard to the river drainages, ownership and navigable waters are two current issues between the state and NPS that have not been settled. The park continues to manage the entire area as a unit of NPS. There are about 18 native allotments totalling almost 2000 acres in this unit. Another 2200 acres of land has been transferred or is under application by the Bristol Bay Native Corporation, Igiugig Village Corporation, and the Levelock Village Corporation.

Environment

Katmai National Park and Preserve covers three physiographic regions. The Shelikof Strait coastline descends relatively abruptly from the northeast-southwest-trending Aleutian range. West of the mountains is the lake region, abutted at approximately the park boundary by the Bristol Bay coastal plain. The Alagnak is the outlet for Kukaklek Lake, and joined by the Nonvianuk which drains Nonvianuk Lake, runs westward into Kvichak Bay, which is an extension of Bristol Bay. The river runs through the Nushagak-Bristol Bay Lowland, which is a moraine and outwash-mantled

low plain having a local relief of 50-250 feet and rising from sea level to an altitude of 300-500 feet at its inner margins. In addition to the larger lakes, the lowland is dotted with numerous thaw lakes. The lowland is underlain by several hundred feet of glacial outwash and morainal deposits covered in part by silt and peat. Frequent tectonic activity, in the form of earthquakes and vulcanism have continued to directly effect life in this unit. The Peninsula was glaciated until about 10,000 BP. There are several passes connecting the lakes region and various bays. Kukaklek Lake to the mouth of the McNeil River is a short and relatively easy route. From other parts of the lakes region travel is possible via the Savonoski and Ninagiak Rivers to Hallo Bay. High mountain passes exist between Kulik Lake, Strike Creek, Kamishak Creek, and Big River, and Katmai Pass was heavily used to travel from the lakes region to Katmai Bay on the Pacific Coast until the eruption of 1912 destroyed part of it.

The lakes region lies mostly in the Hudsonian climate zone. In this zone there is a wide variety of plant communities, such as wet tundra and marshes, moist tundra, and forested areas of spruce, balsam poplar, thickets of alder, and many species of willow. Many shrubs abound in the park, including, Labrador tea, bearberry, Kamchatka rhododendron, bog cranberry, bog blueberry, and mountain cranberry. This diversity extends to the fish and fauna that inhabit this unit. All of the major species of Alaska are found in the area, including some of the richest salmon runs in the world.

Archeological Resources

The Alagnak River corridor has never been systematically surveyed archeologically. BLM and BIA have carried out minor investigations in conjunction with conveyance of native selections. Several archeological sites have been reported, informally, by area residents and park staff. Overall, there are six known sites in the corridor, four historic or late prehistoric sites that are on the Alaska Heritage Resources Survey (AHRs) and two that have not been investigated as yet. However, enough is known from nearby archeological investigations to extrapolate a cultural sequence for this unit, which parallels that of the Bristol Bay sequence in Katmai National Park and Preserve.

The earliest known cultural manifestation in the area is that of the Paleoarctic tradition. This tradition dates from around 9000-8000 BP on the Peninsula. It has been found at a site at the mouth of the Kvichak River, just north of the mouth of the Alagnak. There is also a Paleoarctic site at Iguigig, at the outlet of Iliamna Lake. The next distinctive cultural group that appears in the archeological record is the Northern Archaic tradition, which shows up around 5000 BP. It also has been identified at a Kvichak River mouth archeological site. It seems that this cultural group differs from the preceding tradition both in its origins and toolkit. This assemblage has many similarities to that of Archaic cultures of the boreal forests to the east and south of Alaska, rather than any to cultures of northeast Asia.

In the Bristol Bay region, the Arctic Small Tool tradition (ASTt) appears around 3800 BP and lasts until around 3100 BP. It has been identified in several places in

KATM, but especially at Brooks River. At Brooks River, it is interesting to note that this tradition was directly preceded by a cultural group that shows strong affinities for the Pacific Coast cultures, such as the Ocean Bay I or Kodiak tradition, that was extant at that time. With the arrival of AST tradition peoples from the Bering Sea area, this connection to the Pacific was cut off for hundreds of years.

Following the Arctic Small Tool tradition, another cultural group, the Norton tradition, appeared about 2300 BP and lasted until 1000 BP. This culture, with clear technological continuity with the AST tradition, was either part of that tradition or a separate adaptation. In any case, Norton people flourished on the Peninsula, developing a coastal emphasis, using pottery and some tools that were produced by stone grinding. It is possible that this group developed their distinctive identity in the Bristol Bay/Peninsula area and spread northward from there. An early Norton assemblage (Smelt Creek phase) has been reported from a site at Nonvianuk Lake (Dumond 1984).

The final well-identified prehistoric cultural tradition prior to European contact was the Thule tradition. The Thule people were the definitive antecedent culture of the historic Eskimo culture. This cultural tradition developed in the Bering Sea region around AD 600 and rapidly spread in the same directions as the earlier AST tradition. Gravel-tempered pottery and certain characteristic tool types appeared on the Pacific coast, on the Bristol Bay coast and at inland sites at this time, indicating communication across the Peninsula. At this time period, there seems to be a developing of the three centers of Eskimo culture that were evident at contact; Bering Sea, High Arctic, and Pacific Eskimo.

Historical Aspects

The history of this area, following European contact, parallels that of Katmai National Park and Preserve, except that this unit was not part of the original monument that was created in 1918 but was added in 1980 with the passage of ANILCA. Russian explorers first entered the area in the middle of the 18th century and this exploration was soon followed by exploitation and missionization. The fur trade and gold first attracted Russian interest but the center of Russian settlement and activity was on the Pacific side of the Peninsula, centered on Kodiak island. Russian traders and missionaries did penetrate the Aleutian Range via Katmai Pass. Following the end of Russian hegemony and the dying of the fur trade, prospectors and trappers continued to spread (as shown by Fure's cabin and Packer Scotty's cabin) but it wasn't until the huge salmon runs in Bristol Bay began to be commercially exploited that Euroamerican attention and influence became dominant in this region. Commercial fishing remains the primary economic focus of the area, with tourism and trapping being subsidiary.

Ethnographic Aspects

At the time of contact the Alagnak area was occupied by Yupik speakers. There was quite a bit of population movement and replacement going on at that time. An Eskimo group, the Alegmiut, from the northern Bristol Bay area was expanding into the Nushagak area and pushing out another group, the Peninsular Eskimo. This Pacific Eskimo group, the Peninsular Eskimo, apparently occupied the area of KATM and Alagnak west of the Aleutian Range in late prehistoric times. As the Russian hegemony took hold, the cultures of the Pacific coast were subjugated and "Russianized" but the area of west of the Aleutian Range was not completely taken over. Strong trade ties were developed, however, and under this regime the Alegmiut continued to expand while the Peninsular Eskimo retreated. As recently as 1953, natives who prior to the 1912 eruption had lived at Savonoski, a village on the upper Naknek drainage, still maintained that they were a different people from the Aglelmiut who resided at the mouth of the Naknek River on Bristol Bay. There is also some indication that a small group of Aleuts was located in a small enclave at the mouth of the Ugashik River. In addition, Dena'ina Athabascan people were expanding down the Alaska Peninsula from the Lake Clark area. The chronology and identities of the movement and diffusion of cultures up and down and across the Peninsula are primary research domains for ethnographic and archeological investigation. In fact, very little archeological research has been done on the numerous late prehistoric and protohistoric sites in the unit (of which four have been identified so far).

Discussion

Whether treated as a separate unit of the NPS or as part of Katmai National Park and Preserve, this is an important area that has not received the archeological attention that it deserves. An Archeological Overview and Assessment should be written and an inventory program instituted. The highest percentage sampling coverage possible should be attempted. This area is ideally placed for cooperative research with the State and U. S. Fish and Wildlife Service. Major research questions on the cultural history of the Alaska Peninsula, and the territorial expansion and contraction of different cultural groups can be addressed in this area.

Aniakchak National Monument and Preserve

The Alaska National Interest Lands Conservation Act of 1980 created Aniakchak National Monument and Preserve. -The act directs that they... be managed for the following purposes, among others: To maintain the caldera and its associated volcanic features and landscape, including the Aniakchak River and other lakes and streams, in their natural state; to study, interpret, and assure continuation of the natural process of biological succession; to protect habitat for, and populations

of, fish and wildlife, including, but not limited to, brown/grizzly bears, moose, caribou, sea lions, seals, and other marine mammals, geese, swans and other waterfowl and in a manner consistent with the foregoing, to interpret geological and biological processes for visitors. Subsistence uses by local residents shall be permitted in accordance with the provisions of this act."

Although cultural resources are not directly cited in the implementing language, they are part of the NPS management mandate under the Organic Act and numerous other laws and regulations. In addition, in order to properly manage and interpret the natural environment, animal populations and plant communities of these units it is necessary to develop a diachronic perspective. Humans have been part of this environment and interactive with it for at least 8000 years. The continuation of subsistence utilization of Aniakchak resources into the present is just part of a long history of such uses. A basic inventory and evaluation of the archaeological resources of Aniakchak will provide essential information about human presence and activity over the centuries.

Aniakchak National Monument and Preserve is located near the middle of the Alaska Peninsula in southwestern Alaska. Its southeastern boundary is the Gulf of Alaska, about 100 miles southwest of the Kodiak Island archipelago. On the northeast and southwest, the unit shares a boundary with the Alaska Peninsula National Wildlife Refuge. The western boundary borders the Bristol Bay lowlands. Only the northeastern boundary follows a hydrographic line, while the others run along township, range and section divisions that are not clearly discernable from the ground. The monument and preserve are not accessible by road but are accessible by plane, helicopter or boat. In the winter some snowmachine trails are open. The nearest airstrip is several miles outside the boundary with no road to the unit. There are also no port facilities so boat access is by way of beach landings.

Land Ownership

Of the total of 603,000 acres, all the land in the monument is federally owned (137,000 acres) except for one native allotment (60 acres). Within the preserve of 465,000 acres, 400,000 are federal land. There are about 11,000 acres in the preserve that are owned by the state of Alaska and various Alaska native groups, including two native allotments. In addition, about 53,000 acres in the Preserve have been selected under Alaska Native Claims Settlement Act by the state and by Native organizations but have not yet been conveyed.

Environment

Four major-landscape-types can be distinguished in Aniakchak: the rugged coastline ; the Aleutian range, whose volcanic peaks rise over 7,000 ft; the river valley zone, where rivers, ponds, and marshes are found in long northwest-trending glacially-carved valleys; and the volcanic area of the Aniakchak Caldera, dominated by evidence of recent volcanic activity.

During the Quaternary period, volcanoes in and near Aniakchak have been active, with the dominant volcanic center at Aniakchak Volcano. Ancestral Aniakchak Volcano underwent a catastrophic explosive eruption about 3400 years BP, blanketing much of the surrounding countryside with thick, fast-moving pyroclastic flows. Eruptions continued after the Aniakchak Caldera was formed.

Concurrent with the volcanic activity was a series of glacial advances that carved the landscape and deposited thick sequences of till and other glacial debris. During times of glacial maximums, ice sheets extended from the Aleutian Range well out into Bristol Bay. Changes in sea level during this period produced near-shore marine deposits in the lowlands.

There are also four physiographic zones within Aniakchak National Monument and Preserve: The Aniakchak coast, which is in the Ocean-Coastal zone, stretches for approximately 52 miles along the Pacific Ocean. The coast is rugged with precipitous cliffs, offshore reefs, and islands. Three sheer-faced peninsulas jut into the ocean creating three bays which are completely or partially within the preserve. Aniakchak and Amber Bays are large, exposed bays with wide cinder-covered beaches. Kejulik Bay is more protected, narrower, and has sandy, cinder beaches. Tidal forces are generally moderate. The Aniakchak River flows into the ocean in Aniakchak Bay. Here, ancient beach lines parallel the modern beach for several hundred feet. Behind the beach lies a large lagoon. Each of the other bays has streams emptying into it.

The Upland zone, which parallels the Pacific coastline, is formed by the Aleutian Range. Mountain peaks rarely exceed 8,000 feet in height. The mountains are interrupted by a wide saddle at the headwaters of the Meshik River that eventually flows into the Aniakchak river.

The River Valley zone is found in the eastern and western river valleys, which are very dissimilar. In the east, the rivers, such as the Aniakchak River, cut through the Aleutian mountains and ashfields. Topography is relatively abrupt and post-eruption riparian vegetation is beginning to develop. The western river valleys, such as the Meshik, are older and the topography has less relief. They tend to be heavily vegetated with extensive wetlands.

The Aniakchak volcano is considered a separate zone - the Volcanic zone. The caldera was formed by a catastrophic event 3400 years ago. The outer mountain and rim are characterized by tilted rock strata, cliffs, and huge ash-covered buttresses. The caldera averages 6 miles in diameter and encompasses about 30 square miles. The caldera floor is approximately 1,100 feet above sea level. The rim of the caldera is higher and more jagged on the eastern side.

Tundra and dense shrubs are the most prominent plant communities in the preserve. Wet tundra is found in the River Valley zone in some drainages and in the Ocean-Coastal zone near the Aniakchak Lagoon. Ponds and lakes dot the area and sedges and grasses are the dominant species. Other species include crowberry, avens, heaths, herbaceous willow, and some dwarf birch and willow. Moist tundra is found predominately in the River Valley zone and the Ocean-Coastal zone. These tundra meadows are dominated by sedges with scattered willows and birch. There is

a balsam-poplar stand in the Cinder River drainage. Shrub thickets are found in the River Valley zone and the Ocean-Coastal zone, and are presently invading the Upland zone. Thickets of alder and willow line most of the river and stream valleys of both the Pacific and Bristol Bay drainages. Alpine tundra vegetates most Upland mountain slopes and parts of the Volcanic zone. The predominant species include avens, low heath shrubs, prostrate willows, and dwarf herbs. Non-vascular plants are also an important part of these vegetation communities.

Brown bears, moose, caribou, red fox, wolverine, beaver, river otter, shorttail weasel, mink, lynx, porcupine, tundra hare, arctic ground squirrel, terrestrial birds, waterfowl, clams, freshwater fish, five varieties of anadromous fish, stellar sea lions, harbor seals, and sea otters inhabit the Aniakchak area.

Archeological Resources

The prehistory of these units is practically unknown. Almost no archeological inventory has been done on these lands. Our knowledge of the area is based on extrapolation from surrounding areas in which archeological research has been done. Even though Aniakchak is in the Southwest Alaska and Pacific cultural zone, Aniakchak appears to be in a transitional position between two cultural areas, the Aleutians and the Alaska Peninsula, both of which have long cultural sequences.

The Aleutian archipelago, which lies west of Aniakchak, has been occupied for at least 8000 years. The oldest site is the Anangula Blade site, on a small island located at the northern edge of Nikolski Bay, Umnak island. This site, which is deeply buried and sealed beneath layers of volcanic ash, has been linked to the Paleoarctic tradition that was widespread in Alaska at this time. The deeply buried nature of this site indicates that Aniakchak has the potential for similar sites.

The second cultural period that has been defined is the Aleut tradition, dating from about 4000 BP to historical times. It is marked by a lack of continuity with the Anangula period. One interesting feature of this period is that there appears to have been a population replacement at some time during the period. Dolichocephalic people were replaced by brachycephalic ones (McCartney 1984). Yet despite that the cultural development in this region appears to have been smooth and continuous.

The easternmost sites of the Aleutian midden tradition, and thus the closest to Aniakchak have been found at Izembek Lagoon and, even closer, the Port Moller Hot Springs site (about 125 miles west of ANIA). At this site, a typologically Aleutian occupation spanned the time from before 3000 BP until almost contact.

No more than 100 miles to the east of Aniakchak lies Katmai National Park and Preserve. Within Katmai the major sites at Ugashik, Naknek River and Takli Island are located. These sites, with a long history of investigation and excavation, are the type sites for the Alaska Peninsula cultural chronology. However, the Alaska Peninsula has two major physiographic zones - the Bristol Bay area on one side of the central spine of mountains and the Pacific coastal region on the other (note that a similar division occurs in Aniakchak). One archeological tradition common to both regions is the Paleoarctic tradition which dates from 9000 - 8000 BP on the

Peninsula. The later Northern Archaic tradition appeared in the Bristol Bay region around 5000 BP. This tradition, which differs strongly from the preceding one, probably had different origins. At about the same time, a separate cultural tradition emerged along the Pacific Coast of the Peninsula, eventually reaching as far as the Brooks River on the Bristol Bay side. Dumond has referred to this phase as the Brooks River Strand phase of the Kodiak tradition. Elsewhere around the Gulf of Alaska, this wide-spread tradition has been labeled the Ocean Bay I tradition. A regional variant, the Old Islander culture of Chirikof Island, shows up around 4100 BP. Chirikof Island is located in the Pacific Ocean about 75 kilometers southwest of Kodiak Island and about 75 kilometers southeast of ANIA. Its closest neighbor on the Peninsula is ANIA, and thus its prehistory could shed some light on that of ANIA.

In the Bristol Bay region, the Arctic Small Tool tradition (ASTt) appears around 3800 BP and lasts until 3100 BP. It seems to represent the actual migration of people adapted mainly to life in the arctic southward. On the Pacific Coast side, an Ocean Bay II- like cultural tradition, known as the Takli Birch phase, was in full swing contemporaneously with the AST tradition of the Brooks River.

Beginning around 2300 BP with Norton and later, at 600 AD, from Thule, we see strong influences on the Peninsula and on the Pacific maritime cultures from the Eskimo cultures of the Bering Sea and the Arctic. Chirikof Island was only sporadically occupied until around 2300 BP, when a group moved there, apparently from the Alaska Peninsula. According to Clark (1984b), Chirikof Island, at this and later times, can be interpreted as a outlier of a culture subarea located along the largely uninvestigated south-central part of the Alaska Peninsula. The technology combines Norton, Aleutian, and Alaska Peninsula flaked stone forms with Kodiak-style ground slate implements. Since the Izembek Phase (1050 AD) on the outer Peninsula in historic Aleut territory also shows characteristics of this regional co-tradition, it is possible to postulate a shifting Eskimo-Aleut cultural boundary in this area of the Peninsula. Whether this represents a linguistic and ethnic group different from those of the upper Peninsula and Kodiak/Kachemak areas or rather a continuous cultural isocline that changes over time is a major research domain for future work in this area.

Both the Aleutian and Peninsula cultural chronology are important in considering the prehistory of the area in and around Aniakchak National Monument and Preserve because it appears to have been an important cultural transition zone in which cultures, people, influences and adaptations shifted back and forth through prehistoric and historic times. The very volcanic nature of this area actually contributes to the potential for significant sites because the repeated layers of ash could have sealed cultural sites. These layers of ash also make it possible to date cultural layers in a site precisely, while at the same time providing good paleoenvironmental data. The ebb and flow of peoples and cultures, whether the area was part of the southern coast of Beringia or part of a peninsula and archipelago, is of major interest.

Currently, the park Archeological Resources Inventory lists only one known archeological site, a village site (SUT-016). It has not been extensively tested.

However, it is known, at a minimum, that there is an historic component because some oral history is on record about the site and its historic inhabitants. It is a significant site and has been listed on the National Register of Historic Places. Several other possible sites were reported as a result of the brief survey after the Exxon Valdez oil spill.

Historical Aspects

The voyages of Vitus Bering and Alexei Chirikoff in 1725 and in 1741 marked the beginning of sustained Russian interest in and exploitation of Alaska. Furs that the explorers brought back attracted the immediate attention of the traders of the Kamchatka Peninsula. Soon thereafter, fur-seekers were sending expeditions to the Aleutians and along the coasts of the Alaska mainland. In 1784, G. I. Shelikov established the first European settlement in Alaska, on Kodiak Island. Until 1804 Kodiak remained the center of Russian activity in Alaska. From there, they dominated the fur trade and expanded their control of other areas. As early as 1785, the Russians were exploring the Alaska Peninsula for the purposes of exploitation. Historians assume that Yupik-speaking people were involved in the fur trade on the Alaska Peninsula by 1790. Several trading centers developed in the Katmai area, but there is no known record of Russian use of the Aniakchak area during this early Russian period. However, in the 1800s two stores were established in the area, one on Sutwick Island near Aniakchak and one at Mitrofanina, a small village south of the Chignik villages.

Soon after the United States acquired Alaska in 1867, new economic forces entered the picture. The Alaska Commercial company replaced the Russian American Company. The fur trade declined in importance as overexploitation practically eliminated the furbearers. In the mid to late 1870s, Voronovski reported the village of Sutkhum in Kujulik Bay and one on Sutwick Island, within in easy bidarka travel of each other. In 1881 Petrov reported two settlements in the vicinity of Chignik Bay, just southwest of Aniakchak. One was the village of Kaluiak, reported as the center of a small population of caribou hunters. The other, Mitrofanina, supported a small group of Russian and Native sea otter and seal hunters.

A new industry, packing salmon, appeared around 1880 on the Alaska Peninsula. Sometime later, a cannery was built in Kukak Bay. Other economic pursuits in the area included clamming, fox farming, reindeer herding, trapping and guiding. An Alaska Packers Association (APA) bunkhouse at the mouth of the Aniakchak River is all that remains of the APA fishing venture begun there in 1917. This bunkhouse has been placed on the List of Classified Structures. It is also part of the single cultural landscape that has so far been identified and nominated to the National Register of Historic Places. It includes the Alaska Packers Association bunkhouse, the adjacent archeological Native habitation sites and a relict boat.

Ethnographic Aspects

Little is known of the Aniakchak country before European contacts. Although local (Chignik area) residents often consider themselves to be of Aleut origin, linguistic research suggests Koniag (Pacific Eskimo) origins. Researchers have located the Eskimo-Aleut linguistic boundary in the Port Moller area, about 100 miles southwest of Aniakchak bay. The historic occupants of the area between Chignik and Katmai have been variously identified by scholars as Peninsula Eskimo or Pacific Eskimo. It can be noted that while a clear boundary between Eskimo and Aleut languages appears to have been established during the prehistoric period, there may be no such boundary between the material cultures of the two groups. Any assumptions about the prehistoric and early historic occupants of the Aniakchak area will require further research.

Discussion

ANIA requires all of the basic cultural resources efforts. An Archeological Overview and Assessment is essential as a first step. An Archeological Inventory and Evaluation would then naturally follow. This project or projects would take place over a number of years, covering different segments of the park and preserve. After the establishment of a data baseline, evaluation, interpretive, and site preservation programs can be developed.

Bering Land Bridge National Preserve

Bering Land Bridge National Preserve (BELA) occupies the northern third of the Seward Peninsula, which is about 500 miles northwest of Anchorage. The peninsula is approximately 200 miles east to west, and the greatest north to south distance is 150 miles. The peninsula is the divide between the Arctic and Pacific oceans, with Norton Sound and the Bering Sea to the south and Kotzebue Sound and the Chukchi Sea to the north. The northernmost point of the peninsula, Cape Espenberg, extends just north of the Arctic Circle, and the westernmost point, Cape Prince of Wales, is only 55 miles from East Cape of Chukotka, Siberia. Separating them is Bering Strait, with the Little Diomedede and Big Diomedede islands in the middle. The north coast lands of the preserve lie along the Arctic Circle, bordered by the Bering Strait on the west, the Chukchi Sea on the north, and Kotzebue Sound along the eastern coast. The preserve lands in the interior of the peninsula are bounded on the south by the Bendeleben Mountains, a low range reaching 3400 feet above sea level. The Kugruk-River flowing north to Kotzebue Sound defines the southern boundary of BELA.

In 1980, Congress passed the Alaska National Interest Lands Conservation Act. This law redesignated the original national monument as Bering Land Bridge National Preserve. The foremost purposes of the preserve are: "to protect and

interpret examples of arctic plant communities, volcanic lava flows, ash explosions, coastal formations, and other geologic processes; to protect habitat for internationally significant populations of migratory birds; to provide for archeological and paleontological study, in cooperation with Native Alaskans, of the process of plant and animal migration, including man, between North America and the Asian Continent; to protect habitat for, and populations of, fish, and wildlife including, but not limited to, brown/grizzly bears, moose, and wolves; ...to continue reindeer grazing use...; to protect the viability of subsistence resources; ..."

As the name of the preserve indicates, a major focus of this unit is the Bering Land Bridge between Asia and North America. Archeological resources are a central facet of any endeavor to understand the flow of plants, animals, humans and their cultures in both directions across the Bering Strait. This flow has been going on since 15,000 years ago (at least) and continuing into the present. As part of this emphasis, BELA has been designated as a core area for the proposed Beringian Heritage International Park. This proposed park will involve cooperative research, interpretation and other activities with park areas in the Russian Far East. Several research programs, both in natural and cultural resources are already underway.

Land Ownership

Bering Land Bridge National Monument encompasses 2,700,000 acres. Of this acreage, 2,509,000 acres are in federal ownership. There are 95,000 acres of non-federal land within the boundaries, as well as 180,000 acres selected by Native groups to fill their land entitlement under ANCSA. This means selected but still federally owned and managed (with appropriate consultation). There are over 165 native allotments, approved or applied for, in the preserve. There are also over 26,000 acres in cemetery/historical [14(h)(1)] site applications in the preserve, which demonstrates high level of the rich cultural resources present. Other land holders or applicants are the NANA Regional Corporation, the Inalik (Little Diomedea) Corporation, and the Kikiktagruk Inupiat Corporation (Kotzebue). There are also 79 unpatented mining claims within BELA. The local villages of Shishmaref (entirely surrounded by the preserve), Deering and Wales are near or adjacent to the preserve boundaries.

Environment

Western Alaska has been joined to Eastern Siberia by "land bridges" several times in the past when glacial stages have resulted in lowered sea levels. During those times when the bridge was exposed, BELA was part of the subcontinent named Beringia. Important remnants of the Beringian paleoenvironment have been preserved in BELA, as well as a record of the changes that have taken place there since the last submergence of the bridge around 10,000 BP. The modern-day physiographic zones in BELA categorize the terrain as: Northern Coastal Plain, Rolling Stream-dissected Uplands, Imuruk Lava Plateau, Kuzitrin Flats, and the

Bendeleben Mountains. Prominent features of the northwestern coast are barrier bar/lagoon systems extending from Wales to Kividlo, which includes Lopp Lagoon and Arctic Lagoon. Noteworthy are the series of relict beach ridges that dominate the landscape at Cape Espenberg and contain significant archeological sites. Although BELA was mostly unglaciated during Wisconsin times, substantial deposits of glacial loess, gravels, silts, and a few moraines within the preserve boundary reflect the effects of glacial advances and retreats in surrounding areas. Aeolian deposits in the area, dating to Pleistocene times, include dunes as well as blanket deposits up to several meters thick.

These thick deposits are found mostly on the Northern Coastal Plain, which is of low relief, only up to 200 feet above sea level. Major drainages across the plain are the Nugnugaluktuk River, flowing east to Kotzebue Sound, and the Serpentine River flowing west to Shishmaref Inlet. A major physiographic subdivision within the coastal plain is an area of vulcanism which includes Devil Mountain and five large maar lakes. These maars are rimless craters formed by explosive eruptions which occurred during a period extending from 180,000 years ago to Holocene times. The coastal plain is also covered by thaw lakes and basins. The northwestern edge of the coastal plain is a 1.6 kilometer-wide strip of land characterized by sea coast beaches, salt water lagoons, and fresh water estuaries, as well as a dynamic barrier bar system. The Rolling Stream-dissected Uplands lie south of the coastal plain. They include such areas as Serpentine Hot Springs about 880 meters above sea level (asl), and in the eastern portion of the preserve, Trail Creek Caves at 560 meters asl. These higher elevation areas are limestone, marble, quartz, and slate exposures and are conducive to cave formation.

The Imuruk Lava Plateau is in the southeastern portion of the preserve, north of the Bendeleben Mountains. It is composed of at least five different lava flows ranging in age from 5 million years to the 2000 year old Lost Jim Flow. Imuruk Lake, Cloud Lake, and Lava Lake are prominent features in the Plateau. The terrain is generally gently rolling with isolated broad-domed summits of ancient volcanic cones. The Kuzutrin Flats border the north flank of the Bendeleben Mountains and south of the lava plateau. Kuzutrin Lake, in the Flats, is bordered by relict lacustrine beach terraces. Last but not least, the foothills of the Bendeleben Mountains form the southern boundary of the preserve.

The modern climate of the Seward Peninsula includes aspects of both maritime and continental influences. The presence of marine waters on three sides of the peninsula has an ameliorating effect during the winter season, and the inland area is drier with greater temperature extremes than the coast. The present day distribution of plants can be characterized as treeless (except willow and alder shrub thickets in alluvial and flood zones) tundra. These included shrub tundra, tussock tundra, and alpine tundra. There are also wet and dry meadows with vegetation consisting primarily of grasses.

A generalized arctic fauna is also present on the peninsula. Historically, caribou and musk oxen ranged across the Seward Peninsula. Musk oxen were eliminated by the early 1900's and reintroduced in 1970. Numerous historic accounts

document that caribou were very abundant on the peninsula prior to 1874. The peninsula probably has been an overflow area during times of high population of the arctic caribou herd. Siberian reindeer were brought to the peninsula in 1892 and population levels reached about 600,000 in the early 1930's. The present level is about 4000 animals and much of their grazing takes place in the preserve.

Archeological Resources

The cultural sequence model proposed by Giddings and Anderson (1986) is directly relevant to the preserve, as is the more recent one by Harritt (1994). The conceptual framework for much of the early research in the region of northwest Alaska focussed on the search for the origins of the historic Eskimo culture. These explanations can be lumped into two categories, one arguing development out of indigenous cultures somewhere in the central Arctic, and the other seeing the origins in northeast Asia. The more recent interpretations of the origins of Eskimo culture, indeed of most Arctic cultures, use the concept of the existence of broad co-traditions in the Bering Strait region. The ebb and flow of people, ideas and technology from east and west and *in situ* development and adaptation form the basis for looking at the cultural chronology and prehistory of this region.

BELA falls within the Tundra & Arctic zone of the NPS Alaska region. As such, the cultural sequence in the area generally follows that of northwest Alaska and the Bering Sea. Early microblade and core sites possibly associated with the early Paleoarctic tradition are generally thought to date in the Kotzebue Sound area between 10,000 and 7000 BP. The known occupation of the Seward Peninsula by bearers of this tradition is presently restricted to Trail Creek Caves in the southeastern preserve. The deposits containing Paleoarctic tradition remains are dated to 9000 BP and even deeper and earlier human occupation was postulated on the basis of modified animal bones (the famous calcaneous) that were interpreted as reflecting human activities, dating to approximately 13,000 BP. This interpretation, while not disproved, is presently considered tentative. The Paleoarctic tradition typical assemblage, containing microblades, microcores (often wedge-shaped), flake burins and large bifaces, shows definite affinities with archeological assemblages in northeast Asia, such as the Dyuktai culture of Siberia.

Although not yet documented on the Seward Peninsula, remains representing the Northern Archaic tradition were found at the Palisades site at Cape Krusenstern and at Onion Portage on the Kobuk River. It is generally considered a culture of the interior, a result of expansion of the northern boreal forests, related to a climatic warming period, and a concomitant expansion of people and/or cultural from the boreal forests and Archaic cultures south and east of Alaska. It is likely that evidence of this culture will be found on the Seward Peninsula. The best stratigraphic sequence in the preserve, at Trail Creek Caves, suggests a hiatus in occupation of that area during Northern Archaic times.

The Arctic Small Tool tradition (ASTt), has been defined as the early development of an economy that exploited sea mammals and resources of the

hinterland. People of this tradition spread across the arctic, as far east as Hudson's Bay and as far south as the Alaska Peninsula, as a recognizable technology. The origins of this technology are somewhat obscure but it certainly developed around the Bering Strait. Some artifact types appear in the eastern Siberian Belkachi culture but the manufacture and use of burin spall artifacts seems to be unique to the North American Arctic. ASTt was first recognized in the classic Denbigh Flint complex, about 4200 BP and continued through a series of related cultures, ending with the Ipiutak culture around 1000 BP. The very early AST tradition site, dated at ~5500 BP (calibrated years) has recently been found at Kuzitrin Lake in BELA (Harritt 1994). Other complexes generally included Choris, Norton, near Ipiutak, and Ipiutak. Some scholars see the Norton tradition as a separate line of development instead of as part of this continuum.

Denbigh remains have been found on the Seward Peninsula at Cape Espenberg, Kuzitrin Lake, Trail Creek Caves, and Agulaak Island in Lopp Lagoon. Choris culture in Bering Strait, marked by the first appearance of pottery (an Asian import), and a shift towards slate grinding to produce stone tools (imported from southern Alaska), was first found and identified on the Choris Peninsula east of the preserve. Choris sites in the preserve occur at Cape Espenberg, Trail Creek Caves, and Lopp Lagoon. While human occupation of the Seward Peninsula in the period 2550-2000 BP is poorly understood, in general there seems to have been regional variations on the theme of Norton-Near Ipiutak. These variations reflected differing emphases in subsistence pursuit (or just that our ability to distinguish variations in the archeological record improve as the time differential from the present decreases). Norton-Near Ipiutak sites have been located in the preserve at Kugzruk Island in Lopp Lagoon (where the presence of net-sinkers seems to indicate a focus on fishing), Ikpek, Cape Espenberg, and a trace at Trail Creek Caves. The final phase of the Arctic Small Tool tradition is represented by the Ipiutak culture, appearing about 1900 BP and continuing until about 1000 BP. The culture is best recognized by a unique and elaborate art style that shows Siberian (Okvik and Old Bering Sea), and northeast Asian (possibly Scythian) influences in addition to a continuation of the manufacture of Denbigh-like end and sideblade insets. Ipiutak remains at some locations are substantial, consisting of hundreds of houses at Point Hope and almost 100 at Cape Krusenstern. Present data indicate that Ipiutak occupations were confined to northwest Alaska. Site locations in the preserve include Trail Creek Caves and Cape Espenberg, as well as at Deering just outside of the preserve.

Following the ASTt, comes the Northern Maritime tradition, which includes Birnirk, Western Thule, and Kotzebue Period cultures, dating from approximately AD 600 to the early 19th century. This tradition is considered as being the prehistoric expression of the modern historic Eskimo culture on the North American Arctic. Birnirk, the initial expression of the Alaskan-Northern Maritime tradition occurred on the eastern side of Bering Strait at a time when Punuk culture was developing on Siberian shores and the St. Lawrence Islands. The Alaska developments are generally held to be ultimately northeast Asian in origin. However, Birnirk and Ipiutak coexisted for several hundred years on the eastern side of Bering Strait. Thus, the

relationship between Northern Maritime (and modern Eskimo) and the preceding Arctic Small Tool tradition cultures remains an important and interesting research domain. Birnirk sites have been found at Cape Krusenstern, Cape Prince of Wales and Cape Nome, i.e. on all sides of the preserve.

The succeeding Western Thule culture is dated between AD 950 and 1400. It is a continuation of a mixed sea and land mammal based economy but with a major emphasis on bowhead whale hunting. Western Thule culture followed ASTt cultures in spreading across the arctic. Western Thule settlements are large coastal villages, usually near whale migration routes. Use of thick, grit-tempered curvilinear-stamped pottery continued. Ground slate butchering implements and weapon insets replace the flaked stone implements used in the preceding Birnirk period. By this time, the seal oil lamp, toggling harpoons, umiak, and dogs were present and in full use. The Kotzebue Period, between AD 1400 and 1850, is seen as a direct outgrowth of the Western Thule culture and links the prehistoric and early historic Inupiat cultures. Kotzebue period sites and remains are more numerous than those of any preceding culture and have been documented around the full extent of Kotzebue Sound. Sites dating to this time period have been found at Wales and the southern Seward Peninsula, indicating an increasing population. Extensive trading networks and communications were maintained over northwest Alaska, the Seward Peninsula, and across the Bering Strait into Siberia.

Historical Aspects

European exploration and development began in the 1700s when Russian and then English explorers mapped the Bering Strait and the land to the north. The traditional lifestyles of the Inupiaq remained fairly stable until the mid-19th century. Although Russian trade goods had reached northwest Alaska during the 1700s through trade with Siberian peoples, they did not seem to significantly affect local people. The first direct European contact with natives of the Seward Peninsula occurred in 1816, when Kotzebue touched at several points on the northern coast. The situation changed rapidly after 1850, with the arrival of whalers and others. Fur trade expanded in economic importance, missionary activity increased, and the use of sophisticated dogsledding methods became common. In the late 1890s the gold rush in the southern portion of the peninsula attracted thousands of miners, who quickly spread over the peninsula to search for gold. Mining camps were set up at Deering, Taylor, and Serpentine Hot Springs, among other sites. The Alaska Road Commission marked cross-peninsula trails, and remnants of shelter cabins built along these trails still exist within the preserve. Mining continued at a high level on the peninsula until the 1920s. Evidence of mining activity within the preserve includes the Fairhaven Ditch, which was constructed in 1906 to divert water from Imiuruk Lake for hydraulic mining operations in the Pinnel River. During World War II, the peninsula became an important base of operations and there was another major influx of nonnatives into the area. The war, post-war military construction, recent oil

and gas operations, and the opening up of the Russian Far East have all affected the Seward Peninsula.

Ethnographic Aspects

Historic Inupiaq culture has been strongly affected by post-contact influences and epidemics. Winter settlements were small and dispersed, located mainly along the coast but occasionally inland. The semi-subterranean houses were single-roomed with tunnel entries and storm sheds. Subsistence was focused on seal, caribou, fish, birds, with some beluga hunting. Reindeer herding grew in importance, peaking in 1932. BELA includes portions of the territories of five late nineteenth century Inupiaq bands: the Tapqaqmiut (Shishmaref area), Kingikmiut (Wales area), Kauweramiut (Kuzitrin River area), Kuyugmiut (Koyuk River area), and the Piitarmiut (Cape Espenberg - Imuruk Lake area). The seasonal round followed by these groups was generally similar.

At break-up in spring, families gathered on the coast in larger communities to hunt beluga, bearded seal (and other seal species), walrus, and to gather greens. During summer, some families dispersed inland along rivers and lakes to fish, snare small mammals and ptarmigan, gather plants and eggs, and hunt waterfowl. Other families stayed along the coast to net beluga. In late summer and fall, berry gathering, caribou hunting (sometimes in large, organized drives), squirrel snaring and fishing were important. At freeze-up, people returned to winter villages where they could net seal, ice fish, snare ptarmigan and small mammals, and occasionally hunt caribou. Winter was also the time for traveling and gathering for feasts and dances. This pattern is thought to be a continuation of that of the late Kotzebue Period archeological culture.

By 1900, larger, more stable villages were established as schools, trading posts and post offices were set up. Reindeer herding became an important activity and continues to be part of life on the Seward Peninsula. Subsistence activity is still a major focus of the people living all around the preserve. Traditional cultural life is still strong on the Seward Peninsula, and sacred sites and landscapes are still recognized. For instance, in the preserve, the Serpentine Hot Springs area has long been recognized by natives for its spiritual and medicinal values. The Serpentine River valley has traditionally been used as a training ground for shamans in northwest Alaska, and the Hot Springs were known as the site where the area's most powerful shaman spirits lived. Oral history and ethnographic archeology are ongoing programs at BELA under the auspices of the Beringian Heritage program.

Discussion

Although there has been one major inventory project, a major excavation and evaluation project, and an ongoing ethnohistoric project for the preserve, less than 15 % of the preserve has been surveyed. The rich cultural and geological resources of this unit, its relationship to Beringia and its implementing language all point up the

need for a continuing inventory, evaluation and research program. The recent establishment of an archeologist position for the preserve should lead to the establishment of an ongoing program in this important area.

Cape Krusenstern National Monument

President Jimmy Carter issued a Presidential Proclamation establishing the Cape Krusenstern National Monument in 1978. The monument was created in order to protect a series of beach ridges located by J.L. Giddings in the 1940's along the southern coast of Cape Krusenstern. The beach ridges, built up over a series of thousands of years, contained evidence of prehistoric populations. The older archaeological sites were located on the back beach ridges, farthest from the shoreline, while the progressively younger sites were located closer and closer to the present day shoreline. The monument was established to protect these cultural remains and to provide an area where human migration and population processes could be studied; in this case the process of moving from the Asian continent to the American continent via the Bering Land Bridge. Further, the monument was established to provide protection for seal, other marine mammal, bird and other wildlife habitats, to protect fish resources, and to protect the viability of subsistence resources. The entire monument lies within the Cape Krusenstern National Historic Landmark boundaries. These landmark boundaries were defined in 1973 with the placement of Cape Krusenstern on the National Register of Historic Places as an Archaeological District.

Cape Krusenstern encompasses 659,807 acres along the northwestern coast of Alaska. Kotzebue Sound makes up its southern shore, while the Chukchi Sea makes up its western shore. The Noatak River, emptying southward along its eastern border into Noatak Inlet, separates Cape Krusenstern National Monument from the Noatak National Preserve. The monument is made up of two sets of low, rolling hills that reach a maximum height of 2,000 feet above sea level. The Mulgrave Hills to the north, and the Igichuk Hills to the south (which extend eastward into the Noatak National Preserve) are separated by a broad plain of coastal lowlands. This area exhibits classic thermokarst topography, with thaw lakes and ponds, ice wedge polygons, pingos and the like. To the south, the cape from which the monument takes its name consists of a series of relict beach ridges and intervening swales with numerous ponds and lakes. The entire shoreline is made up of barrier bars, lagoons and spits.

The monument is accessible in any number of ways. Generally snowmachine, boat, all-terrain vehicles, and dogsleds are used to enter the park. Air access is possible, but helicopter use is restricted and permitted only with the written permission of the superintendent. CAKR, along with KOVA and NOAT, is administered from Kotzebue, Alaska under the aegis of the Northwest Alaska Areas Office (NWAK).

Land ownership

Of the 659,807 acres within the monument 534,347 acres are federally owned. Non-federal lands make up 19% of the monument and are comprised of a variety of Native allotments under application, easements, areas selected by the Nana Regional Corporation and other village corporations, and State of Alaska navigable waters and submerged lands in Kotzebue Sound.

Environment

During the summer months, a maritime climate influences the monument. Cloudy skies coupled with frequent fogs and westerly winds are normal. Temperatures are fairly uniform, ranging from 43°F to 53°F. In the fall, after the offshore waters have froze, a more continental climate occurs, with decreased temperatures that fluctuate more drastically, from -40°F to 0°F. Precipitation is sparse, with nine inches being recorded annually. Most of this falls between July and September.

Limestone, dolomite, chert and phyllite of Precambrian to Devonian age make up the majority of bedrock materials in the inland portion of the monument. The southern end of the Mulgrave hills also contains a collection of marine sediments: dolomite, sandstone, shale, and limestone from the Devonian to Mississippian periods.

While the area of Cape Krusenstern was affected by glacial advances during the Illinoian Glaciation of the Pleistocene epoch, and boasts a unique 100,000 year old esker in the central lowlying area between the Mulgrave and Igichuk hills, it was not glaciated during the late Pleistocene's Wisconsin glaciation, the last major glaciation of the area that ended approximately 10,000 years ago.

Another unique feature of Cape Krusenstern is a beach plain with a series of successively younger beach ridges that have been deposited by longshore currents over thousands of years. The 114 ridges that have been identified record the post-glacial rise in sea level during warm spells as well as give evidence for the movement of human populations into the area, presumably from Asia, for the last 6,000 years. This beach ridge complex was of primary importance in the establishment of the monument; its purpose being to allow the study of this ridge system and the archaeological remains associated with them.

Moist tundra community, characterized by cottongrass tussocks interspersed with mosses and lichens, covers most of the monument. Species include willow, dwarf birch, Labrador tea, Lapland rosebay, mountain alder, and saxifrages. Wet tundra occupies the southern boundary of the monument, with characteristic grasses and sedges making up the community. Alpine tundra, consisting of willow and heather, and lichens and saxifrages is located in drier areas, and barren ground is found sporadically in the upland areas (National Park Service 1988). Isolated patches of white spruce trees occur in the southeastern portion of the monument.

Along the southern coast, in the beach ridge/swale configuration of Cape Krusenstern proper, a variety of brackish and freshwater planktons and algal forms are found. Eelgrass is found in marine waters and pendant grass and mare's tail grasses are found closer to freshwater sources.

A variety of mammals inhabit the area within the monument boundaries. These include caribou, moose, bears, musk-ox, wolves and sheep. Populations of red and arctic fox, snowshoe and arctic hares, porcupines, weasel, mink, lynx, river otter, ground squirrel, and muskrat also occur as do very small populations of wolverine. Marine mammals in waters within and directly adjacent to the monument include several species of seals (bearded, ringed, spotted and ribbon) and several species of whales (beluga, bowhead, gray and finback). The ringed seal in particular is a mainstay of subsistence hunters in the region. Beluga are taken from ice free leads during the sealing season, but most often are taken after the ice has left the shoreline in the spring. Other species of whales are not usually taken. Walrus are not common, but are taken if and when they do appear.

Whitefish is the most important fish for subsistence users and is abundant within the monument. Species include humpback whitefish, least cisco, Bering cisco, and broad whitefish. Arctic char is also important, as are grayling. All five salmon species are located within the monument, as are northern pike, burbot, dolly varden, herring, and sheefish.

Bird species are numerous, primarily due to the summer migration and nesting habits of many of them. A variety of ducks, geese, grebes and loons nest in the monument including the mallard duck, green-winged teal, common eider, black scoter, red-breasted merganser, Canada and snow goose, horned and red-necked grebes, and the common, yellow-billed and arctic loons. Whistling swans and sandhill cranes are the largest birds to nest in the monument. Seabird colonies house the long-tailed jaeger, common murre, arctic tern and glaucous gull. Willow and rock ptarmigan, goshawks, snowy owls and the threatened Arctic peregrine falcon are generally found inland.

Archaeological Resources

After World War II, Arctic researchers were still focused upon revealing the 'origins' of Eskimo peoples and culture. Taking his cue from Collings' observations on the chronological array of archaeological cultures at Gambell on St. Lawrence Island and relying on aerial photographs obtained during the war, Giddings investigated sets of successively formed beach ridges at Cape Espenberg, Choris Peninsula, and at Cape Krusenstern. His reasoning was straight-forward: sea-oriented (i.e. Eskimo) peoples would utilize the seaward-most beach ridges of their day; thus archaeological settlements located on older beach ridges would predate settlements on younger beachridges. Giddings theorized that if he could locate and investigate settlements that could be chronologically arranged according to their relative positions on the beach ridges, he could outline the development of Eskimo

culture in that vicinity. By comparing the archaeological sequences of one vicinity to another, he could reconstruct cultural interaction spheres. At Cape Krusenstern Giddings "hit the jackpot", finding settlements and campsites arrayed over more than 114 beach ridges, the earliest of which started to form before 4,000 years ago (Giddings and Anderson 1986). On the mainland behind the Cape Krusenstern beach ridges and lagoon, Giddings also located sites that he believed pre-dated the formation of the earliest beachridge, i.e. older than 4,000 year BP.

With the advent of locating the beach ridges of Cape Krusenstern and the subsequent analysis of archaeological materials recovered during this course of investigation, Giddings and Anderson (1986) were able to establish a cultural chronology for Cape Krusenstern spanning a 10,000 year period with a series of cultural traditions, as described below.

Older sites representing the Paleoarctic tradition and dating between 10,000 and 7,000 BP have been located within the monument as well as in the surrounding area of Kotzebue Sound. Battle Rock, the Lower Bench and Rabbit Mountain sites in the preserve all contain materials that, while not conclusively dated using radiocarbon methods, can be reliably assigned to the Paleoarctic tradition based on comparable materials discovered in the Kotzebue region proper. Giddings and Anderson (1986:311) describe the artifact types as "regular, broad, oval-platformed microblade core, often evidenced by remnants of core tablets" and a "narrow, wedge-shaped microblade core" that was collected from the Battle Rock site. These materials are similar to artifacts recovered in the low levels of Trail Creek caves to the south (on the Seward Peninsula in the Bering Land Bridge National Park and Preserve). Early microblade and core sites possibly associated with the early Paleoarctic tradition are generally thought to date between 10,000 and 7000 BP in the Kotzebue Sound area. The deposits at Trail Creek Caves containing Paleoarctic tradition remains are dated to 9000 BP and even deeper and earlier human occupation was postulated on the basis of modified animal bones (the famous calcaneous) that were interpreted as reflecting human activities, dating to approximately 13,000 BP. This interpretation, while not disproved, is presently considered tentative. The Paleoarctic tradition typical assemblage, containing microblades, microcores (often wedge-shaped), flake burins and large bifaces, shows definite affinities with archeological assemblages in northeast Asia, such as the Dyuktai culture of Siberia.

Remains representing the Northern Archaic tradition were found at the Palisades site at Cape Krusenstern and at Onion Portage on the Kobuk River. It is generally considered a culture of the interior, a result of expansion of the northern boreal forests, related to a climatic warming period, and a concomitant expansion of people and/or cultures from the boreal forests and Archaic cultures south and east of Alaska, in the Southwest Yukon (Giddings and Anderson 1986). The Palisades collection contained "corner-notched points, regular-edged unifaces, and the end scrapers" as well as "crude cobble and core tools...and a single shouldered point" and was ultimately assigned a 6,000 BP date.

The Arctic Small Tool Tradition (ASTt) was first recognized in the Denbigh Flint Complex of the Iyatayet site on Cape Denbigh, along the southeastern margins of the

Seward Peninsula. ASTt has been defined as the early development of an economy that exploited sea mammals and resources of the hinterland. People of this tradition spread across the arctic, as far east as Hudson's Bay and as far south as the Alaska Peninsula, as a recognizable technology. The origins of this technology are somewhat obscure but certainly developed around the Bering Strait. Some artifact types appear in the eastern Siberian Belkachi culture but the manufacture and use of burin spall artifacts seems to be unique to the North American Arctic. ASTt first developed about 4200 BP and continued through a series of related cultures, ending with the Ipiutak culture around 1000 BP. Other complexes generally included Choris, Norton, near Ipiutak, and Ipiutak. Some scholars see the Norton tradition as a separate line of development instead of as part of this continuum.

The Northern Maritime tradition, which includes Birnirk, Western Thule, and Kotzebue Period cultures, dates from approximately AD 600 to the early 19th century. This tradition is considered the prehistoric expression of the modern historic Eskimo culture of the North American Arctic. Birnirk, the initial expression of the Alaskan Northern Maritime tradition occurred on the eastern side of Bering Strait at a time when Punuk culture was developing on Siberian shores and the St. Lawrence Islands. The Alaska developments are generally held to be ultimately northeast Asian in origin. However, Birnirk and Ipiutak coexisted for several hundred years on the eastern side of Bering Strait. Thus, the relationship between Northern Maritime (and modern Eskimo) and the preceding Arctic Small Tool tradition cultures remains an important and interesting research domain. Birnirk sites have been found at Cape Krusenstern, Cape Prince of Wales and Cape Nome, on all sides of the preserve.

The succeeding Western Thule culture is dated between AD 950 and 1400. It is a continuation of a mixed sea and land mammal based economy but with a major emphasis on bowhead whale hunting. Western Thule culture followed ASTt cultures in spreading across the arctic. Western Thule settlements were large coastal villages, usually near whale migration routes. Use of thick, grit-tempered curvilinear-stamped pottery continued. Ground slate butchering implements and weapon insets replace the flaked stone implements used in the preceding Birnirk period. By this time, the seal oil lamp, toggling harpoons, umiak, and dogs were present and in full use. The Kotzebue culture period, between AD 1400 and 1850, is seen as a direct outgrowth of the Western Thule culture and links the prehistoric and early historic Inupiat cultures. Kotzebue period sites and remains are more numerous than those of any preceding culture and have been documented around the full extent of Kotzebue Sound. Sites dating to this time period have been found at Wales and the southern Seward Peninsula, indicating an increasing population. Extensive trading networks and communications were maintained over northwest Alaska, the Seward Peninsula, and across the Bering Strait into Siberia.

Historical Aspects

The "Iqatngut" or trade fair took place traditionally in the Kotzebue region. This trade fair attracted Native peoples from the surrounding area until the establishment of Nome at the beginning of the 20th century and was an important social activity for the peoples of the area. The 1900's brought the introduction of reindeer herding to the local population. Herding was eventually established as a 'traditional' lifestyle and allowed a more stable lifestyle than was previously possible. Yankee whalers frequented the area during the hey-day of whaling area and the last battle of the Civil War (CSS *Shenandoah* took Yankee whaling vessels off East Cape on June 28, 1865) was fought here. The Alaska Road Commission also figures prominently in the history of the area. The road commission cabin at Anigaaq and four other historic structures have been documented and are currently under study for inclusion on the List of Classified Structures (LCS).

During the 1890's the gold rush that originated in southern Alaska spread to the Seward Peninsula and then north to the Kotzebue area. Another historically significant event highlights a turning point in the relationship of the United States government to the public with regard to disclosure of its activities, their costs and consequences. "Project Chariot", the creation of a deep-water port by underground nuclear detonations, was proposed for Cape Thompson, located about fifty miles northwest of CAKR, in the late 1950's. The controversy over "Project Chariot" had national effects (the National Environmental Policy Act) and seasoned many of the region's current leaders. Large-scale Euroamerican settlement and enterprise largely bypassed northwestern Alaska. The NANA Region remains ~90% Inupiat today. Thus the historical resources of the region relate primarily to regional Inupiat history rather than to the more traditional themes of Euroamerican expansion and exploitation. Historical resources, with a few exceptions, cannot be separated from ethnographic resources.

Ethnographic Aspects

Despite drastic population reductions and dislocations beginning in the latter half of the 19th century, the descendants of the early 19th century populace remain in northwestern Alaska. These descendants still derive a significant portion of their sustenance and identity from the land and its resources. The life experiences, oral traditions, traditional knowledge and current endeavors of the Inupiat of northwestern Alaska are rooted in the landscape and its resources. Archaeological, ethnographic, historic and contemporary perspectives perform overlap and become blurred. Many current practices are discernable transformations of traditional activities. For example, the timing and kinds of activities held at Thanksgiving and Christmas and at the NANA Regional Corporation's annual meeting identify these gatherings as modern counterparts of the fall "kivgiq" or messenger feasts and the "katirut" or annual gathering of the members of each of the early 19th century societies.

Seasonal settlements of the 19th century Kivallirmiut, Napaaqturmiut, Nuataarmiut and Qikiqtarungmiut Inupiat groups were located within the monument or on sea ice immediately offshore. Some members of every one of the 19th century Inupiat societies of northwestern Alaska annually visited the "qatngut" or trade fair at Sisualik, within the monument, or at nearby Kotzebue. The traditional "qatngut" or trade fair, drawing visitors from as far away as Uelen in Chukotka was held at Sisualik or Kotzebue in early July throughout the 19th century. In all probability, all groups (e.g. Point Hoppers, Diomeders, northeast Asian Chukchi) that visited the qatngut received, in trade, products and resources derived from lands now designated parklands.

Visitors from Little Diomed Island continued their trading visits through the 1950s. This traditional meeting of neighbors, partners and kin is now incorporated into the American Fourth of July celebration. Although modern equipment is used, caribou are still killed while crossing the river in the vicinity of Onion Portage, just as they have been for millennia.

The Inupiat residents and neighbors of CAKR, KOVA and NOAT are park resources in several real senses. ANILCA-guaranteed subsistence use of parkland resources highlights an ecosystem continuum that includes man. Using the "direct historical method" or "upstreaming", anthropological researches can link the Inupiat to the archaeological manifestation known as the "Arctic Woodland Culture" which began about 1250 A.D. Some researchers have extended more tenuous ethnic linkages far back as "Denbigh Flint complex" times, about 4,000 years ago.

Thirty years ago anthropologists had the opportunity to work with Elders whose grandparents', and in some cases parents', memories of customs and life prior to sustained Euroamerican contacts were clear. According to Burch, who began his research in the region in the 1960s, comprehensive and integrated views of the 19th century no longer may be obtained from single persons, but must be painstakingly reconstructed from bits and patches of information obtained from many persons.

Rich data pertaining to the last ninety years is available. For example, several families within the region have four living generations of same-gender adults; comparative generational life histories of families can provide powerful insights into changing values, customs and into changing relations with polities and economies outside the region. Written records of reindeer herding are available from the turn of the century through the 1950s and can be supplemented by personal accounts of living persons who once herded deer. Many people can fully describe the rigors of a subsistence lifestyle before outboard motors, snowmachines, scheduled air traffic, radio and television and jet-delivered groceries, hardware and drygoods.

Two studies that are in preparation should provide excellent ethnoarcheological data as well as baseline data for archeological interpretation. In the early 1980s, NANA commissioned Ernest S. Burch, Jr. to prepare a ten volume encyclopèdia for the region. Burch has conducted research on the region for more than thirty years and his unpublished notes and command of the anthropological literature is unequalled. Volume II, Geology, and Volume V, The Inupiaq Nations of Northwest

Alaska, have been published. Proposed Volumes VI - X will cover ethnographic topics from the early 19th century to the present.

Another potentially productive source for ethnographic data pertaining to parklands in northwestern Alaska is "Inupiat Ilitqusiat", occasionally referred to as "the Spirit Movement." The purpose of Inupiat Ilitqusiat is cultural revitalization, the celebration of Inupiat Heritage.

Discussion

At present, human occupation of northwestern Alaska spanning more than 8,500 and perhaps has much as 14,000 years can be posited. However, beyond 4,000 years ago our vision is very murky and the culture historical models now premised on very limited data are likely to be over-turned by any, perhaps every, new data set derived from competent and comprehensive excavations in northwestern Alaska.

In order to identify and evaluate any ethnographic resources within the park units, the Service must work cooperatively with the Inupiat. Place-names, gravesites and old villages acquire meaning and significance through Inupiat traditional knowledge and lore. The function and social context of items of material culture no longer in use may only be understood through the memories of Inupiat Elders. ANILCA recognizes the resource value of local communities to the parks and other conservation units and contain provisions for local hire.

Five essentially contiguous parklands (BELA, CAKR, NOAT, KOVA, and GAAR) include 19 million of the most promising acres for investigating the peopling of Alaska and the Western Hemisphere. Unlike other historic parks whose resources pertain to one or very few cultural groups and time periods, these five northwest Alaskan parks are potentially significant to all aboriginal groups in the hemisphere. Undiscovered and under-investigated archaeological resources in National parklands in northwestern Alaska will prove keystones to our understanding of late Pleistocene and early Holocene cultural development in Alaska and of the initial peopling of the Western Hemisphere.

Denali National Park and Preserve

Denali National Park and Preserve (DENA), founded in 1917 as Mount McKinley National Park, is one of the oldest park units in the United States. Reasons for the establishing of the park were to stimulate travel to Alaska by tourists and sightseers and to preserve the area's game and natural scenery. The Alaska National Interest Lands Conservation Act of 1980, Section 202 established Denali National Preserve, redesignated Mount McKinley National Park, and significantly expanded the boundaries of the unit. The implementing language for the original park was retained and the new park additions and designated preserves were to be managed to protect and interpret the entire mountain massif, and additional scenic

mountain peaks and formations; and to protect fish and wildlife populations and habitat; and to provide continued opportunities, including reasonable access for mountain climbing, mountaineering and other wilderness recreational activities. Though not specifically mentioned in the implementing language, cultural resources are part of the NPS mandate under the Organic Act and numerous other laws and regulations. In addition, in order to manage and interpret the natural environment, animal and plant communities and human impacts in these units, it is necessary to develop a diachronic perspective. Humans have been part of this environment and interactive with it for more than 11,000 years. Park and preserve resources have been utilized by at least five different Athabaskan groups over the last several hundred years.

Land Ownership

Denali National Park and Preserve encompasses slightly more than 6,000,000 acres. In the park are 4,716,000 acres of which 4,700,000 acres are federally owned. The preserve contains 1,311,000 acres of which 1,258,000 acres are in federal ownership. Approximately 2,125,000 acres are in designated wilderness status. About 83,000 acres are under application by the State of Alaska, Doyon Regional Corporation, Minchumina Natives Inc., Ahtna Regional Corporation, and Cantwell Village Corporation. Other interests include Native Allotments, Cemetery/Historical [14(h)(1)] sites, various inholdings, and over 9,000 acres of patented and unpatented mining claims.

Environment

The park and preserve lie in the interior of Alaska between Anchorage and Fairbanks. They form the geographic center of an expanse of wilderness south of the Yukon River, west of the Tanana River, and north of the Susitna River. DENA is roughly bisected on the diagonal, with a southern half comprised of McKinley, its glaciers, rivers and surrounding lesser peaks, and a northern half characterized by tundra-carpeted lowlands, hills, and flat glacial valleys drained by glacier-fed rivers, lakes, and streams.

The mountainous regions of the park and preserve are part of the Alaska Range, which extends across southern Alaska in a wide arc, with Mt. McKinley near the approximate apex of the arc. In the vicinity of Mt. McKinley, the Alaska Range forms a series of rugged, parallel, glaciated ridges rising from 6000 and 9000 feet in elevation interspersed with much higher peaks. The peaks are perennially snow and ice-covered above 6000 feet. This region is also marked by the presence of massive, active glaciers such as the Kahiltna, Ruth, Tokositna, Yentna and the Muldrow. The largest of these range from 30 to 45 miles long. Streams and rivers are braided and glacial in origin, flowing both to the north and south.

North of Mt. McKinley lie the foothills of the Alaska Range, characterized by more gentle ridges, 2000 to 4000 feet in elevation, separated by rolling lowlands.

The foothills are incised by several north-flowing streams, which form steep canyons across the ridges and broader, flat valleys in the lowlands. Presently it is mostly unglaciated but there was Pleistocene glacial activity that affected the landforms. The lowland areas of the park and preserve that extend beyond the Alaska range are part of a broad depression known as the Tanana-Kuskokwim Lowland named for the two major drainages that are found there. This region was formed by outwash deposits of the glaciers and rivers of the Alaska Range. In some places, the deposits are marked by moraine topography and, in others, extensive sand dunes and loess deposits are present.

Climate has remained essentially constant since the early Holocene, which is marked by climatic warming, retreat of Pleistocene glaciers and rising sea levels. Expanding boreal forest replaced cold, dry grasslands and human populations had to adjust as what had been part of Beringia became part of interior Alaska. Today, the north and south regions of DENA are in two different climatic regions because the Alaska Range blocks the moisture from the Gulf of Alaska from moving north. Thus south of the Alaska Range the climate is a transitional maritime-continental one with more moisture, and cooler summers and warmer winter temperatures. North of the Range is a continental climate - drier, with extreme temperature fluctuations both in summer and winter.

Vegetation is highly varied with many different ecomiches. Broadly characterized as dominated by boreal forest (or taiga), DENA has at least five major vegetation zones. These are, in order of rising elevation, Low Brush Bog, Bottomland Spruce-Poplar Forest, Upland Spruce-Hardwood Forest, Moist Tundra, and Alpine Tundra. The park and preserve area is home to at least 33 species of mammals, 92 species of birds, and 18 species of fish. Grizzly bear, black bear, moose, caribou, wolf, red fox, Dall sheep, wolverine, lynx and snowshoe hare are some of the major mammal populations. Once much more abundant, on both sides of the Alaska Range, salmon runs are still found in streams originating in the Kantishna Hills.

The archeological potential for the occurrence of early sites (as exemplified by the nearby Dry Creek site) in DENA is very high due to the late Pleistocene and Holocene paleoenvironment. Research in the Nenana Valley has defined a series of local glacial episodes - the Browne, the Dry Creek, the Healy, and the Riley Creek glaciations. Within the latest, the late-Pleistocene Riley Creek Glaciation, four distinct periods of glacial advance have been identified. Only an identifiable series of outwash plains and terraces remain of all but the earliest glacial periods. The Dry Creek terraces are the highest and the Riley Creek terraces, which are below the Healy terraces, are the lowest. The time period that appears to correlate with the earliest known human occupation of the area is that of the Riley Creek glaciation. Some of the terraces have deep deposits of loess on them. They provide an excellent medium for archeological and paleontological preservation (as at the Dry Creek site).

Archeological Resources

An excellent archeological Overview and Assessment (Griffin 1990) provides a thorough review of our current knowledge and the status of the archeological resources in DENA. As of 1990 there were 187 recorded cultural sites in the park and preserve. Eighty-four of the sites are prehistoric or protohistoric. Twenty of the prehistoric sites are isolated artifacts found on the ground surface. Another 53 sites were also surface-only lithic scatters. Only 11 of the known prehistoric sites have subsurface cultural materials and those are mostly very shallow. Deep, stratified deposits, such as that found at Dry Creek which is just north of the park boundary, are undoubtedly present in the park and preserve but have not yet been discovered. DENA does have a diverse and extensive curatorial collection of prehistoric (and historic) items; however, the collection needs more organization and research.

Another category of archeological site that is important in DENA is that of historical archeology sites. There are 104 recorded historical archeological sites in DENA (as of 1990) of which 51 are mining related sites. In general, historical archeology has been relatively neglected in Alaska and DENA. The NPS Cultural Resources Mining Inventory and Monitoring program has developed a database of such resources as well as a contextual framework for such resources. However, a major and expanded effort to include this category of historic archeological sites needs to be made.

Additionally there are ethnographic sites, such as Geese House, that need to be included in the archeological universe for research in this park and preserve. The Denali area was used historically by the Koyukon, Dena'ina, Ahtna, Kolchan, and Tanana Athabaskan Indians. Griffin has pointed out that one of the main problems with the current inventory of known cultural sites in DENA is the inadequacy and inconsistency of the site records as well as the loss over the years of much of the data.

Paleontological, geological and archeological research has revealed that during much of the Pleistocene the environment of the North Alaska Range was dramatically different than it has been for the last few thousand years. Much of the Interior remained ice-free and vast areas supported a dry, treeless grassland, termed the "mammoth steppe" after the now extinct woolly mammoth that once roamed the region along with many other late Pleistocene species. Between 13,500 and 11,000 years ago the grasslands had begun to shrink as woody shrub plants appeared. Around 10,000 years ago, the climate had become warmer and moister with shrub tundra becoming prevalent and trees appearing and spreading rapidly. This trend continued until boreal forest had extended throughout the Alaska Range by 3500 BP. There were also concomitant changes in animal populations as modern populations and communities appeared.

DENA is part of the Interior cultural zone of the NPS Alaska region. A brief overview of the cultural history of DENA, based on archeological research statewide as well as in the Interior, reveals that this area has been inhabited by humans with many different cultures and adaptations for thousands of years. Important sites such

as Lake Minchumina, Carlo Creek, Healy Lake, Dry Creek and other Nenana Valley sites, Broken Mammoth and Swan Point, and the Tangle Lakes district border DENA on all sides. A National Register property in the park is the Teklanika site, which, based on the lithic technology, West has interpreted as 10,000 or more years old. Other research has indicated an age around 3500 years old. [This site exemplifies some of the interpretive difficulties with West's proposed Denali Tradition]. The archeological sequences in the Interior mirror the general sequence in the state but there have been exciting new sites found here that make this region one of the most interesting and potentially significant archeological areas in Alaska.

For the past 25 years, the earliest archeological culture in Alaska has been identified as the American (or Siberian-American) Paleoarctic Tradition. Recently, however, discoveries at the Nenana Valley archeological sites just northeast of the park, have led to the hypothesis that another group of people was also extant at around 11,000 BP in the Denali area. The Nenana Complex, as it has been called, lacks the microblades and microcores that characterize the Paleoarctic tradition assemblages. While not yet firmly dated or delimited, Component I, which represents the Nenana Complex at the Dry Creek site, stratigraphically underlies Component II, the Paleoarctic tradition assemblage there. It has recently been hypothesized that the Nenana Complex represents occupations by Paleoindian groups linked to the Clovis Fluted Point groups of the continental U.S. The newly analyzed material from the Mesa Site north of the Brooks Range has also been interpreted as having Paleoindian similarities and the existence of a Northern Paleoindian Tradition has been suggested. Contained within this hypothesis is the assumption that the bearers of this tradition were "Amerind" populations, not Arctic or Eskimo groups as many see the Paleoarctic peoples. Also, as of 1994 no cultural antecedent for this hypothesized tradition has been found in Siberia or Northeast Asia.

Paleoarctic Tradition (11,000-8000 BP) assemblages have been found on both sides of the Bering Sea. Within the broad and geographically widespread Paleoarctic tradition, researchers have defined regional variants. Most notable for Interior Alaska is the Denali Complex, as seen in Component II at Dry Creek and the Chindadn Complex from the multicomponent Village site at Healy Lake. The Dry Creek assemblage has been radiocarbon dated to approximately 10,000 BP and the Chindadn complex to about 11,000 BP. The Denali complex was originally formulated on the basis of artifacts from four Interior archeological sites - the Campus Site at UAF, the Donnelly Ridge Site at Paxson and the two Teklanika sites in DENA. Such assemblages have been dated between 12,000 and 8000 BP. However, recent research has come up with dates in the 3000 BP range for the Campus Site. This suggests the possibility that the Denali complex represents two or more cultural units instead of a single, lengthy cultural complex that changed over time. The Teklanika sites are currently being reevaluated and dated by the NPS in hopes of resolving this controversy.

Another geographically widespread archeological tradition in Alaska is the Northern Archaic tradition, which is well-represented in the area of the park and preserve. Originally, the arrival of this cultural manifestation was linked to the

spread of the boreal forest northward at this time period and it was seen as originating in the Archaic cultures of the southern boreal forests of North America, either by diffusion or migration. One interesting fact about the Northern Archaic tradition is that there appears to have been two facies of it - those with characteristic Northern Archaic assemblages without microblades (Onion Portage, Component IV at Dry Creek) and those with both (Kurupa Lake, Tuktu, Lake Minchumina). The mixed assemblages suggest the possibility that there was first migration and then cultural exchange and adaptation between the resident Paleoarctic people and the newly arrived group from the south and east. This would be especially noteworthy if the Northern Archaic represents an "Indian" group and the Paleoarctic an Arctic/northeast Asian people. Important Northern Archaic sites in the DENA area are the Healy Lake Village site with a notched point and microblade assemblage, the Minchumina tradition at Lake Minchumina which is also mixed, Component II at the Butte Lake site in the Alaska Range which is a mixed assemblage radiocarbon dated at 5000 BP, and the non-microblade assemblage of Component IV at Dry Creek.

While not commonly included in discussions of Interior Alaskan chronology, the coastal-based and arctic-oriented Arctic Small Tool tradition, which runs from 4000 BP to 1500 BP, if the later Norton and Ipiutak stages are included, has been identified at a few Interior sites. The Ipiutak stage, dated at approximately 1400 BP shows up as an apparently intrusive occupation at Lake Minchumina, just west of the preserve.

The last prehistoric tradition that has been defined for the Interior is the Athabaskan Tradition which dates from 1500 BP to historic times. There is some scholarly debate over just how far back in time the Athabaskan tradition can be traced. How the tradition is conceptualized seems to determine one's position on the controversy. If the reference is to the definitive ancestral populations of the historic and modern Athabaskans who speak one of the dialects of Athabaskan and are ethnically identified with the historic inhabitants of the Interior and boreal forest regions of Alaska, then a shallow time depth (1500 BP) is the preferred position. If a more general definition is used, one that includes an "Amerind" Beringian population that migrated into Alaska from northeast Asia and later developed into Athabaskans, then an earlier date of about 11,000 BP is accepted. The latter group sees the Denali Complex or the Northern Archaic tradition as the root prehistoric cultures the modern Athabaskans. The Healy Lake Village and Garden sites are often cited as evidence for an Athabaskan tradition stretching back to 11,000 BP.

In general, the evidence for a later Athabaskan tradition is considered stronger and more reasonable. In this interpretation the Athabaskan tradition refers to the ethnographically identified Athabaskan cultural pattern that followed the Northern Archaic tradition; this usage is distinct from the concept of a prehistoric ethnic group from which modern-day Athabaskans developed. Since one important characteristic of historic Athabaskan groups was cultural diversity, flexibility and local specialization in land use and subsistence, the "Athabaskan cultural pattern" is hard to isolate and difficult to trace in the archeological record. The more recent the site, the more definitive the identification of the cultural pattern. A general statement of the pattern

would include evidence of a trade network (obsidian and copper); a greater reliance on bone and antler tools than on finely worked lithic tools; decorative items such as beads, buttons and quills; the use of *tchi thos* or boulder-spall scrapers; unilaterally barbed bone points; bone gaming pieces; caribou tibia fleshers; and the geometric decoration of bone and antler items.

While few positively Athabaskan archeological sites of any age have been located and excavated several more recent sites have yielded important information. A protohistoric Athabaskan component was excavated at MMK-004 at Lake Minchumina. Other well-known Athabaskan tradition archeological sites that are not as close to DENA are GUL-077 near Gulkana, Dakah De'nin's Village near Chitina, Dixthada Village in the upper Tanana Valley, and two sites along the Gulkana River. GUL-077 has been dated approximately 500 to 1000 BP and seems to have been occupied sporadically as a camping area over several centuries. Like Dixthada and Dakah De'nin's Village, GUL-077 is possibly connected culturally and technologically with the Ahtna, the historic inhabitants of the area. As is obvious from this brief description, the Athabaskan tradition deserves a great deal more research, especially when intercalated with ethnographic research.

Historical Aspects

As Griffin (1990:79) states "Without a well-defined research program for historical archeology, an important category of DENA's archeological resources has been [and will continue to be] overlooked." Most historical sites have archeological values in that the physical remains contain information about the human activity that occurred at that site that can only be elucidated by archeological methodology. The information thus produced can be very valuable in the determination of significance, management, preservation and interpretation of historic sites. Since DENA contains known historic sites with at least 104 of them already recorded, this area of research needs incorporation in inventory and research plans. The Cultural Resources Mining Inventory and Monitoring program (CRMIM) is a good example of this type of effort.

Although Bering's voyages to the Aleutians and Prince William Sound occurred in 1741, it was almost a century before active exploration began in the Interior. However, the influence of Euroamerican contact, in the form of trade and possibly disease had reached the Interior prior to actual exploration. By the late 1880's a few prospectors, explorers and traders had visited the Interior and several of them noted Mt McKinley, which was named by prospector W.A. Dickey in 1896. With the advent of the 1898 gold rush, the U.S. government took a more active role in the exploration and governing of the territory. U.S.G.S. and U.S. Army surveyors and explorers arrived in the DENA region.

The first-extensive exploration of DENA occurred during a 1902 U.S.G.S. expedition led by Alfred Brooks. As news of the grandeur of Mt McKinley spread, efforts to scale the peak began and intensified. Both of the peaks were climbed by 1913. Recently, one of the base camps used by the successful 1913 Karstens, Stuck, and Harper team was located and recorded as an historic site (MMK-094).

At the same time that the mountain climbing efforts grew, the gold fever also led to an influx of Euroamericans. Gold had been discovered in 1903 in the Kantishna Hills by members of the unsuccessful Wickersham Mt. McKinley climbing team. This led to the short but vigorous Kantishna Gold Rush of 1905-1906. By 1907 most of the miners had left the area but a small number remained and active mining has continued until the present day.

The Alaska Road Commission, organized in 1905, built and maintained roads and trails (often following aboriginal trail systems) in the area. The ARC was active within present DENA boundaries. Construction of the Denali Park road was begun in 1923 and completed into Kantishna by the late 1930's. The Alaska Railroad line from Seward to Fairbanks was begun in 1915 and completed in 1923. Maurice Moreno became the first permanent resident of the park when he built a roadhouse in the McKinley Park Station in the early days of the railroad construction. His grave and the remains of the roadhouse have been recorded as sites DENA-81-005 and HEA-059 (see compliance file # 009-91-DENA). River and air transportation also developed by the early 1900's. One route, by canoe to the Kuskokwim River from the Kantishna River by way of a portage at Lake Minchumina had been pioneered by native groups.

Mt McKinley National Park was established in 1917, largely through the efforts of Charles Sheldon. He was a well-known big game hunter and naturalist whose first trip into Kantishna was in 1906. He saw that the game populations, especially that of the Dall sheep, were being seriously impacted by hunting to feed the prospectors and construction crews. The first Superintendent was appointed in 1921. He was Harry Karstens, successful McKinley climber and a friend of Sheldon.

Ethnographic Aspects

A recent native place names study of the Kantishna Drainage in DENA (Gudgel-Holmes 1991) found a rich legacy of information and use of this part of DENA. It is obvious that the same type of research would reveal the same for most of the park's area. The region was historically important to at least five Athabaskan groups. It remains significant in the minds and lives of former residents, some of whom return seasonally to pursue subsistence activities. The five groups, each speaking a different Athabaskan language, were the Lower Tanana, the Upper Kuskokwim (Kolchan), the Koyukon, the Ahtna, and the Dena'ina Athabaskans. The Lower Tanana and the Upper Kuskokwim languages were mutually intelligible and are believed to have been at one time two dialects of the same language before they were separated by the incursion of Koyukon between them in the mid-1800s.

Northern Athabaskans inhabited the boreal forest and were considered primarily large game-hunters; with salmon being a dominant feature of their seasonal round when available. Socially, Athabaskans lived in small groups of related people and recognized their descent through the maternal line. Semi-permanent villages, consisting of many dwellings, each shared by several families, formed the primary winter settlement; villages for the more sedentary groups, where salmon played a

major role in the economy, had larger populations. Other types of settlements consisted of seasonally-used hunting and fishing camps, and single-use kill sites.

Mobility was a trait that characterized all of the Athabaskan groups' use of the land. In addition to their usual wide ranging activities within their home territory for subsistence activities, they were continuously expanding or coalescing their use area as the pressures of adjacent groups or resources dictated. Rarely were territorial boundaries sharply defined, at least not for long. Within the various main groups, numerous bands formed and reformed in various seasons and locations.

Discussion

As the Overview and Assessment points out, major needs for this park and preserve are a database management system to make sense out of and preserve the existing data on the archeological resources of DENA. Research on late prehistoric and protohistoric sites, linked to ethnohistoric research, is also needed as these relatively ephemeral sites are disappearing. In addition, historic archeology, especially with the extensive record of mining in the park and preserve, as well as the establishment of the park and the building of the railroad, should be part of any cultural resources program. Overall, there is a need for a continuing inventory and evaluation program in this park and preserve, as the new finds and interpretations of the Nenana Complex and the Northern Paleoindian tradition show.

Gates of the Arctic National Park and Preserve

Gates of the Arctic National Park and Preserve (GAAR) was created in 1980 under the Alaska National Interest Lands Conservation Act (ANILCA). The implementing language states that the park and preserve "shall be managed for the following purposes, among others: To maintain the wild and undeveloped character of the area, including opportunities for visitors to experience solitude, and the natural environmental integrity and scenic beauty of the mountains, forelands, rivers, lakes, and other natural features; to provide continued opportunities, including reasonable access, for mountain climbing, mountaineering, and other wilderness recreational activities; and to protect habitat for and the populations of fish and wildlife, including, but not limited to, caribou, grizzly bears, Dall sheep, moose, wolves, and raptorial birds. Subsistence uses by local residents shall be permitted in the park, where such uses are traditional..." Though not specifically mentioned in the implementing language for GAAR, Section 101(a) and (b) of ANILCA specifically states that (a) "In order to preserve for the benefit, use, education, and inspiration of present and future generations certain lands-and-waters in the State of Alaska that contain nationally significant natural, scenic, historic, archeological, geological, scientific, wilderness, cultural, recreational, and wildlife values, the units described in the following titles are hereby established." (b) "It is the intent of Congress in this Act to ... protect the

resources related to subsistence needs; to protect and preserve historic and archeological sites, rivers and lands, ..."

GAAR is known as the "Wilderness Park" and many managers and visitors think of it as untouched by humans. However, in order to properly manage and interpret the natural environment with its animal populations and plant communities it is necessary to develop a diachronic perspective. It is only through the study of the cultural resources in GAAR that we can gain an understanding of the effect that human interaction has had over the millenia. Humans have been part of this environment and interactive with it for at least the last 12,000 years. It is quite possible that some of the earliest migrants to the New World lived in this area. Park and preserve resources continue to be used by the local rural population in and around GAAR. Both the General Management Plan and Resource Management Plan (1993) state that one of the objectives of park management to "identify, evaluate, and provide appropriate treatment for historic and prehistoric sites and structures.

Land Ownership

The park and preserve contain about 8,470,000 acres (13,240 square miles) all of which lies north of the Arctic Circle. It is approximately bisected by the central Brooks Range running east-west. Significant parts of GAAR extend north and south of the Continental Divide. Gates of the Arctic National Park and Preserve contains 7,524,000 acres in the park and 950,000 acres in the preserve. About 259,000 acres are not in Federal ownership. Of those acres, 16,540 are under application by the State of Alaska, Doyon Limited Regional Corporation, Arctic Slope Regional Corporation, and Anaktuvuk Pass Village Corporation. There are a number of native allotments, lode and placer mining claims. A major land management factor in GAAR is that about 7,263,000 acres are in Wilderness status.

Environment

GAAR is a rough rectangle straddling the east and central Brooks Range. It is bounded on the east by the Middle Fork of the Koyukuk River and the oil pipeline and the Haul Road, which provides access to this area of the park. It is bounded on the north by the Arctic Foothills, including the discontinuous Castle Mountain unit, and the North Slope of Alaska. The western boundary is roughly at the Baird Mountains and Noatak National Preserve. The southern boundary is uneven, extending south of the upper Kobuk River in the east and just west of Wild Lake in the west.

Four major physiographic zones run horizontally across the park and preserve. Northernmost is the southern section of the Arctic Foothills, which is characterized by east-west trending linear ridges and irregular buttes with interspersed tundra plains. These ridges have been regular travel routes in aboriginal times. Interestingly, a major part of the zone was unglaciated during the late Pleistocene. The largest physiographic zone of the park and preserve is the central Brooks Range. The mountains in the Brooks Range are east-west trending and rise to heights of 7000-

8000 feet in the north and 4000-6000 feet in the south. Obviously, these rugged mountains, which have been subject to several glacial episodes in the Pleistocene and Holocene, have been a significant barrier to animal and plant, and human movement. The third physiographic region, the Ambler-Chandalar Ridge and Lowlands crosses the southern preserve. Large lakes such as Selby, Narvak, and Nutuvukti are located in this zone. The last region, the Kobuk-Selawik Lowlands zone encompasses the southern most portion of the southern preserve of GAAR. The headwaters and upper Kobuk river are located in it.

There are basically two major climate and environmental zones in GAAR. South of 68 degrees of latitude is a mixed Boreal forest containing spruce, birch, and poplar while north of 68 degrees is treeless tundra. The north side of the Brooks Range has an arctic climate. The influences of the Arctic Ocean and "north slope" weather patterns are dominant. Very little precipitation occurs and this has been called an "arctic desert." South of the Brooks Range, in the lower elevations, the climate is subarctic or Continental and is generally considered "milder" than the arctic. Both zones of the park and preserve share long, bitterly cold winters where temperatures may reach -70 degrees F and short, brilliant (midnight sun) summers where temperatures may peak at 90 degrees F (but rarely). Frost can occur at any time and winds can be strong and variable.

The glacial history of this area has formed the Holocene and modern landscape of GAAR. Glaciation of the Brooks Range began before the Pleistocene and continued into the Holocene. From our point of view, only the later glacial episodes are relevant. The last major glacial period in this region was the Itkillik glaciation. The last pulse of ice advance, often called the Walker Lake advance, began around 24,000 BP and lasted, in some locations, until about 12,000 years ago. There were also several ice pulses in the Holocene during 3500-2000 BP and 1500-1200 BP (mostly in the mountains). Numerous topographical features in the park and preserve are remnants of glacial activity. These features tend to be well-drained and often offer excellent vantage points or travel routes. Archeological sites tend to be associated with these glacial features as well as with the well-drained alluvial terraces and beach deposits surrounding many of the glacially-formed lakes. [Sites are also found associated with other topographical features such as ridges and portages].

The fauna and vegetation of GAAR show great variation, due to the large area of the unit, variation in elevation and topography, and from a diachronic perspective. Broadly speaking, at present there is both an arctic and a subarctic ecological zone. The major contrast in vegetation is between the forested boreal areas and the tundra zones. Over the last 10,000 years, the tree line has shifted to the north and then retreated several times. With the disappearance of the Pleistocene megafauna, the major species for subsistence became the caribou, sheep, bear and moose of modern times. Interestingly, salmon does not appear to have been a major subsistence item in the GAAR area. Of course, salmon and sea mammal products were sought and obtained on a regular basis through trade networks and relationships.

Archeological Resources

GAAR lies within the Arctic and the Interior cultural zones of the NPS Alaska region. The Brooks Range has been occupied and traversed by people for at least 12,500 years, yet the land bears relatively little visible evidence of their presence. People moved within and through the mountains and valleys, rivers and lakes following the seasonal rhythms of their lives. Later, miners, trappers and guides left the most visible remnants of their presence, but these are thinly scattered over the landscape. Given the purposes for which this park and preserve were created and their overall character, the GMP states that the overall objective for the management of cultural resources is to understand the long-term human use of the area, recognizing the importance of both physical remains and intangible associations in GAAR.

Though some areas of the park have been the subject of archeological research, overall the park is not well known archeologically. Enough work has been conducted in the park and preserve (Solecki 1950; Campbell 1961, 1962; Irving 1964; Alexander 1969; Binford 1978, 1980; Kunz 1982, 1991; Schoenberg 1985), to provide an overall view of the cultural history of the area. It should be noted that this "standard" chronology is still evolving as recent developments at the Mesa Site, Nenana Valley and Broken Mammoth Site have led to revisions and new ideas in this chronology.

It is generally accepted that the New World was settled by immigrants from Siberia and Northeast Asia at least 13,000 years ago and that the majority of these people arrived across the Bering Land Bridge. In late Pleistocene times the indigenous population was probably not large, even by Arctic standards. Clear evidence of their presence shows up as lithic sites of the Paleoarctic Tradition dating to about 11,500 to 8000 years ago. This widespread cultural tradition was characterized by a core and blade industry, especially microblades and burins. Certainly while Paleoarctic people were in the area, remnant glacial ice was still present in some of the valleys and vegetation was herbaceous or grassy with some areas of balsam poplar. In this area of Alaska, the concept of this tradition reflects the presence of an environmental adaptation with an economy focused on land-based hunting, small and mobile groups whose sites seem to represent small camps and/or lookouts.

Recently, Kunz and Reanier (1994) have redated and reinterpreted the data from the Mesa Site, which lies at Iteriak Creek just north of the park boundary. The site, now dated at between 10,300 and 11,500 BP, contains a lithic assemblage characterized by lanceolate points and lacking the Paleoarctic core and blade complex. This has led researchers to postulate that this site represents a different group of people; a cultural group named the Northern Paleoindian tradition, which is related to the Nenana Complex of Interior Alaska and possibly the Clovis tradition and other Big Game hunters of mid-continent North America. Since the antecedents of these fluted point groups have not yet been traced, these new findings and

hypotheses are exciting and significant areas for future research. GAAR is geographically central to this research.

In many areas, the end of the Paleoarctic period is marked by what appears to be the arrival of an intrusive group around 6000 BP, characterized by lithic assemblages containing asymmetric side-notched projectile points, large unifacially-chipped knives and notched pebbles or net sinkers. As originally proposed, these complexes represent migration or diffusion from the boreal forests to the south and east of the arctic. The type site for this complex, Onion Portage on the Kobuk River, shows no microblades present with this Northern Archaic material while the major Northern Archaic sites in GAAR, Tuktu and Kurupa Lake do have them present. Varying explanations have been proposed by researchers in the area, ranging from site taphonomy (postdepositional mixture of components) to adoption of Archaic traits by Paleoarctic-type peoples. Presently, this issue is unresolved and remains a potentially fruitful area for future research.

Around 4500 BP, the most distinctive of all the lithic assemblages in the Arctic archeological record appeared. These are the tools of the Arctic Small Tool tradition (ASTt). The finely made and miniature tools appear, fully developed, and occur throughout the coastline from Bristol Bay around the Alaska coastline northward, and then eastward through the Canadian Arctic to Greenland. This coastline is characterized by an ice-locked winter season and a treeless hinterland. The ability of this cultural group to exploit the arctic coastal resources such as sea mammals as well as the resources of the tundra such as caribou enabled them to spread rapidly throughout the arctic areas of North America, including GAAR. The tradition has a number of phases identified within its span of time (up to 1000 BP). There are several differing interpretations of this series of phases. Some researchers see the ASTt people as ancestral to the modern Eskimo and include them in an Eskimo Continuum. Others see the phases (Denbigh, Choris, Norton, and Ipiutak), as more distinctive and treat them separately. In any case, the adaptations developed by these groups show the basic resource exploitation strategies that did lead to the identifiable Eskimo groups that inhabited the area at contact and have continued to do so. In the park and preserve, archeological sites exhibiting the classic Denbigh complex type tools are widespread and distinctive. This complex marks the last appearance of microblades in northern Alaska. The Denbigh folk appear to have been equally oriented to the use of tundra resources as those of the coast and are thus the most widespread. Later phases increasingly emphasized coastal resources and their tool complex changed over time, even though the lithic continuity remained evident. The only other phase of the Arctic Small Tool tradition that has been positively identified in GAAR is an interior facies of the Ipiutak phase. This phase (2000 - 950 BP) has been identified and investigated at the Bateman Site at Itkilik Lake in the northeast part of the preserve. Since the coastal sites of this phase show strong Asian or Scythian influence in spectacular art objects, its appearance at Itkilik Lake and other lake sites beyond the North Slope is intriguing.

The identifiable antecedent cultures of the Inupiat Eskimos appear around 800 BP on the arctic coast of Alaska in the form of the Western Thule people. Dumond

(1977:118) has conceptualized this period the Thule tradition which "as a whole includes all the midden-building, polished slate-making, lamp-burning, kayak and umiak-paddling Eskimos of later times, who extended from Kodiak to Greenland." They appeared or evolved around the Bering Strait sometime in the first millennium AD. Others see this period as the Northern Maritime tradition, descending from the Birnirk culture. However viewed, these people spread over the North American arctic in much the same way that the Arctic Small Tool tradition groups did in earlier times. The spread and adaptation to varying environments of these late prehistoric cultures is of prime importance for a GAAR research agenda. As they moved and adapted over the centuries, groups of these people developed specialized versions of the Eskimo culture pattern. On the Kobuk River, an adaption of the coastal culture that emphasized use of riverine and boreal resources has been named the Arctic Woodland Culture. Another group, based in the Brooks Range and named the Arctic Tundra culture, was similar to the modern Nunamiut. Archeological sites of the Nunamiut are important resources that need immediate attention since, as the most recent sites, they would show more of the ephemeral details of arctic life that have been lost in sites of older cultures. [Tent rings and sod houses with faunal remains are good examples].

Also present in the GAAR area over the last 1000 years or so, were groups of Athabaskan Indian people. The prehistoric lithic culture that seems to represent them has been called Kavik. Such groups as the Kutchin (Athabaskan) which were present in historic times in the Brooks Range, now occupy the area of GAAR south of the mountains.

Overall, over 800 archeological sites have been identified (but not all have been recorded adequately) in GAAR. While this seems a high number for an Alaskan park, it actually represents only a small proportion of the sites actually present in this 8,000,000 acre park. Many of the known sites have been inadequately recorded and those records that do exist need to be better managed, collated, correlated and analyzed. As yet, no archeological sites have been nominated to the National Register of Historic Places, even though several sites or districts certainly are eligible. Approximately 125,000 acres in this park have had some sort of archeological survey, mostly at reconnaissance levels.

Historic Aspects

The Gates of the Arctic National Park and Preserve area remained relatively unknown and unexplored by Euroamericans until the late nineteenth century. Because of this, the marks of western civilization remain fairly rare in the park, mostly those of miners, trappers and hunting guides. Historic archeological sites do exist in the park. A possible campsite of the Howard exploration party, which crossed the Brooks Range in the winter 1885/86 has been found at Walker Lake. Another possible campsite of an exploration party, that of Smith and Mertie of the USGS from 1911, has been identified at Kurupa Lake. Remnants of the gold rush, which washed over the northern Koyukuk River area from 1901 to 1910, are still extant in

the park. Small mining operations have been ongoing in the park area since that time and have been surveyed by the NPS Cultural Resources Mining Inventory and Monitoring project.

Ethnographic Aspects

This park and preserve contains a rich ethnographic record and ongoing use of its resources. The Inupiat village of Anaktuvuk Pass is entirely surrounded by GAAR lands. The residents of this village continue to use park resources as their ancestors did. Several excellent ethnographic studies have been done about the inhabitants of this region. Ethnoarcheological research such as Binford's (1978, 1980) has had significant influence on archeological and hunter-gatherer studies as a whole. Studies of northern Athabaskans also have provided important data for interpreting the archeological record. Urgently needed oral histories from the elders in this area could provide even more significant data. This research would provide comparative data for interpreting the archeological record as well as information on more recent uses of and relationships with the landscape of GAAR.

Discussion

At the present time, there are more archeological sites recorded in GAAR than in any other park in Alaska. However, most of these sites do not meet the SAIP requirements for adequate recording or evaluation. There have been no archeological sites placed on the National Register of Historic Places in GAAR, even though there are many that are eligible. In addition, much of the park and preserve remains unsurveyed or only surveyed superficially. This park and preserve would benefit greatly from a continuing inventory and evaluation program. This is especially the case for late prehistoric and protohistoric sites, which should be linked to an ethnohistoric research program. From an overall viewpoint, the recent reevaluation of the Mesa Site, just north of the GAAR boundary, points up how generalized and hypothetical is the current cultural chronology of this area, as well as the area's potential to contribute much more to the understanding of that chronology.

Glacier Bay National Park and Preserve

Glacier Bay National Park and Preserve (GLBA) is in the panhandle of southeast Alaska. The center of the park is approximately 90 miles northwest of Juneau and approximately 600 miles southeast of Anchorage. The primary features that define the perimeter of this unit are the Gulf of Alaska to the west, the Chilkat Mountain Range to the east, Cross Sound and Icy Strait to the south, and the St. Elias Mountains and Alsek River to the north. Glacier Bay National Monument was established in 1925 by presidential proclamation in order to protect "a number of tidewater glaciers ... in a magnificent setting of lofty peaks ...; a great variety of forest

covering consisting of mature areas, bodies of youthful trees which have become established since the retreat of the ice which should be preserved in absolutely natural condition, and great stretches now bare that will become forested in the course of the next century; a unique opportunity for the scientific study of glacial behavior and of resulting movements and developments of flora and fauna and of certain valuable relics of interglacial forests; historic interest, having been visited by explorers and scientists since the early voyages of Vancouver in 1794 who left valuable records of such visits and explorations." Another proclamation added additional land to the monument in 1939. The Alaska National Interest Lands Conservation Act of 1980 changed the designation to national park and added a preserve to the unit.

Land Ownership

GLBA contains 3,283,000 acres of which 57,000 acres are in the preserve. Over 2,670,000 acres have been designated as Wilderness. There are two mining claim groups, totalling about 400 acres, within the park and there are approximately 3000 acres in Alaska Native allotment claims within the boundaries. Several other small private tracts also exist within the park and preserve.

Environment

The park is characterized by snowcapped mountain ranges rising over 15,000 feet, coastal beaches with protected coves, deep fjords, 15 tidewater glaciers, coastal and estuarine waters, freshwater lakes, and a mosaic of plant communities and animal populations ranging from "pioneer species" in areas recently exposed by receding glaciers to climax communities in older coastal and alpine ecosystems. There are essentially three climatic zones: the outer coast along the Gulf of Alaska has milder temperatures and more precipitation but less snowfall; upper Glacier Bay is much colder and snowier; and lower Glacier Bay is subject to heavy precipitation year-round. Glacier Bay proper has 920 miles of shoreline. Dense thickets of Sitka alder and devil's club confine foot travel to the shoreline except in those areas recently exposed from ice cover. Thus, the typical shoreline consists of a rocky tidal area backed by dense shrubby vegetation or steep mountain slopes. The Glacier Bay fjord complex forms a Y-shaped bay up to 15 miles wide and 63 miles long and provides marine access to many types of vessels. GLBA contains hundreds of miles of waterways, channels, bays, and inlets that provide access to its forested coves, rocky beaches, and glaciated inlets. The park and preserve reflect a history of valleys filled with ice that has alternately retreated and advanced in response to climatic fluctuations. The earliest recorded observations by La Perousse (1786) and Vancouver (1794) show the presence of glaciers at the mouth of Glacier Bay at Icy Strait. John Muir in 1879 recorded a retreat 32 miles up bay to a point at the mouth of Muir Inlet. Since then, the ice has retreated another 25 miles. Current research

indicates that some glaciers within the Fairweather Range are advancing while those in the Chilkat Range are retreating.

The panhandle of southeast Alaska is an uplift zone with rising mountain ranges. This continuing uplift is affecting the environs of Glacier Bay. The region is subject to frequent earthquake activity and its effects. As part of the Pacific "Rim of Fire" volcanic activity occurs nearby but there are no active volcanoes within the park and preserve. As a result of these factors, the Glacier Bay environment is undergoing rapid change. The terrestrial ecosystems shift their loci to go with the fluctuations.

Four main land ecosystems are found in and around the park and preserve: wet tundra, coastal western hemlock/Sitka spruce forest, alpine tundra, and glaciers and icefields. Three major marine ecosystems have been identified in and around the park and preserve: continental shelf, wave-beaten coasts, and fjord estuaries. The active tectonic environment of this region has probably affected site preservation and the archeological record negatively. For instance, evidence has been found that a 1600 foot high tsunami (from the effects of a massive earthquake-induced landslide), splashed through Lituya Bay. Subsistence resources that would have been relevant to prehistoric occupants of the area are found in all the ecosystems - land and marine. However, it is likely that the major focus would have been on exploiting the resources of the marine ecosystems, as the late prehistoric and historic Tlingit did.

Archeological Resources

GLBA is within the Northwest Coast cultural area of the NPS Alaska region. The first signs of human occupation of the Glacier Bay region appear approximately 10,000 years ago, when the land was recovering from the massive Pleistocene glacial stages. On nearby Baranof Island, the lowest component of the Hidden Falls site has been dated to about 9000 BP. At Ground Hog Bay, just outside and southeast of the park boundary, Ackerman discovered a prehistoric site with artifacts radiocarbon dated at around 10,000 BP. The early component at both of these sites are similar assemblages characterized by microblades and microcores, but noteworthy because of the lack of a bifacial tool industry. A microblade and microcore component was dated to 8200 BP in a shell midden at Locality I of Chuck Lake on Heceta Island. The Ground Hog Bay II site was found on a coastal terrace that apparently was unglaciated throughout the Holocene. However, since the earliest component was deeply buried, the possibility does exist that such sites may occur in areas that have undergone Holocene glaciation which did not affect the buried site. It is interesting to note that a coastal-marine subsistence pattern would have been the only one possible at this early-Holocene-time period. Since Baranof Island has been separated from the mainland since early geologic time, the manufacture and use of boats by these early people has been demonstrated. Chuck Lake, Ground Hog Bay and Hidden Falls have demonstrated human presence in southeast Alaska during the entire Holocene. The early components lend support to the hypothesis

that one of the major routes of entry to North America was by way of Beringia, down the Pacific coast to western Canada and the western United States, and possibly all the way down to Central America or South America. The lack of a bifacial tool industry is also seen in the early cultures of the coast of British Columbia while the microcores suggest ties to the Paleoarctic tradition to the north.

Two of these archeological sites indicate that the region continued to be occupied during the Holocene, though there are gaps in the record (which could be due to lack of data/sites rather than abandonment). At the Hidden Falls site on Baranof Island, the second prehistoric component has been dated and shows an occupation that spans a 1400 year period between 3200 and 4600 BP. This component, characterized by a replacement of flaked stone with ground and polished slate, closely resembles in technology and age one from Coffman Cove on Prince of Wales Island. So close is the affinity between them that one researcher has suggested an intensive trading relationship or cultural identity between them. Further afield, similarities can be seen with Ocean Bay II culture on Kodiak Island and with the Takli Birch phase on the Pacific coast of the Alaska Peninsula. To the south, similarities can be seen with the Locarno Beach phase of the southern coast of British Columbia. Other sites in the same area also show similar affinities. This has been interpreted as there having been a transitional phase that was leading to the later classic Northwest Coast culture that was extant in historic times.

At Ground Hog Bay, a component dating around 2000 BP, towards the end of the Hypsithermal (thermal maximum climatic fluctuation) and the beginning of the Little Ice Age, there is evidence of a house, microlithic tools and heavy woodworking tools. The upper component (III) at Hidden Falls shows that an occupation was present from 3000 to 1400 BP and, along with a number of other sites, represents the Developmental Northwest Coast Stage. Following this stage, which lasted until protohistoric times, we see evidence of the type of culture that was seen in historic times on the Northwest Coast.

Ethnographic Aspects

Beginning about 200 years ago, there is abundant archeological evidence for the occupation and use of this region by Northwest Coast peoples, which has continued into the present day. Whether this occupation was Haida, Tlingit or Eyak cannot be determined directly from the archeological evidence. Most of the 60 or so sites within the park/preserve relate to late protohistoric or historic times and are generally identifiable as Tlingit or Euroamerican. Major settlements or permanent villages existed in 1880 at or near Dry Bay, Excursion Inlet, Point Couverden and the Port Frederick area (where Hoonah is now). Dundas Bay contains a Tlingit cemetery and there are a few native allotments within the park/preserve (there would probably be a lot more if the early establishment of a national forest and then a monument hadn't precluded such selections). The protohistoric pattern of life in the area revolved around small permanent or semi-permanent winter villages as the hub. A seasonal hunting, gathering and fishing pattern was dominant, involving leaving the

winter central village to occupy recognized but fluctuating fishing and hunting camps. The reliability and abundance of salmon of which a storable surplus could be harvested, allowed the development of more complex, ranked societies with rich artistic traditions. How much of the hinterland of the park and preserve was utilized by native groups is not known since no intensive surveys have been done there.

Historical Aspects

The Russian discovery of sea otters in 1741 led to the Russian expansion into this region. In 1786, the French explorer La Perouse, arrived at Lituya Bay in two ships and contacts were made with the local Tlingits during his 26-day stay. In 1788 a Russian galleon made a brief stop in Lituya Bay and claimed it for the Russian Empire. In 1794, Vancouver explored this coast, including Glacier Bay, which at that time was still choked with ice. Commercial activities increased over the next decades, including the establishment of Hudson's Bay and trading stations along the coast. With the acquisition of Russian-America by the United States in 1867, further development took place. The discovery of gold brought an influx of miners. In August 1890, a group of miners met on Willoughby Island in Glacier Bay and organized the Berry mining district. Other developments included a saltery at Bartlett Cove in the late 1890s, several fox farms and the Dundas Bay cannery, started in 1890 and abandoned in 1935. These and other such developments have left us the opportunity for historical archeological work and preservation. John Muir made his first visit in 1879 and as a result of these explorations and the subsequent publicity, the monument was established in 1925. As a matter of fact, the first tourist ship entered the harbor in 1893, as gradually Bartlett Cove became a stopping and supply point for the tourist trade, as it is today.

Discussion

It should be noted that the potential for finding archeological sites in GLBA is actually increasing. The retreating glaciers uncover ground that might contain buried sites and the uplifting of the coast is bringing more such sites into view. In addition, the archeologists of the neighboring Tongass National Forest, which has an active cultural resources inventory program, have demonstrated that sites are more common in this environment, both coastal and forested, than previously believed.

Katmai National Park and Preserve

Katmai National Park and Preserve (KATM) is located at the head of the Alaska Peninsula approximately 290 air miles southwest of Anchorage. It includes over four million acres of land and water and is roughly bounded by Shelikof Strait to the east, the Lake Iliamna watershed to the north, the Bristol Bay coastal plain to the west, and the Becharof Lake watershed to the south. The area was originally

established as a national monument in 1918 to preserve geological features related to the June 6, 1912 eruptions of Mt. Katmai and Novarupta volcano. The Alaska National Interest Lands Conservation Act of 1980 added land and redesignated the area as a national park and preserve. The implementing language stated that the area was "to be managed for the following purposes, among others: To protect habitats for , and populations of, fish and wildlife, including, but not limited to, high concentrations of brown/grizzly bears and their denning areas; to maintain unimpaired the water habitat for significant salmon populations; and to protect scenic, geological, cultural and recreational features."

Access to the park and preserve is by aircraft (float planes generally land on Naknek Lake), and by boat or ship. Snow machines can be used in deep winter during some years when temperatures are sufficiently low to form thick ice. King Salmon is the nearest local community.

Land Ownership

Katmai National Park and Preserve encompasses 4,093,000 acres. Of that acreage, 423,720 acres are in the preserve. Within the park and preserve there are 3,426, 000 acres in designated wilderness. The boundaries encompass about 147,000 acres in non-federal ownership and about 29,000 acres that are under application by state and local groups. Major landholders include the Bristol Bay Native Corporation, Katmailand, State of Alaska, Igiugig Native Corporation, Alaska Peninsula Corporation, Paug-Vik Inc., U.S. Air Force, and the Russian Orthodox Church in America. There are several thousand acres of native allotments (approved or applied for), and other small tracts. Adjacent lands are owned/managed by the State of Alaska, Native Corporations, private landholders, BLM, and U.S. Fish and Wildlife Service. All of these groups would appear to be interested in cooperative inventory and research programs with KATM.

Environment

The past and present of Katmai is notable for its diversity. Most significantly, the park and preserve is divided into very different environments east and west of the Aleutian Range. By 10,000 BP, the glaciers covering large portions of the Alaska Peninsula had receded, and the region's main landforms and drainage systems had been established. There were long-term fluctuations in sea and lake levels during this time period. Other than minor oscillations in temperature and humidity, the regional climate has remained essentially the same since the end of the Pleistocene. Vegetation patterns have changed slowly, culminating in an influx of spruce forests during the last several centuries. Both the abundance and diversity of fish and wildlife populations have likely remained relatively constant, although fluctuations in salmon and caribou populations have taken place over time. Volcanism and tectonic events have remained a continuing process that undoubtedly has had effects on human inhabitants of the area for the last 8000 years.

KATM covers parts of three major physiographic provinces, including the Shelikof Strait coastline, the Aleutian Range, and the lake region around and north of Naknek Lake. The Bristol Bay coastal plain, with gently rolling terrain characterized by glacial outwash features, abuts the park and preserve on the west. The predominantly volcanic Aleutian Range divides the peninsula asymmetrically, with the mountains cresting inland 9 to 15 miles from the Pacific Coast. There are nine active or dormant volcanoes in this part of the Range. Archeological research has identified at least ten ashfalls over the last 7500 years in KATM. These provide an effective means of relative dating in archeological excavations. The Shelikof Strait coastline is a complex of narrow fjords, island and seastack bays, sandy beaches, deep river valleys, and rocky headlands, comprising a complex ecosystem that includes river drainages, marshes, beaches, intertidal zones, estuaries, coastal uplands, and islands. There are several passes connecting the lakes region and various bays providing relatively easy access to that part of the park and preserve.

The climate of the Alaska Peninsula includes maritime, continental, and transitional zones. A primary characteristic of the area's climate is its instability. Severe storms are common and usually track northeasterly out of the North Pacific along the southern edge of the Alaska Peninsula (Shelikof Strait). Katmai's weather, especially east of the Aleutian Range, features strong winds, protracted cloud cover, frequent precipitation, and fog. The western side of the Range is considerably drier.

KATM flora and fauna belong in two basic lifezones. The Arctic Zone extends from the mountain tops down to about 2000 feet in elevation, and considerably lower in some locations such as periglacial areas. This is basically an alpine tundra environment. Below the Arctic zone is the Hudsonian zone, comprising the rest of the park and preserve. Its deeper and richer soils, higher year-long temperatures, absence of snowfields, and relative freedom from gales allow it to support a great variety of plant and animal species. The terrestrial habitats range from extensive white spruce forests, groves of balsam poplar, thickets of green alder, extensive stands of grasses mixed with deciduous trees and shrubs. Also common is moist tundra, which occupies the foothills and lower elevations. Wet tundra may also be found in the low marshes of the areas. Animal populations tend to utilize many of these ecological areas.

Among all this diversity, KATM is famous for its brown bears and fish populations. Bristol Bay streams, including the Naknek River, are the source of some of the world's largest salmon runs and appear to have been so for about the last 4000 years. Trophy-size game fish such as trout inhabit many of the park and preserve streams. The bears come to feed on the fish, sometimes in unusually large concentrations. There is a migratory caribou herd and it appears that in the past there was a more regular presence - enough so that hunting caribou was a regular aboriginal activity. Overall, KATM contains at least 29 species of land animals, 6 of sea mammals, 150 species of birds, and 28 of fish, as well as uncounted intertidal and coastal species.

Archeological Resources

The region in which Katmai National Park and Preserves is located contains perhaps the richest prehistoric and protohistoric cultural resources in the greatest concentrations known in Alaska. The abundant and varied natural resources that existed in the region at the end of the Pleistocene and during the Holocene resulted in the development along the Pacific mainland and island coasts of the largest prehistoric populations in Alaska. A second ecological zone, the lake and riverine settings on the Bristol Bay side of the Peninsula provided prehistoric peoples with a wealth of resources that included anadromous fish and terrestrial mammals. In the park, the Brooks River Archeological District (and National Historic landmark) and the Takli Island Archeological District, both on the National Register of Historic Places, are only two examples of the richness of the two zones.

Currently, the park Cultural Sites Inventory lists 106 known or suspected archeological sites in the park and preserve. Of the 99 known sites, twenty-five have been recognized as nationally significant and have been placed on the National Register of Historic Places. Many of these sites are located within one of the three Archeological Districts that are in the park and preserve. The remaining sites have not been evaluated as yet. Archeological survey has been confined to the Pacific Coast and the Brooks River/Naknek areas of the park and preserve. The majority of KATM has not been inventoried - somewhat less than 5 % has been examined. A bias in the types of known sites undoubtedly exists due to this nonrepresentative approach. Potential contact, conflict, diffusion, intermixing, and population replacement between the Bering Sea (Bristol Bay) and Shelikof Strait (Pacific Coast) are themes that underlie most of Katmai prehistory. In later times, movement and interaction along the Peninsula, as well as across it, both from the mainland and the Aleutians is apparent. Understanding these relationships and shifts is key to any comprehension of the human history in KATM.

However, as a result of the archeological research carried out in Katmai National Park and Preserve since 1954, we have a good basic understanding of the sequence of prehistoric occupations in the region. The cultural sequence for the park and preserve includes representatives of all the major cultural traditions that have been identified for the Alaskan arctic environment. The two ecological zones formed by the Aleutian Range have somewhat different prehistoric cultural chronologies - reflecting Bering Sea influence on one side and Pacific coast cultural influence on the other.

The Paleoarctic tradition dates from around 9000-8000 BP on the Peninsula. It has been found at a site at the mouth of the Kvichak River and at Ugashik Lake, just outside the park boundaries. Because of its widespread distribution in Alaska and on the Peninsula, it can be expected that sites belonging to the tradition exist both in the Bristol Bay region and the Pacific Coast region.

The Northern Archaic tradition appeared in the region around 5000 BP. The earliest such assemblage in the area has been found at a site at the mouth of the Kvichak River and is found in central KATM. It is characterized by bifacial projectile

points with side notches and unifacial scrapers. The assemblage has many similarities with Archaic cultures of the boreal forests to the south and east of the Arctic, and does not appear to have been immediately derived from Asian cultures. During this same time period, a separate cultural tradition existed along the Pacific Coast of the Peninsula but reached inland as far as Brooks River in the Bristol Bay region. Dumond has referred to this phase as the Brooks River Strand phase of the Kodiak tradition. Elsewhere, it is labelled the Ocean Bay I tradition. It marks the first appearance of ground slate in assemblages in this region.

In the Bristol Bay region, the Arctic Small Tool tradition (ASTt) appears around 3800 BP and lasts until about 3100 BP. This cultural tradition, which has northeast Asian roots, appears fully-developed in Alaska and spreads from the Bering Strait area eastward to Hudson's Bay and Greenland, as well as southward to interior Alaska and the north Pacific coast. It appears that bearers of this cultural tradition immigrated to the KATM region. Some researchers have labelled these people as "Paleoeskimo" or ancestral to modern Eskimo populations, based on the persistence of certain types of lithic tool types and adaptive strategies. Others see Inupiaq and Yupik roots in later immigrants from Asia. . At the same time period, on the Pacific Coast of the Peninsula, along Shelikof Strait, an Ocean Bay II-like cultural tradition known as the Takli Birch phase was thriving. Polished or ground slate artifacts appeared in coastal KATM for the first time along with large coastal middens. The intrusive ASTt occupation of Brooks River represents a unique phase in the interior prehistory of Katmai because it is a 700-year period when Brooks River assemblages do not reflect the influence of Shelikof Strait culture. Whether this was caused by catastrophic volcanic activity or cultural barriers is not known. Presently we don't have enough information to solve this puzzle.

Following a gap in the archeological record in the KATM area, Norton tradition people arrived at the Brooks River area about 2300 BP and were resident until around 1000 BP (in three distinct phases). They were the first in the area to use pottery and ground slate was more commonly used than flaked lithic tools. Numerous sites and components of sites within KATM contain evidence of Norton occupations. While related to the Arctic Small Tool tradition culture, to some researchers Norton appears to be a distinct development, marked by a shift to an economy based on coastal resources. At the same time, from around 2000 BP to 1000 BP, the Takli Beach and Takli Cottonwood cultures flourished on the Shelikof Strait, actively pursuing land and sea mammals and taking fish and shellfish. Once again there appear striking similarities in the cultural remains of Bristol Bay and Pacific Coast, indicating increased contact between them. Cottonwood and Beach culture were part of the widespread Kodiak tradition (called Kachemak tradition by some researchers) - centered on that island but reaching as far as the Kenai Peninsula. This important tradition is represented in the park by the Kukak Village site (XMK-006), located at the entrance of Kukak Bay. Only partially excavated, the work has contributed significantly to formulation of the cultural chronology of Shelikof Strait, especially the Kodiak and Koniag traditions.

The last major influx from the Bering Sea area into the KATM region prior to European contact was the Thule tradition. The Thule people appear to have been the direct antecedents of the historic Eskimo people. According to Harritt (19xx:xx), "developing cultural traditions of the Bering Sea region around AD 600 gave rise to the Eskimo culture that was first encountered in southern Alaska by Russian explorers around the middle of the 18th century." On the Pacific Coast, at the Kukak Village site, the Mound phase represents the Koniag tradition, the historic inhabitants of Kodiak and the Shelikof Strait region. Both groups show a strong emphasis on maritime resources, but the technology of the Thule people was equally useful for hunting and gathering on land. Gravel-tempered pottery and certain characteristic tool types appeared on the Pacific coast, on the Bristol Bay coast, and at inland sites at this time, indicating communication across the Peninsula. Many scholars hypothesize that Thule culture arrived on the Peninsula as a wave of diffusion or immigration, influencing the shift of Kodiak/Kachemak culture at the same time. Others feel that indigenous development, albeit with some influence from the north, led to the flowering of Koniag culture. In the study of the ebb and flow of different cultures and adaptations over the centuries in this area, the possible crucial role of volcanic eruptions and ash falls, as directly destructive and also as environmentally disruptive as they can be, must be part of any extended research program.

Historical Aspects

The 1912 eruption of Mt Katmai led to the establishment of Katmai National Park and Preserve and had major effects on the inhabitants of that area. However, European contact, with its disruptions had occurred much earlier. As early as 1750, Russian hunters and missionaries were using the Katmai trail. This prominent native trail joined Katmai Village, located on Katmai River near the seacoast, with the villages of Savonoski, located near Lake Naknek, and Naknek, on the shore of Bristol bay. The same trail was a popular route for American explorers and prospectors until the 1912 eruption covered much of the trail.

By 1784 Russian fur traders, seeking the valuable sea otter, had become established on both Kodiak and the Katmai Shelikof Strait coastal areas. They virtually enslaved the Koniag and other Pacific Eskimos in the fur trading operations, making them dependent upon the traders for their food, clothing, and other essentials. The Alegmiut, who lived in the interior of the Peninsula area of KATM, were not subjugated but were part of the trading network of the Russians. Katmai Village was the main trading post of the monopolistic Russian American Company from 1799 to 1867, and the trail over Katmai Pass inland from the coast was used for trading and missionary activity. By the time of the American purchase of Alaska in 1867, much of Pacific Eskimo culture had been destroyed and the natives had become "Russianized."

After the purchase, the Alaska Commercial Company bought most of the Russian American Company holdings in the region, but were never able to establish the monopoly and hegemony of the Russians. By 1890, most of the sea otter

population had been decimated and the fur trade virtually ended. Soon after the turn to the century, the trading posts were closed and the local population returned to subsistence living. Soon, though, salmon canneries were established in the area and wage labor became available. Trappers and prospectors had explored much of the Peninsula and a few had built cabins there. The establishment of the monument in 1918 closed much of the Katmai area to resettlement, hunting, fishing and gathering. Scientific exploration and tourism became major activities within the park. As KATM was expanded in 1931, 1932, and 1980, inholdings, mineral claims, subsistence and settlements became management issues. For instance, in the Bay of Islands, Naknek Lake, is Fure's Cabin. This log cabin, on the National Register of Historic Places and the List of Classified Structures, was built around 1914 by a trapper/pro prospector who married an Aleut and settled in the region. Overall, very little historical archeology has been done in KATM, although the potential is there. Main research themes would be frontier development, communication and transportation

Ethnographic Aspects

In late prehistoric and protohistoric times the area that is now KATM was occupied by various groups of people, all part of the Pacific Eskimo, or "Aluutiq", group. It seems that the entire Pacific slope of the park and preserve was occupied by Koniag people. The center of this culture was on Kodiak Island and the mainland directly across from it. Another Pacific Eskimo group, the Peninsular Eskimo, of which very little is known, apparently lived in the KATM area west of the Aleutian Range until just before the arrival of the Russians. At that time, a group of Eskimos from the Bristol Bay area, the Alegmiut, were pushing into the Nushagak area and the shores of Bristol Bay, displacing the former inhabitants. Under Russian hegemony this movement continued and was completed. The former occupants, the Peninsular Eskimo, probably spoke Yupik, but their dialect remains unknown at present. As recently as 1953, natives who prior to the 1912 eruption had lived at Savonoski, a village on the upper Naknek drainage, still maintained that they were a different people from the Alegmiut who resided at the mouth of the river on Bristol Bay. There is some indication that a small group of Aleuts were located in a small enclave at the mouth of the Ugashik River. In addition, the Athabaskan people were pushing down the Alaska Peninsula from the Lake Clark area.

The questions and problems of the movement and diffusion of cultures up and down the Peninsula would be a prime research question for ethnographic and archeological investigation. In fact, very little archeological research has been done on numerous late prehistoric and protohistoric sites in the park. If combined with ethnographic and oral history work, this is potentially one of the richest of the parks in cultural resources.

Discussion

It seems that a great deal of archeological work has been done in KATM, but that is not actually the case. Most of the work has been concentrated in one or two major site areas. In other words, most of the park and preserve is *terra incognita* from an archeological resources point of view. As in most of Alaska's parks, a major, long-term inventory and evaluation program is needed to provide the basic archeological resources information for managing the unit.

Kenai Fjords National Park

The Alaska National Interest Lands Act of 1980 created Kenai Fjords National Park. The act directs that the park "be managed for the following purposes, among others: To maintain unimpaired the scenic and environmental integrity of the Harding icefield, its outflowing glaciers, and coastal fjords and islands in their natural state; and to protect seals, sea lions, other marine mammals, and marine and other birds, and to maintain their hauling and breeding areas in their natural state, free of human activity which is disruptive to their natural processes...".

Although cultural resources are not specifically cited in the implementing language, they are part of the NPS management mandate. In addition, in order to properly manage and interpret the natural environment, animal populations and plant communities of this unit it is necessary to develop a diachronic perspective. Humans have been part of this ecosystem and interacting with it for at least 8000 years. A basic inventory and evaluation of the archeological resources of Kenai Fjords National Park (KEJF) will provide essential information about human presence and activities of the centuries.

Land Ownership

Of a total of 671,000 acres in the national park, 529,000 acres are federally-owned. The state of Alaska has about 19,000 acres. There are several native allotments and cemetery/historical (14h1) sites with the park. Local Native groups have under application 77,000 acres. The Port Graham and English Bay Village Corporations have applied for the majority of those acres, including 8 14h1 sites. In addition, there are 160 acres of unpatented mining claims within the park. Most of the land under application is located along the coastal parts of the park.

Environment

Kenai Fjords National Park occupies the southeastern portion of the Kenai Peninsula in the southcentral part of Alaska. The Peninsula is located within the Kenai-Chugach mountains physiographic province, a division of the Pacific Mountain System. The park lies completely within the Kenai Mountains topographic unit. This

unit covers an area of 760 square miles and elevations lie generally between 4,000 and 5,250 feet ASL. The predominant bedrock is graywacke and shale. Other common rock types are greenstone, tuff, and chert. The region was uplifted and eroded at various times during the Tertiary and Quaternary periods. Currently, fluvial and glacial deposits overlie bedrock in all areas except the high, steep slopes. Soils of the region are characteristically shallow, poorly developed, very gravelly, and acidic.

The park encompasses nearly 65% of the Harding Icefield, plus fjords and peninsulas of the Kenai coast. The icefield is a remnant of the Ice Age - a surviving expanse of Pleistocene glaciation. Numerous valley glaciers flow outward from the icefield, some reaching the sea, others ending in lakes or on bare ground. Along the coast, glaciers have cut deep bays into the mountainous shoreline, creating a series of deep fjords. Heavy temperate rainforest vegetation covers the tops of cliffs rising a hundred feet or more above the ocean. The coastal area has abundant aquatic life, including seals sea lions, sea otters and migrating whales. Sea birds in large numbers occupy the coastal cliffs in summer. Seasonally, littoral resources such as shellfish are easily accessible. Salmon runs are also abundant. These resources proved attractive to prehistoric and historic groups of people.

KEFJ NP is about 100 miles south of Anchorage. Access is by highway, air, rail and water. Park headquarters is in the coastal city of Seward, which is just outside the northeastern corner of the park. The western coast of the Gulf of Alaska forms the coastal (eastern) boundary of the park.

There are four major ecosystems within the park. The Arctic-Alpine zone is above the tree line. Sedges, grasses, willows and other dwarf plants are the dominant vegetation. An alder belt, sometimes extending down to sea level, usually separates this zone from others below tree line. Interior valleys comprise the Hudsonian zone, which is a Sitka spruce and birch forest. Hemlock, bunchberry, mountain cranberry, and devil's club are also common. Along the coast the Hudsonian zone merges with the Canadian zone, which may be characterized as a transcontinental coniferous forest, here dominated by Sitka spruce. Vegetation here is more lush than inland and includes such plants as bluejoint reedgrass, devil's club, salmonberry, and skunk cabbage. The coastal marine system is comprised of islands, beaches and cliffs. The associated intertidal zone is a rich one, including large stands of kelp forest and eelgrass.

Archeological Resources

Very little is known about the prehistory of Kenai Fjords National Park, partly because very little archeological inventory has been done there until recently and partly because the terrain and heavy vegetation make site discovery difficult. In addition, recent geological history complicates the process of searching for intact coastal sites. For example, the archeological records of many inner fjord areas have probably been erased by glacial advances during the Little ice Age (1100-1850 AD), and tectonic subduction of the Pacific Plate has resulted in ongoing coastal

subsidence, exposing shoreline sites to erosion and raising sea level to cover them. There is evidence from Aialik Bay indicating that a major earthquake in about 1090 AD caused almost two meters of subsidence along the KEFJ coast. The 1964 earthquake also caused subsidence. However, the Exxon Valdez oilspill did impact the KEFJ coastline and some exploratory and assessment work was undertaken at that time. As a followup to that work, an archeological inventory, funded as part of the SAIP program, was undertaken for the coastal area. The data from this survey are now being analyzed.

A brief overview based on chronologies from surrounding areas will provide some perspective. Kodiak Island contains the earliest evidence of a coastal-marine adaptation in the area. These early finds have been grouped into the first phase of an archeological tradition known as Ocean Bay, which seems to have been focused on Kodiak and the nearby Alaska Peninsula. This Ocean Bay I culture has been dated to approximately 6500 BP. Ocean Bay II, dated to between 4500 and 3900 years ago, differs primarily from the preceding culture in its emphasis on ground and polished slate over flaked stone. The assemblages from this phase also seem to represent a diversification in resources bases and subsistence strategies. Open water sea mammal hunting, riverine fishing, and inland caribou hunting are all indicated.

For the time period between 3000 and approximately 800 years ago, the most complete cultural history comes from Kachemak Bay on the west side of the Kenai Peninsula. It seems to have been related to the Ocean Bay materials but with an increase in the variety of both of the polished stone tools and bone implements for sea mammal hunting. It extended over time from Kachemak Bay to Cook Inlet, Prince William Sound (Kachemak Bay III) and down to Kodiak Island. Kachemak Bay I has been found only on Yukon Island and was dated to about 2800 BP. Kachemak Bay II, radiocarbon dated to 1700 BP, has been recognized in Prince William Sound and as far inland on the Kenai Peninsula as Skilak and Kenai lakes.

As far as 3500 years ago, Norton influence affected Cook Inlet, the Kenai Peninsula, and Prince William sound. The Norton tradition is clearly an Eskimo culture but seems to represent here an adaptation to an interior and riverine environment and an increased emphasis on fishing for subsistence. Then, about 1000 years go, another wave of Eskimo culture, in the form of the influential Thule tradition, can be discerned in the archeological record of the area. Thule reinforced already existing cultural patterns throughout the area and brought an increased emphasis on sea mammal hunting. Beginning about 1100 AD, when Thule is first recognized in the area, coastal southcentral Alaska gradually developed into the local cultures that were present at the time of contact. About 900 years ago, the Koniag phase appeared on Kodiak Island. This was a widely influential group which was directly ancestral to modern Koniag Eskimos.

Historical Aspects

Captain Vitus Bering, in 1741, was the first known European to see the Kenai Peninsula. Captain James Cook made the European discovery of Cook Inlet in 1778. After Cook's visit the area became the scene of bitter competition among rival fur companies for the natural resources of Russian America. Alexander Baranof named Resurrection Bay in 1792, finding it a welcome refuge from Pacific storms. In 1793 Baranof selected a site on the west side of Resurrection Bay for a ship building port. At least three major vessels were built at this port, named Voskresenski Harbor, before its abandonment around 1796. The location of this site was lost and it has not yet been rediscovered. The area was controlled by the Russians until the United States purchase. By that time, trading posts had been established at English Bay, Kenai, Tyonek and Iliamna. The first American settlement in the Seward area was in 1884, by William Lowell. The railroad connecting Seward to the Interior was conceived in 1898 and completed by 1915.

At present, there are three unpatented mining claims within the park. These historic sites have been mapped by the Cultural Resources Mining Inventory program of the NPS. Four other historic era sites (SEW-01 - 04), were found in the Resurrection River valley in 1983.

Ethnographic Aspects

At contact, the aboriginal inhabitants of the area that is now Kenai Fjords National Park were most probably Pacific Eskimos with Tanaina (Dena'ina) Athabaskan groups as near neighbors. Of the Eskimos, the Chugachigmiut (now Chugach) lived in and adjacent to Prince William Sound; the Unagalakmiut occupied Kayak Island and the adjacent mainland; the Unixkugmiut resided on the south coast of the Kenai Peninsula. Little recorded history exists relating to the Unagalakmiut and the Unixkugmiut, but their culture was apparently quite similar to that of the more populous Chugach. The Chugach people represent the extreme extension of Alaskan Eskimo culture in a southeasterly direction. Archeological studies indicate that the Chugach existed with little cultural change in this region for at least 500 years prior to the European discovery of Alaska.

The Unixkugmiut were considered a separate people by the Chugach. Their territory seems to have extended from the vicinity of Puget Bay, at the western end of Prince William Sound, to Cook Inlet, including Kachemak Bay. The Unixkugmiut probably occupied most of Cook Inlet during the period of Kachemak Bay III culture. Later, they seem to have been replaced by the expanding Dena'ina people over most of their territory. The National Park now lies within the boundaries of the Chugach Alaska Corporation.

After contact, major disruptions in Native life and culture were caused by epidemics, missionization and the introduction of commercial fishing and hunting (with the concomitant shifts in resource availability). The last Native settlement on the south coast, at Aialik Bay, was probably abandoned about 1880. It appears that the

inhabitants migrated to Alexandrovski, on English Bay, which was originally a Russian Port established in 1785, and is now the village of English Bay. Natives also moved to Port Graham, where the Russians began mining coal in 1855 and where a commercial cannery was opened in 1909. At present there are seven or eight abandoned village sites known to exist within or near KEFJ.

Discussion

The ongoing multipark SAIP project that involves inventorying coastal resources in seven Alaska parks has revealed that archeological sites do exist in KEJF in the coastal zone. Since these are resources that are vulnerable to oil spills and tectonic effects (earthquakes and tsunamis), as well as looting and pothunting, park management needs more information on the archeological sites in the Park. An overview and assessment is the first step in the process and then a long-term inventory and evaluation program is needed.

Klondike Gold Rush National Historical Park

Klondike Gold Rush National Historical Park (KLGON) was created by Congress on June 30, 1976 to commemorate the Klondike gold rush of 1897-1898. The park is unusual in that it includes four separate, dispersed units: an interpretive center in Seattle (which falls under the purview of the Pacific Northwest Regional Office), a number of historic buildings in Skagway, and larger land units in the Chilkoot Pass and White Pass areas. The latter units encompass approximately 21 and 6 square miles respectively and contain major physical cultural remains associated with the gold rush. Among these resources are the Chilkoot and White Pass Trails themselves, the remains of several aerial tramways, and the Brackett Wagon Road. Towns and camps which have left material remains along the Chilkoot Trail include Dyea, Canyon City, Pleasant Camp, Sheep Camp, and the Scales. The major settlement along the White Pass Trail was White Pass City, and a few remains are still evident at Porcupine Hill.

In 1962, a trail was constructed from Dyea to Chilkoot Pass by inmates of the Youth Authority Department and its Correction Branch of the State of Alaska through the Division of Lands, Department of Natural Resources. In 1968, the governments of the Yukon Territory and British Columbia restored the Canadian side of the Trail. By 1969, the Recreational Chilkoot Trail which follows parts of the historic trail, was complete. At present, this trail extends 33 miles from the trailhead at Dyea to Bennett, and 17 miles are included in the National Historical Park.

Headquarters of the park is in the southeast Alaska town of Skagway, which is approximately 100 miles north of Juneau. This small town of 695 is situated at the northern end of the Lynn Canal, which branches off the Inner Passage of the Gulf of Alaska. Year round access to the town is by Alaska Marine Highway ferry. There is scheduled and charter airline service by commuter airline, which can be weather

dependent. Road access is possible by way of the South Klondike Highway which connects to the Alaska Highway near Whitehorse, Yukon Territory, Canada. The gold rush era White Pass and Yukon Route (WP&YR) railroad originally running from Skagway to Whitehorse shut down in 1982 and only provides tourist service now. There are regular stops by cruise ships at Skagway during the summer months.

Access to the Chilkoot Trail unit is by a narrow, winding eight mile long, mostly dirt, road from Skagway to the abandoned gold rush town of Dyea. The trail is a hiking trail that begins at the trailhead in Dyea, covers 33 miles and is half in the USA and the park and half in Canada. The Canadian portion is located within the Chilkoot Trail National Historic Site and is managed by Parks Canada. Access to the White Pass unit of the park is limited and difficult. There are no trails to or through the unit but the White Pass and Yukon Route railroad and the South Klondike Highway pass through portions of the unit and virtually the entire unit is visible from either transportation route.

Land Ownership

Approximately 13,000 acres of land are included within the boundaries of the three Alaskan units of the park. The existing land jurisdiction includes: State of Alaska owns 10,200 acres; National Park Service owns 2417 acres; and 374 acres are in private ownership. The Chilkoot Trail unit with 9670 acres and the White Pass unit with 3320 acres comprise the major portions of the total park acreage. In the Skagway unit the federal government owns 3.06 acres, which includes the major historic buildings in the town. NPS owns several parcels at the southern end of the Chilkoot Trail unit including most of the old townsite of Dyea. Most of the Chilkoot Trail itself is in state ownership. State land in the Chilkoot Trail unit has been managed by the National Park Service since 1976 under a Memorandum of Understanding between the Service and the State of Alaska. The National Park Service owns all of the land in the eastern portion of the White Pass unit, east of the Skagway River. The land west of the Skagway River is owned by the State of Alaska and is not covered by a Memorandum of Understanding. The Pacific and Arctic Railway and Navigation Company possesses corporate jurisdiction over several miles of the White Pass and Yukon Route railway within the unit through a right-of-way grant for all land within 100 feet of the center line of the tracks. An oil pipeline runs adjacent to the company's tracks.

Environment

The Skagway and Taiya Rivers flow in a southwesterly direction from their sources in the Coast Mountains through two short, narrow and deeply incised, almost parallel canyons, formed by faulting during the Tertiary period and subsequently shaped by Pleistocene glaciation. Glaciers once covered both valleys, leaving only the peak tops, some of which reach 6000 feet, uncovered. The land, at one time below sea level because of the weight of the glacial ice, has been slowly rising at

about 3/4 inches per year. The surrounding glaciers have not retreated, however, making the Dyea and Skagway valleys two of only three ice-free corridors into the upper Yukon drainage and the Yukon interior. The other, the Chilkat Pass near Haines, was a longer route, but easier for pack animals. The Chilkoot Pass, near Dyea, was the shortest year-round route to the Yukon but it was high and impassable to wagons. White Pass, near Skagway, was lower in elevation and easier to traverse with pack animals but was somewhat longer than the Chilkoot Trail.

Neither of the valley floors, Skagway or Dyea, were suitable for long-term settlement in aboriginal times. The valleys were low and susceptible to periodic flooding. They had relatively limited exploitable plant and animal populations. The tide flats were too broad at low and moderate tide levels to get canoes within reasonable distance of the beaches. The rivers had relatively small salmon runs. The emerging intertidal zone was not stable enough to support readily exploitable populations of shellfish and the shallow bay was not a good marine fishery. The major migratory waterfowl routes were far to the west. The primary sea mammal migration routes were to the south and there were no bird or sea mammal rookeries nearby.

The winds, particularly in Skagway were legendary long before the Klondikers arrived. In general the climate of the area is influenced by both interior and maritime weather patterns. Skagway has the least precipitation in southeast Alaska but higher elevations receive up to 200 inches of precipitation (mostly snow) annually. The ecological zones also vary by elevation. Pacific northwest coastal rainforest is found mainly on the Alaska side of the passes. Fairly moderate climate, dense vegetation, mostly coniferous and deciduous forest with a heavy understory is typical. The higher elevations are marked by alpine tundra and alpine meadow is particularly well developed on the Canadian side of the passes and on higher, less accessible areas on the Alaska side. The third ecosystem, sub-alpine and boreal forest, is found in the drier parts of the Chilkoot Trail, roughly from Deep Lake to Lake Bennett.

The major big game species in the area are mountain goat and black bear. A small population of moose has moved into the area in recent times. Smaller furbearers such as wolf (occasional), wolverine, marmot, porcupine marten, and others are present but not abundant, as are salmon and shore birds.

Archeological Resources

The archeological inventory of KLGO is relatively advanced. A preliminary, very general survey of the Chilkoot and White Pass units was completed in 1979 and published in 1981 (Carley Report); there is an ongoing survey of the Chilkoot Trail; compliance archeology has been regularly associated with the preservation and restoration of historic buildings in Skagway but only some of the work has been reported or published; and additional inventory and mapping has been accomplished in Dyea. A great deal, though, remains to be done. This park is one of the few NPS units in Alaska in which 100 % inventory is both feasible and desirable.

Very little is known about the prehistoric occupation of the units of KLGO. In late prehistoric times the area was controlled by the Chilkat and Chilkoot Tlingit and the Canadian side was under the control of the Tagish Indians. Since the Taiya and Skagway river valleys were glaciated until relatively recently, and the resource base has been limited and unstable any use of the area would probably have been transient and seasonal. However, the Chilkoot Pass and the White Pass have been used as travel corridors between the coast and the interior for at least the last 200 years, so some signs of that use can be expected. Therefore, the major archeological resources in the park can be expected to be protohistoric and historic, both of Tlingit use and occupation and the Klondike gold rush.

When Captain William Moore and his son arrived in the area in 1887, they discovered a few old campsites, axe blazes, deadfall traps, and an old half-finished cottonwood canoe but nothing else was evident. The Moore's nearest neighbor, an Indian (Tlingit?) named Wausuck, was living at Smuggler's Cove and in fact, the remnants of a small prehistoric site have been found there. That site and two other small shell middens, one at Yakutania Point and one near Dyea, are the only known sites of the Tlingit occupation of the immediate area.

Historical Aspects

Undoubtedly, the major cultural resources of Klondike Gold Rush National Historical Park are historical and historical archeology. The whole unit was created for the purpose of preserving and interpreting the remnants of the gold rush. It is on the National Register of Historic Places. Most of the remains on the Chilkoot Pass and White Pass trails are ruins and, in many places, scattered and hidden. In Skagway, which has an Historic District in it, many of the historic buildings have been and are being restored, but the historic archeological resources associated with the District are extensive and rich.

After the U.S. purchase of Alaska in 1867, American naval vessels occasionally patrolled the area. The first known excursion into the area took place in 1869 when Cmdr. Richard Meade reached the mouth of the Taiya River. The Tlingits continued to aggressively defend their trade monopoly and trade routes. In the mid-1870's, scattered parties of white prospectors attempted on their own to ascend Chilkoot Pass, but they were turned away by the Tlingits. Remarkably, however, at least one prospector, George Holt, slipped past the Tlingits in 1874 or 1875, and made it over the Pass and back. Missionaries into the region established a Presbyterian reserve at Haines in 1879 or 1880 and two salmon canneries were erected near Chilkat Village by 1883. Around 1884, John J. Healy and Edgar Wilson established a small trading post in the Dyea area.

Within two years of the announcement of the discovery of gold in the Yukon (August 1896), Skagway boasted a population of 8000 to 10000 and Dyea 4000 to 5000. The vast majority of these people were Klondike stampedeers bent on getting themselves and their supplies to the gold fields in the Yukon. The stampede totally overwhelmed the small local and Native population of the area. The stampede also

overwhelmed the natural resources of the area. Based on historic photographs the devastation and disturbance was extensive - boding ill for the preservation of archeological sites. Populations in both towns dropped dramatically after the initial wave of stampeder passed through. Dyea was essentially gone by 1902 and Skagway's population dropped by 1910 to 875 and around 500 by 1920. This lack of population and use allowed places such as the Chilkoot and White Pass trails and the settlements along them to disappear into the undergrowth. Most of the archeological sites found so far relate to the Klondike Stampede. They are generally shallow sites with artifacts right on or just under the surface - reflecting the brief duration of the stampede. The sites are found on the valley floors. The steep slope of the mountainsides flanking the valleys and trails suggest the site potential is very low in those areas.

Ethnographic Aspects

The Klondike Gold Rush was a watershed event in the area. It dramatically affected the Native culture and devastated the environment. The Dyea village site, which was evidently a semi-permanent settlement of the Chilkoot at the mouth of the Taiya River when the Healy-Wilson trading post was established, is almost all gone, wiped out by the stampede and the Taiya River. Before contact, the Tlingits were a highly organized, aggressive, and sophisticated people with a highly developed art style, and political and social development. Their diet was based largely on salmon, and other marine resources such as halibut, herring, cod and other fish and shellfish. They supplemented their diet by hunting other wildlife - deer, bear, ptarmigan, birds, and mountain goats. Eulachon oil, herring eggs, seaweed and forest greens and berries rounded out the general diet. They were master woodworkers, using local timber for many products such as carvings, tools and boxes, canoes, houses, etc.

It is known that prior to the stampede, the coastal lowlands near the Lynn Canal were occupied by Chilkoot and Chilkat Tlingit groups and the Yukon interior was occupied by Tagish Athabaskans (sometimes called Stick Indians), with Tutchone and Han to the north of them. The coastal groups traded fish oil (eulachon) and sea products to the Tagish for furs and horn over the Chilkoot and Chilkat trails, which were foot paths at that time. The White Pass trail was known but was not used much and its existence was kept a secret. This trade went on for at least 200 years with the Tlingit maintaining a virtual monopoly on the trade with the interior. The Tagish, in turn, acted as middlemen for their northern neighbors.

After contact, the Tlingit acted as middlemen for a thriving trade in local and Euroamerican goods between the interior and Russian, Boston and Hudson's Bay trading companies. The Tlingit used the Chilkoot Trail as their main trading route in the interior and defended their monopoly, not permitting others to use the passes and even burning Fort Selkirk in the Yukon in 1852 when the Hudson's Bay Company attempted to trade directly with the Interior groups. In 1879, U.S. Navy Commander L.A. Beardsley reached an agreement with the Tlingit whereby miners would be permitted to reach the Yukon via the passes but would not interfere with their regular

trade. Of course, the stampede overwhelmed the local cultures, the trade and the trails. However, when the miners arrived with tons of goods to transport across the passes, the local natives were the primary packers until the arrival of wagons and horses, the later construction of an aerial tram, and finally the construction of the railroad.

Discussion

As a National Historic Park of about 13,000 acres, KLGO should be surveyed and inventoried at the 100 % level. A complicating factor is that much of the land in the park is owned by the state of Alaska and managed by the National Park Service under a memorandum of understanding. Good progress has already been made towards meeting the goal of 100 % survey but a great deal remains to be done. A park-based inventory and research program needs to be continued until all goals are met.

Kobuk Valley National Park

Kobuk Valley National Park (KOVA), was created in 1980 under the Alaska National Interest Lands Conservation Act (ANILCA). This act states that KOVA is to be managed "for the following purposes, among others: To maintain the environmental integrity of the natural features of the Kobuk River Valley, including the Kobuk, Salmon, and other rivers, the boreal forest, and the Great Kobuk Sand Dunes, in an undeveloped state; to protect and interpret, in cooperation with Native Alaskans, archeological sites associated with Native cultures; to protect migration routes for the Arctic caribou herd; to protect habitat for, and populations of, fish and wildlife including but not limited to caribou, moose, black and grizzly bears, wolves, and waterfowl; and to protect the viability of subsistence resources." Archeological and ethnographic resources are specifically discussed in the enabling language for the park and it is very rich in both. Prehistoric resources within the park are extensive and of national and international significance.

The park is located in Northwest Alaska. It consists of the valley of the Kobuk River, running along the southern edge of the western end of the Brooks Range. The boundary of KOVA runs along the ridgetops of a set of mountains (the Baird Mountains to the north and the Waring Mountains to the south) that essentially forms a circle, defining and enclosing the Kobuk Valley. The middle two-thirds of the Kobuk River, from just above Kiana to just below Ambler, is included in the park, as are several major tributaries (Salmon, Hunt and other rivers).

Land Ownership

KOVA has a gross area of about 1,750,700 acres, of which 1,660,000 acres is in federal ownership. Within the park there are 182,767 acres of designated

Wilderness lands. About 81,000 acres of non-federal lands lie within the park. The state of Alaska claims about 9,500 acres (mostly submerged lands), with the rest divided among several Native Alaskan interests, including NANA Regional Corporation, Ambler Village Corporation and Kiana Corporation. These include 61 Native allotments, and 94 acres in 14h1 cemetery and historical sites.

Environment

The Kobuk River begins in the central Brooks Range. The river's midsection, as it passes through the Kobuk Valley, is wide, slow-moving and clear, and its banks and bottom are sandy. Rushing clearwater tributaries to the Kobuk have their headwaters in the Baird Mountains. These are the Akillik, Hunt, Kaliguricheark, Tutuksuk, Salmon, and Kallarichuk rivers. Only slow moving creeks enter the Kobuk from the south.

Trees approach their northern limit in the Kobuk Valley, where boreal forest and arctic tundra meet. Large expanses of tundra cover the valley in some locations, while forests cover the better-drained portions. In some places sparse stands of spruce, birch, and poplar grow above a thick ground cover of lichens (reindeer moss). Sand created by the grinding action of glaciers (mostly during the Pleistocene) has been carried to the valley by wind and water. Large sand dunes lie on the south side of the Kobuk River. These are the Great Kobuk Sand Dunes, the Little Kobuk Sand Dunes, and the Hunt River Sand Dunes. Older, vegetated dunes cover much of the southern portion of the valley.

Three general landscape types exist within Kobuk Valley National Park: the Baird Mountains, the Waring Mountains, and the Kobuk Valley (floodplains and terraces). The Baird Mountains, north and east of the river, are the western extension of the Brooks Range and separate the Kobuk and Noatak rivers. They range in height from 2500 to 4760 feet. On the south side of the Kobuk River lie the Waring Mountains, which are broadly folded, northeast-trending mountains that are generally less than 2000 feet high. The Kobuk River runs through the lowland between these two sets of mountains. This area is largely covered by glacial drift and alluvial deposits, including clayey till, outwash gravel, sand, and silt.

Although there are currently no glaciers within the park, at least five major Pleistocene glaciations have left effects in the area. Especially noteworthy are the large dune fields that were the result of the strong easterly winds that moved glacio-fluvial deposits of sand and silt during interglacial periods. These dune fields cover approximately 200,000 acres, mostly vegetated by tundra and forest. There are presently three active dune fields: the Great Kobuk Sand Dunes lie less than two miles south of the Kobuk River and immediately east of Kavet Creek (a major archeological site; Ahteut, is located there also); the Little Kobuk Sand Dunes lie about five miles south of the river in the southeastern part of the park; and the Hunt River Sand Dunes are located on the south bank of the Kobuk River across from the mouth of the Hunt River.

The Kobuk River is one of the major rivers of northwestern Alaska. It drains an area of 11,980 square miles and is about 350 miles long. Its course is characterized by meanders, oxbow bends, and sloughs. The floodplain varies from one to eight miles wide with most flooding occurring during spring breakup, usually due to ice jams. There are six major tributaries of the Kobuk. All have their headwaters in the Baird Mountains and all are entirely undeveloped. One of them, the Salmon, has been designated a Wild and Scenic River in that national system. There are numerous small lakes and ponds scattered throughout the park, some due to the permafrost and some due to detached meanders or oxbows of the rivers.

The Kobuk Valley is partially forested and is typical of the broad transition zone between forest and tundra. The vegetation of this park is of particular scientific interest because of tree line phenomena, the relationship of vegetation to the sand dunes, the proximity to the eastern end of the Bering land Bridge, and the relationship of vegetation to human use of the Kobuk Valley for thousands of years. Forests occur on the better-drained areas along stream courses and on higher ground. There is an alternating tundra and forest pattern that forms a mosaic across the valley. Spruce and balsam poplar grow in the lower and middle reaches of the river valleys that extend into the Baird and Waring mountains. Willow and alder thickets and isolated cottonwood grow up to the headwaters of the rivers and streams. Alpine tundra covers the higher slopes and ridges. Tussock tundra and low, heath-type vegetation covers most of the flat floor of the valley. Of note is that lightning and human-caused fires have greatly affected the vegetation processes over much of the Kobuk Valley as willow, alder and fireweed have invaded or become dominant in many burned areas.

The fish and wildlife of KOVA are typical arctic and subarctic fauna. The major economic species are caribou, moose, salmon, sheefish, and other fish species. Caribou of the Western Arctic Caribou herd range over the entire region. The 1986 herd size was approximately 225,000. The herd migrates through the park twice a year - southward in August from their summer range north of the Brooks Range and the DeLong Mountains and northward from their winter range in the Selawik Hills-Buckland River area in March. Onion Portage, in KOVA, is a major crossing point of the herd, and has served as a hunting stand for at least 10,000 years. Moose were scarce in the region 50 years ago but the population has steadily increased in recent years and now numbers several thousand. There is some indication that moose populations have been high in the past and have fluctuated along with climatic shifts.

Dall sheep are present in the higher elevations of the Brooks Range. Bears, both grizzly and black, are found throughout the region, as are wolves, coyotes, and foxes. Other fur bearers are also locally and seasonally abundant. Birds are seasonally abundant, especially waterfowl which use the area for summer breeding. So far, 83 species of birds have been identified within KOVA.

Twenty-five species of fish are found within the Kobuk River drainage. Although all five species of Pacific salmon occur in the waters of the region, only chum, king, and pink salmon occur within the park. Chum salmon is the most abundant and supports commercial and subsistence harvests. The Salmon and

Tutuksuk rivers are major spawning and production tributaries of the Kobuk River for chum salmon. Within the Kobuk River in the park, sheefish, or inconnu, are found and harvested. Arctic char and arctic grayling are more widely distributed throughout the park. Other species, such as northern pike, whitefish, burbot, sculpins, and least ciscos inhabit rivers and lakes in the region and park.

Archeological Resources

The Onion Portage site, on the Kobuk River in the eastern side of the park, is one of the most important archeological sites in arctic America. It has more than 70 distinct stratified cultural layers that document a progression of human camps spanning about 12,500 years. Onion Portage is still in use as a major caribou hunting site as it has been for over 100 centuries. Large portions of the site remain unexcavated. Onion Portage has been designated a National Historic Landmark and placed, as a district, on the National Register of Historic Places. It is not, however, owned by the park, but remains an inholding of the NANA Regional Corporation.

The Kobuk valley has been lived in and used for at least 12,500 years. People of all the major cultural groups that have lived in northwest Alaska have left evidence of their presence at numerous sites in the park. The known sites are concentrated along the Kobuk river and its tributaries. Detailed archeological investigations in five sites in the park were made by J.L. Giddings in the 1940's, including Ahteut, Ekseavik, and Ambler Island. He also did dendrochronological research there. Extensive excavations, begun by Giddings and completed by Anderson, were done in the 1960's at Onion Portage. Since the termination of work at Onion Portage, very little archeological work has been done in KOVA. Hickey excavated several sites within and near the park. Stanford and Dixon conducted a reconnaissance survey of portions of the Great Sand Dunes and located several sites, some of which may be very early.

Apparently, only the highlights of the park's prehistory have been revealed. This is because most of the known archeological sites in KOVA are winter settlements which were concentrated along the rivers. Other aspects of the the lifeways of the prehistoric inhabitants of the valley, especially those activities that took place away from the Kobuk River, are still basically unknown and remain to be investigated. Enough is known of the cultural chronology of the park (based mainly on the findings from Onion Portage), however, to outline the sequence.

The earliest inhabitants of the valley lived in a treeless environment around 12000 years ago. These people of the Paleoarctic cultural tradition are represented by the Akmak and Kobuk levels at Onion Portage and seem to have been mostly hunters of caribou. Evidence of the Paleoarctic culture ended at Onion Portage about 8000 years BP.

After a gap of almost 2,000 years, during which no people appear to have occupied the Onion Portage area, a different cultural group, the Northern Archaic tradition or the Palisades and Portage cultures occupied the Onion Portage area. Their traditions were derived from the spruce-forest or boreal forest regions to the

south and east, and they could well have been Indian from the interior regions. Their camps show some evidence of fishing as a major subsistence activity. The diagnostic artifact of this tradition is the side-notched projectile point. It is sometimes found with the microblades and cores that are the hallmark of the Paleoarctic and the Arctic Small Tool traditions. However, this was not the case at Onion Portage (Anderson 1968), leaving the theoretical and chronological issues that are inherent in this contradiction to be further investigated (Schoenberg 1995).

About 4,000 years ago, arctic-oriented peoples of the Arctic Small-Tool tradition again moved into the Kobuk Valley. They had developed lifeways that enabled this culture to spread over most of the Arctic, from Norton Sound to Greenland. While coastally oriented, regional and local specializations were also present. The people in the Kobuk Valley undoubtedly used local resources such as caribou and fish. They also maintained strong ties to the coast and its marine resources. They probably made seasonal journeys downriver to the coast for trading and marine mammal hunting. From about 1,500 to 2,000 years ago, this coastal orientation becomes even more evident in the archeological record as the Norton tradition becomes identifiable.

From about 1,000 to 1,500 years ago (A.D. 500 to 1000), the middle and upper portions of the Kobuk River were generally unoccupied, perhaps because of a decline in the caribou population (Anderson 1977). During this interval, native peoples of Indian descent (possibly Koyukon) used Onion Portage intermittently for caribou hunting.

By about 800 years ago (A.D. 1200), arctic-oriented people once again occupied the valley. About 25 miles downriver from Onion Portage, Ahteut, a major archeological site with an extensive series of housepits, provides the definitive data and description for the Arctic Woodland culture (Giddings 1952). This culture appears to have been unique to the Kobuk River region and shows the adaptation of coastal Eskimos to the forested and riverine environments of the Kobuk Valley. By A.D. 1400 the Arctic Woodland culture had developed a wide range of fishing techniques and had begun to practice a seasonal round that was basically the same as that seen in late prehistoric times. Settlements appeared in the middle reaches of the valley. The earliest of the sites was located where both winter caribou hunting and summer salmon fishing were possible. Sites such as Ahteut, Onion Portage, and the confluences of the Salmon River, the Hunt River and the Ambler River all had winter houses located on or near sand bars along river bends where seining for salmon was productive. The site at Ambler Island, dated at A.D. 1750, shows the long continuity of the lifestyle of the Arctic Woodland Culture.

The middle Kobuk Valley seems to have remained fairly stable during the early 19th century. Sometime after 1850, the caribou population declined (as happened periodically) and subsistence-efforts shifted more to the seacoast. By then, the influences of western civilization were being strongly felt. Actual exploration of the Kobuk River by Euroamericans, however, had been preceded by at least 150 years of trade and contacts along the coasts of northwest Alaska. Russian trade goods reached people of the Kobuk region through extensive trade ties across the Bering

Strait (as had existed for centuries) between the Native peoples of eastern Siberia and western Alaska.

Ethnographic Aspects

In the 19th century, two Inupiat societies, the Akunirmiut and the Kuuvaum Kangianirmiut, occupied the area now included in the park. Descendants of these people, referred to collectively as "Kuuvangmiit" still use the park and now live in the villages of Kiana, Ambler, Kobuk and Shungnak. The first U.S. Census of the region was conducted in 1900. At that time, the second largest village encountered along the Kobuk River was at the mouth of the Hunt River (now within the park). This village was near Camp Penelope. Grinnel, one of the Kobuk stampeders living at Camp Penelope, provides some accounts of the first substantial contact with Euroamericans. Coordinated ethnographic, historical, and archaeological study of the village and Camp Penelope can open exciting and unique interpretive, historical and methodological vistas.

The site of Stonewall Jackson's (Oolyak) cabin and camp (XBM-046), at the Kallarichuk ranger station, is being eroded by the Kobuk River. Oolyak, interviewed by Giddings, was one of the last Kobuk Inupiat to reach adulthood prior to sustained Euroamerican contact. Archaeological investigation of the site and interviews with his descendants could provide a powerful illustration of Inupiat acculturation.

Much data have been generated by the CRPP-funded Ethnographic Identification Study for Kobuk Valley National Park. Major research efforts were undertaken at the villages of Kiana and Ambler. The placename data generated by this study will form the basis of an Ethnographic Resource Inventory.

Historical Aspects

While there is much potential for locating historical sites in the park, almost no historical research or surveys have been completed. The remains of Cantwell's encampments and Stoney's winter camp, Fort Cosmos, dating to the mid 1880s, may be located through systematic fieldwork. Local residents have stories, potential leads, about the location of Fort Cosmos. E.S. Hall, Jr. attempted to locate Fort Cosmos from the air but failed. Camp Penelope and thirty-two other gold stampeders' camps established during the winter of 1899-1900 should also be locatable if they have not been claimed by river erosion. As most of the camps were occupied for a single season only, they can provide valuable "snapshot" images of Kobuk miners' lives at the turn of the century. In 1992 NPS rangers found a log structure that may have been the church built by the Long Beach Mining and Trading company at Camp Penelope. Shungnak villagers report finds of boilers, propellers and other old ship parts from along the river that may have been used and left by the Kobuk Stampeders or by later miners and traders.

Kiana, outside the western park boundary and established in 1908 or 1909 as "Squirrel City," supported the miners at Kleary Creek and grew up adjacent to the

Inupiat village of Kutyak. Originally known as "Long Beach," the village of Kobuk, outside the eastern park boundary, supplied miners working the upper river and had established regular winter mail service (by dog team) by 1905. In the early days, trading companies at Kianna and Kobuk issued "tokens" and credits in lieu of U.S. currency. The history of trade and traders' records and inventories will have significant bearing on the interpretation of historic sites and artifacts located on park lands.

Discussion

The archeological resources in KOVA are major components of the resources base in the park, as discussed in the implementing legislation. An archeological resources base map of the park has not been created and much of the land within the park has not been inventoried. An Archeological Overview and Assessment of the park has not been done as yet. There is an immediate need for ethnoarcheological research as well, as the local population ages and sources of oral history about the park and its resources disappear. In addition, many sites are vulnerable to erosion, development, and ongoing use of the park.

Lake Clark National Park and Preserve

Lake Clark National Park and Preserve (LACL), was created in 1980 under the Alaska National Interest Lands Conservation Act (ANILCA). This act states that it is to be managed "to protect the watershed necessary for the perpetuation of the red salmon fishery in Bristol Bay; to maintain unimpaired the scenic beauty and quality of portions of the Alaska Range and the Aleutian Range, including volcanoes, glaciers, wild rivers, lakes, waterfalls, and alpine meadows in their natural state; and to protect habitats for and populations of fish and wildlife, including, but not limited to caribou, Dall sheep, brown/grizzly bears, bald eagles, and peregrine falcons." Though not specifically mentioned in the implementing language, cultural resources are part of the NPS mandate under the Organic Act and numerous other laws and regulations. In addition, in order to properly manage and interpret the natural environment, animal populations, and plant communities of these units it is necessary to develop a diachronic perspective. Humans have been part of this environment and interactive with it for at least 8000 years. Park and preserve resources continue to be so used by the local rural population, mostly inland Dena'ina, who reside in or adjacent to LACL. The General Management Plan (1984) states that one of the major resources management issues for the park and preserve is the "management and protection of cultural and archeological resources and the opportunity for subsistence lifestyles by local rural residents." The General Management Plan goes on to state that "Past and present uses of the park and preserve will be identified, evaluated and interpreted, and management programs will be developed and implemented to

protect cultural values." In addition, "A cultural sites inventory and cultural resources base map will be prepared and maintained ..."

The northern boundary of LACL lies approximately 100 miles southwest of Anchorage, accessible only by air or on foot, through formidable, glaciated passes. The park includes almost all of the rugged Chigmit Mountains, which are located at the convergence of the Alaska and Aleutian mountain ranges. This terrain effectively had isolated this area from the more intensive effects of the early Euroamerican contact that had occurred on the coast. The preserve adjoins the park to the south and west and comprises an area of foothills, rivers and lakes, and tundra plains. The southeast boundary is formed by the coast of Cook Inlet, from Chinitna Bay to Tuxedni Bay. The southwestern boundary runs approximately 30 miles north of Lake Iliamna.

Land Ownership

Lake Clark National Park and Preserve encompasses approximately 4,050,000 acres. The national park contains 2,637,000 acres and the preserve 1,400,000 acres. Of the total, 2,275,000 acres have been classified as Wilderness. The Federal government has title to 3,352,000 acres. About 507,000 acres are under application under the Alaska Native Claims Settlement Act and the Alaska Statehood Act. There are also about 185,000 acres that are non-Federally owned. Of these acres, the state of Alaska has title to 95,000 acres; the rest are divided between Cook Inlet Regional Corporation, Nondalton Village Corporation, Iliamna Village Corporation, Pedro Bay Village Corporation, and Tanalian Inc. Native Group. Ten thousand acres of small tract holdings include Native Allotments (76), homesites and a farm, 9 patented mining claims, and 10 14(h)(1) cemetery and historical sites.

Environment

The area can be divided into four distinct physiographic realms: the Cook Inlet coastal region, the Alaska-Aleutian mountain ranges, the foothill and lake region, and the tundra plains region. The coastal region, from Tuxedni Bay south to Chinitna Bay, is formed where the mountains plunge almost directly into the Inlet. The precipitous coast is deeply incised with U-shaped glacial valleys and fjord-like coves. The heads of the coves along here are generally choked with sediment washed down from the uplands. The Alaska Range joins the Aleutian Range at the north of the park to form the dominant feature of the park - the Chigmit Mountains. These are rugged mountains carved by glaciers and frost action with deep river canyons between them. There are three active volcanoes in or near the park - Mt Spurr (11,070 ft) to the north; Mt Redoubt (10,197 ft) and Mt Iliamna (10,016 ft) in the park. The volcanic history of this area has certainly had great influence on its cultural and ecological history.

West of the mountains is a region of foothills and terminal moraines. Behind this band of moraines lies a series of lakes, smaller in the north of the park and

culminating with the 110-square-mile Lake Clark. These lakes, and the rivers leading from them have very high potential for cultural resource occurrence. The foothills region gives way on the west to the tundra plains. Rivers through this area become meandering and slow, and much of the surface water is trapped in a myriad of poorly-drained ponds and small lakes. This area supports moist tundra, sparse stands of black spruce, and large populations of caribou, moose, birds, and fish.

There are major river systems running through and from the park. The most important of these river systems is the Kvichak River, which hosts one of the largest sockeye salmon runs in the world. Prehistorically and historically this, and other, salmon runs formed the subsistence and economic backbone for the residents of this region.

Archeological Resources

There has been a limited amount of archeological work done within LACL. The earliest work was the excavation of the Kijik Village site on the north shore of Lake Clark. This site is now on the National Register of Historic Places and it is a National Historic Landmark as well. Several brief, reconnaissance surveys and compliance clearances have been done in the last 20 years. These indicate that the full range of archeological resources, from early prehistoric to late prehistoric and historic, can be expected to occur in the park and preserve.

A brief discussion of the cultural history of this and surrounding areas provides a basic framework for assessing the resources and needs of LACL. The prehistory of Bristol Bay and Cook Inlet are both relevant to this park. Bristol Bay is relevant because most of the drainages in the park and preserve flow into the Bering Sea at Bristol Bay, and a great deal of cultural influence was felt from that region. Cook Inlet, although on the east side of the Alaska and Aleutian ranges, is important because it has been demonstrated historically to have a connection with Lake Clark and there is no reason to believe that this relationship did not extend into prehistoric times as well. The discussion focuses on Alaska/Pacific Eskimo cultures because little work has been done in this area on Dena'ina prehistory (a major ethnography by Ellanna and Balluta has recently been completed). Indeed this is one of the main areas of concern for LACL. Historically, the occupants of LACL were and are Inland Dena'ina Athabaskans. The Kijik village site represents Dena'ina utilization of the area.

The earliest archeological tradition found in the Bristol Bay region is the American Paleoarctic tradition. It dates from 10000 to 7500 BP. The nearest well-documented sites of this tradition are from the Ugashik Narrows in the Katmai area, Graveyard Point at the Naknek River, and Igiugig at the outlet of Iliamna Lake. A possible Paleoarctic site was found at XLC-034 which is on a high hill overlooking the southwest shore of Telaquana Lake. However, this temporal placement appears to conflict with the glacial chronology of this area.

The next cultural tradition, also found across Alaska, is known as the Northern Archaic tradition of about 6000 to 4000 BP. This tradition seems to represent an

influence from the south and east - the boreal forest Archaic cultures there. This is interesting because it marks a cultural development that cannot be traced directly to Siberia and northeast Asia. Nearby, major sites of this tradition have been found at Ugashik Narrows and Graveyard Point, as well as at Kagati Lake and Security Cove. Two sites representing this tradition have been found in LACL; one near the outlet of Twin Lake (XLC-042) and one on a hill just west of Snipe Lake (XLC-044). If this cultural attribution is correct, it would be significant because this area of the park was still glacier-covered until about 6000 BP.

As in other areas, following this tradition came a series of affiliated traditions that most scholars believe lead directly and indirectly to historic Eskimo cultures. The Arctic Small Tool (AST), Norton and Thule provide a fairly continuous evolution of Eskimo technology. They mark a strong flow of migration and diffusion from the Bering Sea region to the north. The bearers of the distinctive Arctic Small Tool technology seem to have persisted in Alaska from about 5000 BP to 3000 BP. Indeed, these people seem to have been the first truly successful colonizers of the High Arctic, spreading as far east as the Canadian Arctic and Hudson's Bay. They combined a maritime hunting culture with exploitation of inland resources. The major site for this group in the area is at Brooks River in Katmai National Park. The later (2200 - 1000 BP) Norton tradition seems to have been more of a coastal culture. Well represented in the Bristol Bay region, major sites are at Brooks River and at Ugashik Lake. A possible Norton-style projectile point was found at XLC-033 on Telaquana Lake in the park.

The final part of this prehistoric triad is the Thule tradition. Depending on the area, this tradition began as early as the beginning of the Christian era and continued until European contact. There is evidence for a Thule expansion into the Pacific basin and ultimately to Kodiak Island and the southcentral coast of Alaska, where they influenced the Pacific Eskimo cultures.

The early prehistory of Cook Inlet, which forms the eastern boundary of the park, is not very well known. The main cultural sequence is the Kachemak Bay sequence (I-IV), which runs from 4000 BP to late prehistoric times, and was probably related to the Ocean Bay cultures of Kodiak. Kachemak settlements were located along rugged coastlines with deep water offshore and mountains inland, especially in the southern portion of the Inlet. Apparently, the Kachemak Bay people were a Pacific Eskimo culture that spread as far south as Kodiak island and as far east as Prince William Sound.

Ethnographic Aspects

The third cultural element of the prehistory of Lake Clark National Park and Preserve, the Dena'ina, is the least well known archeologically. Inland Dena'ina, the late prehistoric and historic inhabitants of the Lake Clark area, are a branch of the much larger Athabaskan people. The origins of the Athabaskan groups can almost certainly be traced back to northeast Asia and Siberia but these early migrants have not been pinpointed at any archeological sites in Alaska. However, linguistic

research has shed some light on the prehistory of the Athabaskans, despite the difficulty of correlating linguistic and archeological data, especially as it relates to group and ethnic identity.

The ancestral language was, apparently, the Na-Dene family of languages (containing Athabaskan - Eyak - Tlingit), which according to current linguistic theories, arrived in Alaska 6000-7000 years ago. Proto-Athabaskan diverged from the others about 3500 years ago and as recently as 2500 years ago was still undifferentiated and also showed no significant Eskimo language influence, suggesting the physical separation of the proto-Athabaskans from the ancestral Eskimo and Aleut peoples. Krauss has argued that eastern interior Alaska and adjacent west central Canada were probably the Athabaskan linguistic "homeland." By minimally 1500 years ago, this language family had differentiated into three main branches - Apachean, Pacific, and Northern, of which the contemporary Athabaskan languages of Alaska and Canada are a part. Dena'ina is a dialect of the northern Athabaskan family.

There is linguistic and oral historic evidence to conjecture that the Dena'ina were expanding their territory prior to and at the time of Euroamerican contact, including movement into the coastal of Cook Inlet. Linguistic interpretations strongly support the contention that the Dena'ina were originally an interior oriented people who inhabited the high, inland plateau west of the Alaska Range, rather than a coastal population who moved across the mountains to escape the oppression of Russian contact. Unfortunately, there has not been enough archeological research undertaken in the area to allow interpretive consensus between linguistic, oral historic and archeological data. The residents of Nondalton, who were the historic inhabitants of the Lake Clark area, speak a dialect of Dena'ina called Inland Dena'ina. This dialect is related to dialects that were spoken on the Kenai Peninsula and at Old Iliamna, but shows enough distinctiveness to indicate some degree of cultural isolation.

The Kijik Village site, on the northwest shore of Lake Clark, is the most investigated and significant archeological site in the park. It represents an Inland Dena'ina occupation at least 200 years ago and probably much longer. Its last occupants left in the early twentieth century and moved to Nondalton. The site is still incompletely mapped or excavated, and remains a site with significant research potential. Cultural remains have been reported along the Kijik River all the way to Kijik Lake, where the Kijik fish camp site has been located. Additional sites have been found from the Lake Clark shore up to the slopes of Kijik Mountain. All the sites have been included in the Kijik Archeological District which is on the National Register of Historic Places. The excavations that have been done at Kijik have revealed large amounts of Russian and American trade goods and a declining use of the aboriginal material culture. It seems by this time the relative isolation of the Lake Clark area from outside influence had been breached.

Historical Aspects

Following Captain Cook's 1778 explorations of Cook Inlet, Euroamerican contacts steadily increased. Navigators visited and traded with the coastal Dena'ina toward the close of the eighteenth century, and the Russians established settlements and trading posts along the Kenai Peninsula as part of the fur trading activities. Some evidence suggests that the Russian Bocharov may have reached Iliamna Lake in 1791 and perhaps established a small and temporary trading station in that area. This period was marked by unfair dealings and mismanagement by the Russians.

The Lake Clark people were in contact with their Cook Inlet relatives (and possibly with their Yupik neighbors to the west on Bristol Bay). During the period of Russian hegemony in Alaska, missionary activity by the Russian Orthodox Church was widespread. Kijik shows evidence of this activity since the remains of a Russian Orthodox church have been documented and are still present today..

Van Stone and Townsend estimate that between 1875 and 1890 there was a population of from 150 to 175 at Kijik. Other Dena'ina settlements during the nineteenth century were at Telaquana lake, and on the Mulchatna and Stony rivers. In the 1890's American traders penetrated into the Lake Clark area. Lake Clark was named for John W. Clark of the Leslie Expedition. By this time, epidemic diseases were making significant inroads in aboriginal population, including a major measles epidemic in 1902. By the early 1900's almost all of the Inland Dena'ina in the general area were concentrated at the north end of Iliamna Lake and at Nondalton. Important factors in this move were increased access to Bristol Bay and its salmon fishing and canning industry and the closeness to the trading posts which had become established there. Trapping for furs remained a major economic activity among the local people. In addition, the resources of the Lake Clark region continued to be heavily used by the Inland Dena'ina, as has continued to the present day.

Van Stone and Townsend (1970:122) have concluded:

Representing as it does the peripheries of Tanaina Indian expansion inland... the Iliamna-Lake Clark area is an extremely important one from the stand point of ...understanding Eskimo-Athabaskan boundaries and the problems of contact between the two groups. More specific than this, however, is the importance of the Lake Clark region itself for an understanding of nineteenth century Tanaina expansion... and affords the ideal location for the study of the regionally specialized contact Tanaina culture.

Discussion

The Archeological Overview and Assessment of LACL has been programmed and funded. It should be completed within a year. At that point, a comprehensive, long-term inventory and evaluation program should be instituted as soon as possible.

LACL is one of the largest Alaska parks and is probably the least known from the standpoint of archeological resources. As a major park near Alaska's largest city, its resources will come under increasing pressure. With at least one National Historic Landmark, a viable and ongoing Native community and subsistence lifestyle, and an archeologically interesting location, this park and preserve has great archeological potential.

Noatak National Preserve

Originally created through Presidential proclamation as Noatak National Monument in 1978 by President Jimmy Carter, the monument became Noatak National Preserve in December 1980 with the enactment of the Alaska National Interest Lands Conservation Act (ANILCA, Public Law 996-487). The preserve was to be managed in order to "maintain the environmental integrity of the Noatak River and adjacent uplands" (NPS 1985), to protect wildlife habitat and populations, and protect archaeological resources in order to provide opportunities for scientific research.

The preserve covers 6,574,481 acres in northwestern Alaska. It is bordered on the west by Gates of the Arctic National Park and Preserve (GAAR), to the south by Kobuk Valley National Park (KOVA) and to the west by Cape Krusenstern National Monument (CAKR). Bering Land Bridge National Park and Preserve (BELA) lies to the southwest, just across Kotzebue Sound. The Noatak River originates in Gates of the Arctic National Park and Preserve to the east, and flows westward through the Noatak River basin that makes up the central portion of the NOAT preserve. Eventually the river exits the preserve at its western border, makes a turn south, and empties into Kotzebue Sound, just north of the city of Kotzebue.

The monument is not accessible by road. Instead, primary access is limited to either air or boat traffic. During the winter months, snowmachine and dog sled travel are common. All forms of travel are dependent on weather conditions.

The preserve, along with CAKR and KOVA, is administered from headquarters in Kozebue, Alaska as part of the Northwest Alaska Areas Office (NWAK).

Land Ownership

Of the 6,574,481 acres within the preserve, non-federal lands make up approximate 22% of the preserve, or 289,973 acres, and consist of a variety of Native allotments under application, easements areas selected by Nana Regional Corporation, and other village corporations, and State of Alaska navigable waters.

Environment

The preserve combines two climatic themes. Near the coast a maritime climate prevails, while the interior experiences a continental climate with more

extreme variations in temperatures and precipitation. Temperatures in the summer range from the low 30's to the high 60's degrees Fahrenheit. Winter temperatures range from -20 to 0 degrees (F). Wind chill factors are common during the winter months, with temperatures as low as -70 degrees (F) being experienced. Precipitation varies throughout the preserve, with the coastal and lowland areas receiving about 10 inches annually. The higher inland areas receive more, with 25 to 30 inches being the average. Annual snowfall ranges from 45 inches to 100 inches, with most snow being accumulated in the higher inland elevations to the east.

The Brooks Range geosyncline and the accompanying Arctic Foothills and Arctic Coastal Plain were all in place by the late Paleozoic era. By the Cretaceous, after a period of mountain-building processes, the Brooks Range dominated the area and volcanic activity was a common occurrence south of the range. Shale, chert, and limestone make up the bedrock geology of the DeLong Mountains, which are part of the Brooks Range. Intrusions of igneous rocks, as a result of nearby volcanic activity, occur as well. The lowland areas of the Noatak drainage are made up of sedimentary materials, including siltstones, sandstones and limestones. Unconsolidated deposits of gravel, clay, silt and sand are concentrated in the lower areas of the Noatak drainage.

The area was glaciated in the past, but was not covered completely during the last (Wisconsin) glaciation. Instead, mostly the upland areas were glaciated. The landscape exhibits typical glacial features such as U-shaped valleys, braided streams, kames, kettles, moraines and alluvial till. Permafrost is discontinuous throughout the lowlands of the preserve, but continuous below the Baird and DeLong mountains.

Wildlife is the primary natural resource of the preserve and include caribou, moose, Dall sheep, grizzly bear, wolf, fox, lynx, marten, beaver and muskrat. Small mammals such as the hoary marmot, arctic ground squirrels, lemmings and porcupine also exist within the preserve. A variety of bird life inhabits the preserve, particularly during the summer migratory season, when thousands of birds congregate in the arctic for breeding. The Canada goose, white-fronted goose, tundra swan, and all four species of loon are common in the preserve. Raptors (golden eagles, gyrfalcon and rough-legged hawks) nest along the Noatak drainage in the rocky cliffs of tributaries. The arctic peregrine falcon is the only threatened species known to occur in the preserve.

The Noatak River is considered key in the subsistence and commercial fisheries harvest for Northwest Alaska. The most common fish, Arctic grayling and Arctic char, are found in the Noatak River and its tributaries. Salmon occur throughout the Noatak drainage system, with Chum being the most abundant, and sockeye, pinks and king found in the lower reaches of the river. Sheefish inhabit the Kobuk and Selawik Rivers in the preserve and are considered a preferred subsistence item. Trout are found in the deeper lakes within the preserve, as are burbot and freshwater cod.

Vegetation within the preserve is predominately low mat tundra. The lower Noatak drainage contains a boreal forest cover. At higher elevations, an alpine tundra community can be found, with willow, heather and combinations of grasses,

sedges, wildglowers and mosses. Drier areas support lichens and saxifrages. Moist tundra community occurs along the foothills of the Noatak Valley. This is the predominant vegetation of the preserve and consists of cottongrass, willow, dwarf birch, Labrador tea, Lapland rosebay, mountain alder and avens. Bog rosemary and cranberry are found in wetter areas as are salmonberry and a variety of mosses. A spruce forest community, consisting of white spruce, paper birch, aspen, poplar and black spruce, occur sporadically throughout the preserve and are generally located along the south-facing foothills and valley bottoms.

Archeological Resources

Archeological investigations of the Noatak River drainage began in the early 1940's and have continued through the years. In spite of this, however, very little is actually known about the cultural prehistory of the preserve. This is in part due to the fact that few of the investigations carried out have been reported, that few full-scale excavations have occurred, and that preservation within sites is poor (see Hall 1974).

Paleo-Indian occupation within the preserve is postulated on the basis of isolated finds of fluted points. The discovery of Paleo-Indian remains at the Mesa site, located in BLM-managed land in northern Alaska (north of the preserve), coupled with its recently assigned 11,700 BP year old date gives further evidence that these peoples were likely to have occupied portions of the preserve. Recent finds, as yet unreported, of similar materials have been located within the Noatak Drainage system in the preserve.

Sites representing the Paleoarctic tradition and dating between 10,000 and 7,000 BP are also thought to occur within the preserve. This, too, is based on evidence collected in the surrounding area. Early microblade and core sites possibly associated with the early Paleoarctic tradition are generally thought to date in the Kotzebue Sound area between 10,000 and 7000 BP. Deposits at Trail Creek Caves in the Bering Land Bridge National Park and Preserve to the south contain Paleoarctic tradition remains dated to 9000 BP and an even deeper and earlier human occupation was postulated on the basis of modified animal bones (the famous calcaneus) that were interpreted as reflecting human activities, dating to approximately 13,000 BP. This interpretation, while not disproved, is presently considered tentative. The Paleoarctic tradition typical assemblage, containing microblades, microcores (often wedge-shaped), flake burins and large bifaces, shows definite affinities with archeological assemblages in northeast Asia, such as the Dyuktai culture of Siberia.

Remains representing the Northern Archaic tradition were found at the Palisades site at Cape Krusenstern (CAKR) and at Onion Portage on the Kobuk River (KOVA), also outside of the NOAT preserve area. As it is generally considered a culture of the interior it seems likely this occupation would occur within the preserve. Northern Archaic remains also occur in Anuktuvuk Pass, to the east in Gates of the Arctic National Preserve, and other scattered locations in northern Alaska. It is thought to be an occurrence resulting from the expansion of the northern boreal

forests, related to a climatic warming period, and a concomitant expansion of people and/or cultures from the boreal forests and Archaic cultures south and east of Alaska, in the Southwest Yukon (Giddings and Anderson 1986). The Palisades collection contained "corner-notched points, regular-edged unifaces, and the end scrapers" as well as "crude cobble and core tools...and a single shouldered point" and was ultimately assigned a 6,000 BP date.

The Arctic Small Tool Tradition (ASTt) was first recognized in the Denbigh Flint Complex of the Iyatayet site on Cape Denbigh, along the southeastern margins of the Seward Peninsula. ASTt has been defined as the early development of an economy that exploited sea mammals and resources of the hinterland. People of this tradition spread across the arctic, as far east as Hudson's Bay and as far south as the Alaska Peninsula, as a recognizable technology. The origins of this technology are somewhat obscure but certainly developed around the Bering Strait. Some artifact types appear in the eastern Siberian Belkachi culture but the manufacture and use of burin spall artifacts seems to be unique to the North American Arctic. ASTt first developed about 4200 BP and continued through a series of related cultures, ending with the Ipiutak culture around 1000 BP. Other complexes generally included Choris, Norton, near Ipiutak, and Ipiutak. Some scholars see the Norton tradition as a separate line of development instead of as part of this continuum.

The Northern Maritime tradition, which includes Birnirk, Western Thule, and Kotzebue Period cultures, dates from approximately AD 600 to the early 19th century. This tradition is considered the prehistoric expression of the modern historic Eskimo culture of the North American Arctic. Birnirk, the initial expression of the Alaskan Northern Maritime tradition occurred on the eastern side of Bering Strait at a time when Puvuk culture was developing on Siberian shores and the St. Lawrence Islands. The Alaska developments are generally held to be ultimately northeast Asian in origin. However, Birnirk and Ipiutak coexisted for several hundred years on the eastern side of Bering Strait. Thus, the relationship between Northern Maritime (and modern Eskimo) and the preceding Arctic Small Tool tradition cultures remains an important and interesting research domain. Birnirk sites have been found at Cape Krusenstern, Cape Prince of Wales and Cape Nome, i.e. on all sides of the preserve. The Arctic Woodland Culture represents peoples that moved inland full-time and developed a specialized inland lifestyle to take advantage of non-marine resources that had traditionally been a portion of the "Northern Maritime" tradition.

The succeeding Western Thule culture is dated between AD 950 and 1400. It is a continuation of a mixed sea and land mammal based economy but with a major emphasis on bowhead whale hunting. Western Thule culture followed ASTt cultures in spreading across the arctic. Western Thule settlements were large coastal villages, usually near whale migration routes. Use of thick, grit-tempered curvilinear-stamped pottery continued. Ground slate butchering implements and weapon insets replaced the flaked stone implements used in the preceding Birnirk period. By this time, the seal oil lamp, toggling harpoons, umiak, and dogs were present and in full use. The Kotzebue culture period, between AD 1400 and 1850, is seen as a direct outgrowth of the Western Thule culture and links the prehistoric and early historic

Inupiat cultures. Kotzebue period sites and remains are more numerous than those of any preceding culture and have been documented around the full extent of Kotzebue Sound. Sites dating to this time period have been found at Wales and the southern Seward Peninsula, indicating an increasing population. Extensive trading networks and communications were maintained over northwest Alaska, the Seward Peninsula, and across the Bering Strait into Siberia.

Historical Aspects

Prior to actual contact with western civilizations in the 1850's, the peoples inhabiting the Noatak Valley obtained Russian goods from the eastern Siberian native peoples with whom they had established extensive trade ties across the Bering Straits. At this time two related Eskimo groups were living the region: the Naupaktomiut (Lower Noatak) and the Noatagmiut (Middle and Upper Noatak). The groups from the Kotzebue and Kobuk River areas made regular hunting and trading excursions into the Noatak area. Archaeological evidence shows that in the late 1600's people were living in large villages along lake shores, but this changed around 1800 when temporary camps became more predominant.

Contact brought a host of new activities and severe disruption of the traditional native lifestyle. Initial contact brought exposure to new diseases for which the native populations had no natural immunity, causing a drastic population decline as whole families were wiped out. The commercial whaling enterprises and the fur trade introduced cash economy into the lifestyle, the ramifications of which are still being struggled with. And the introduction of Christianity brought major changes in the interaction between the native peoples and their environment.

Initial exploration by western civilization began in the 18th century with vessels sailing along the coastline. In 1826 Beechey surveyed Kotzebue Sound. Martin, from the H.M.S. Plover visited the lower Noatak in the Winter of 1850 and Stoney and Howard made winter trips in 1885 to the upper Noatak through the Kobuk region. In that same summer, S.B. McLenegan travelled up the Noatak River by boat and eventually published a map of the river valley.

The Klondike gold rush of 1898 brought prospectors into the Kobuk and Noatak valleys and eventually lead to more formal geological exploration and mapping of the area in the early 1900's.

In 1908 the California Yearly Meeting Friends Church began a federally funded mission school in Noatak village. This mission soon became the center for schooling, trading, and religion for the native peoples, causing the virtual abandonment of the upper Noatak basin by 1915 and establishing the village of Noatak as a large permanent settlement.

Ethnographic Aspects

Despite drastic population reductions and dislocations beginning in the latter half of the 19th century, the descendants of the early 19th century populace remain in

northwestern Alaska. These descendants still derive a significant portion of their sustenance and identity from the land and its resources. More so than in other parklands in Alaska (except Anaktuvuk Pass within GAAR) and in the continental United States (except Canyon de Chelly), the human-land relationship extending into parklands is strong. The life experiences, oral traditions, traditional knowledge and current endeavors of the Inupiat of northwestern Alaska are rooted in the landscape and its resources.

Archaeological, ethnographic, historic and contemporary perspectives perforce overlap and become blurred. Many current practices are discernable transformations of traditional activities. For example, the timing and kinds of activities held at Thanksgiving and Christmas and at the NANA Regional Corporation's annual meeting identify these gatherings as modern counterparts of the fall "kivgiq" or messenger feasts and the "katirut" or annual gathering of the members of each of the early 19th century societies. The traditional "qatngut" or trade fair, drawing visitors from as far away as Uelen in Chukotka was held at Sisualik or Kotzebue in early July throughout the 19th century. Visitors from Little Diomed Island continued their trading visits through the 1950s. This traditional meeting of neighbors, partners and kin is now incorporated into the American Fourth of July celebration. Although modern equipment is used, caribou are still killed while crossing the river in the vicinity of Onion Portage, just as they have been for millennia.

The Inupiat residents and neighbors of NOAT are park resources in several real senses. ANILCA-guaranteed subsistence use of parkland resources highlights an ecosystem continuum that includes man. Using the "direct historical method" or "upstreaming", anthropological researches can link the Inupiat users of NOAT to the archeological manifestation known as the "Arctic Woodland Culture" which began about 1250 A.D. Some researchers has extended more tenuous ethnic linkages far back as "Denbigh Flint complex" times, about 4,000 years ago.

In order to identify and evaluate any ethnographic resources within the park units, the Service must work cooperatively with the Inupiat. Place-names, gravesites and old villages acquire meaning and significance through Inupiat traditional knowledge and lore. The function and social context of items of material culture no longer in use may only be understood through the memories of Inupiat Elders. ANILCA recognizes the resource value of local communities to the parks and other conservation units and contains provisions for local hire.

Ethnographic coverage of the region is spotty and only spans the last thirty years. Thirty years ago anthropologists had the opportunity to work with Elders whose grandparents', and in some cases parents', memories of customs and life prior to sustained Euroamerican contacts were clear. According to Burch, who began his research in the region in the 1960s, comprehensive and integrated views of the 19th century no longer may be obtained from single persons, but must be painstakingly reconstructed from bits and patches of information obtained from many persons.

The preceding comment should not be taken mean that opportunities for ethnographic research are absent. Rich data pertaining to the last ninety years is available. For example, several families within the region have four living generations

of same-gender adults; comparative generational life histories of families can provide powerful insights into changing values, customs and into changing relations with polities and economies outside the region. Written records of reindeer herding are available from the turn of the century through the 1950s and can be supplemented by personal accounts of living persons who once herded deer. Many people can fully describe the rigors of a subsistence lifestyle before outboard motors, snowmachines, scheduled air traffic, radio and television and jet-delivered groceries, hardware and drygoods.

Two studies that are in preparation should provide excellent ethnoarcheological data as well as baseline data for archeological interpretation. In the early 1980s, NANA commissioned Ernest S. Burch, Jr. to prepare a ten volume encyclopedia for the region. Burch has conducted research on the region for more than thirty years and his unpublished notes and command of the anthropological literature is unequalled. Volume II, Geology, and Volume V, The Inupiaq Nations of Northwest Alaska, have been published. Proposed Volumes VI - X cover ethnographic topics from the early 19th century to the present.

In 1987 ARO-NPS let a three year contract to the University of Alaska Fairbanks to prepare a multiphase ethnographic study of CAKR, KOVA, and NOAT. No final products have been delivered. Apart from a 15,000+ record database documenting placenames, the kinds of products to be delivered and their contents remain negotiable. Hopefully when the project is completed, it will provide a broad framework for organizing the ethnographic data pertinent to the parks, indicate promising research avenues and identify lacunae in the available data to focus future studies.

One of the potentially most productive sources for ethnographic data pertaining to parklands in northwestern Alaska is "Inupiat Ilitqusiat", occasionally referred to as "the Spirit Movement." The purpose of Inupiat Ilitqusiat is cultural revitalization, the celebration of Inupiat Heritage. Funded coordinators for this program are employed by NANA, the Northwest Arctic Borough (NAB), the school district, the regional Indian Reorganization Act (IRA) Council, and Maniilaq. If the NPS works cooperatively with Inupiat Ilitqusiat in identifying and investigating areas of common interest, duplicative efforts will be avoided and resources (personnel and funds) will be used most efficiently.

Discussion

As one of the longest undisturbed and protected river drainages in the world, NOAT will be the focus of a great deal of research in climate and environment over the next decades. Adding an archeological database to this research will greatly enhance the understanding of anthropogenic changes. This area has also seen many changes over the last 10,000 years that the archeological record would highlight. Only a minor part of the preserve has had an inventory done on it so there is a continuing need for comprehensive survey, inventory, and evaluation.

Sitka National Historical Park

Sitka National Monument was established in 1910 in order to protect the site of the decisive battle of the Russian conquest which occurred in 1804, the site of the Tlingit village there, and the graves of a Russian midshipman and six sailors. An Indian River preserve, established in 1890 by Presidential Proclamation, was part of the monument. This preserve contained a number of totem poles, collected by early Territorial Governor Brady from south of Sitka and which remain an important focus of the park. In 1952, President Truman, by proclamation, adjusted the boundaries of the monument. President Nixon signed PL 92-501 in 1972 which added the Russian Bishop's House to the park, changed the status to that of Historical Park and stated that its purpose was "in order to preserve in public ownership for the benefit of the present and future generations of Americans an area which illustrates a part of the early history of the United States by commemorating Czarist Russia's exploration and colonization of Alaska ..."

The park is located in the southeast panhandle of Alaska on the west side of Baranof Island. The park is within the boundary of the city of Sitka on the shore of Sitka Sound, exposed to the waters of the Sound and the Gulf of Alaska. The Indian river flows from the mountains north of town through the park into Jamestown Bay. A small peninsula has formed between the river and the sound on which most of the park, and the Fort site, is located. The park is a natural enclave frequently visited by local townspeople of the fishing and tourist port of Sitka.

The town has a population of 8000, which makes it the largest community on the 1607 square mile Baranof Island and the fifth largest community in Alaska. Sitka is located 95 air miles southwest of Juneau, 590 air miles southeast of Anchorage, and almost 900 air miles north of Seattle. It is a regular stop on the Alaska Marine Highway and receives daily commercial jet service from both the north and south. Sitka has been and continues to thrive as a tourist destination, mostly through the cruise ship industry. Sitka NHP currently has an annual visitation approaching 150,000 visits.

Land Ownership

Sitka NHP encompasses approximately 107 acres, of which 57 acres are of fee simple federal ownership and 49.5 acres are of tidelands which are on 55 year lease from the city of Sitka and the state of the Alaska. None of these acres have been placed in designated Wilderness status.

Environment

The park lies at the mouth of the Indian River, which drains the previously glaciated valley at the foot of Mt. Verstovia, Arrowhead Peak, the Sisters, and Gavan Hill. Deglaciation occurred sometime before 10,000 years ago. Sitka experiences a marine climate, characterized by relatively heavy precipitation (96.6 inches average

annually) and a small temperature range between seasons. Natural wildlife found in the Sitka area include brown bear, deer, mink, otter, bald eagles, migratory waterfowl and numerous other species. Sea mammals, such as harbor seals, sea lions, sea otters, porpoises, and several species of whale live in near shore waters. Anadromous fish species associated with the park area include pink and chum, but not normally coho, salmon. Dolly varden char are present, while king salmon and steelhead trout have been introduced. An intense herring spawn occurs in the spring in the Sitka Sound area and was an important subsistence resource. Resources from the intertidal zone were also undoubtedly an important food source.

Vegetation in the park is typical of forest communities in southeast Alaska. Western hemlock and Sitka spruce make up the overstory with alder, dense ferns and bushes making up the understory. The soft alluvium soil is covered with a thick mat of moss and lichens. The forest in the park is somewhat unique in the Sitka locale in that it has been virtually protected from logging since the park was established in 1910. This is of interest because the historic landscape of 1804 and the rest of the nineteenth century period was undoubtedly quite different from the present forested park.

Archeological Resources

There are no known prehistoric sites in the park. In the general area, the Hidden Falls site, which is located on the opposite side of Baranof Island from Sitka, reveals that there is a long time depth for human occupation of the area. Component I at Hidden Falls reveals a early Holocene prehistoric lithic component characterized by microblades, microcores and unifacial tools and dating to circa 9500 years ago. This component is similar to that of the Ground Hog Bay site which is just outside Glacier Bay National Park. The other two prehistoric components at Hidden Falls, dating from 4600-3200 BP and 3000-1300 years ago, are ground stone/slate assemblages. They show ties to sites on the southern British Columbia coast (St. Mungo, Locarno Beach, and Marpole phases), and Ocean Bay II and Takli Birch phases on Kodiak Island and the Alaska Peninsula to the north.

The park contains a variety of significant cultural resource elements in two separate units. These units are termed the Fort Site unit and the Russian Bishop's House unit. The Fort Site also possesses significant natural resources. The key cultural resource elements contained in this unit are the fort site and battleground of the Battle of Sitka, the park's totem pole collection, the Southeast Alaska Indian Cultural Center, and the Visitor Center exhibits and the park's museum collection.

The fort site is the location where the Kiksadi Tlingit Indians built their log-stockaded fort called "Sish-kee-nu", from which they resisted the Russian attack in October 1804. Sitka had long been the location of a permanent Tlingit village. Today, all that remains aboveground of the fort is its location, a cleared, grassy meadow approximately 150 by 210 feet. Archeological investigations conducted in 1958 appear to have located the subsurface remains of some of the fort's walls. The fort location has been disturbed in the past by US Navy activity in World War II

(Antonson and Hanable 1987) and NPS maintenance activity after that. Adjacent to the fort site is what is believed to be the actual battleground of 1804. The battle's only face-to-face encounter between the Tlingit and the fur-hunters and Aleuts of the Russian-American Company occurred along the park's gravelly beach. The skirmish resulted in the rout of the Russian force, and a withdrawal to their ships, which were anchored offshore. The subsequent Russian siege of the fort forced the withdrawal of the Tlingit from the fort and from the Sitka area. The significance of these locations lies in the crucial impact the battle had on the course of Alaskan history. After the withdrawal from the area by the Tlingit, the Russians went on to build New Archangel (Sitka) as their capitol, and their expansion in Russian America was virtually unchecked.

The Russian Bishop's House unit comprises 1.15 acres of fee simple, easement and private land. It includes the House itself, the historic Old School (circa 1897), and the Priest's Residence/Building 105 (circa 1887), and the surrounding yard and garden area. The Russian Bishop's House was added to the park in 1972. The House was built in 1842 by the Russian-American company to house the Russian Orthodox Bishop of Alaska, Kamchatka and the Kurile Islands. It is the only period structure in the NPS relating to Russia-America, and it is the most intact Russian-era building remaining in North America. The National Park Service has spent 15 years in restoration of the structure. The compliance archeology done as part of that restoration proved significant. The potential for historical archeological resources remains fairly high.

With the exception of the Russian Bishop's House unit, the other significant cultural resources within the park are poorly documented or understood. The archeological excavation conducted at the fort site has been poorly documented and never fully analyzed. Past ground disturbances within the fort site area, including removal of tree stumps, digging pits to treat totem poles, and the placement of historic fill at the site will make future examinations of the locale difficult. The battleground is believed to be adjacent to the fort site, but the exact location is unknown. Past gravel extractions from the beach area within the park may have affected the battleground integrity. No systematic archeological surveys have been conducted within the park. Local and oral histories indicate that the park area was used extensively in the past by native peoples. Although historic records provide evidence for earlier Russian or European structures within the park, they have never been located. Additionally, as the earliest National park Service unit in Alaska, little is known regarding the location and types of earlier park structures such as bridges or trails.

Ethnographic Aspects

Local ethnographic information is quickly disappearing as local Native elders pass away. Many Tlingit in the local community remember experiences or use areas within the park, or have been told stories and legends from their elders that involve

the park. The chronology and traditional use of the park by Native Americans is little known or understood.

When the Russians came to the Sitka area in 1799, they found a favorable anchorage and abundant resources. These resources were also important to the local inhabitants, the Sitka Tlingit, who had long before established a permanent village here. The Sitka Tlingit are members of a culture group that stretches along the coast of southeast Alaska from north of the Queen Charlotte islands on the south to east of Prince William Sound on the north. A few inland groups in the Yukon Territory were aboriginally connected by means of trails over the Chilkat, Chilkoot, and White passes. Besides a common language, the Tlingit shared a distinctive economic and social structure typical of Northwest Coast peoples.

Discussion

Although archeological work in the park dates back many years, no systematic archeological survey of the park has ever been done. Even the primary resources, such as the 1804 Fort Site and battleground, are not necessarily well understood. This is evidenced by current research, which suggests the locations of these areas may be speculative. In addition, Tlingit and early Russian use of the area is little understood. Thus an Archeological Overview and Assessment, as well as archeological identification and evaluation studies need to be prepared in order to evaluate past efforts and identify and assist in future management plans. The Sitka Tribe of Alaska, the U. S. Forest Service and other local groups, organizations and institutions have all had interaction with the park in the past and can be expected to do so in the future, both with SAIP and other park activities and undertakings.

Wrangell-St. Elias National Park and Preserve

On December 1, 1978, by presidential proclamation under the authority granted in the Antiquities Act of 1906, Wrangell-St. Elias National Monument was created. It encompassed almost 11,000,000 acres of land in south Alaska adjacent to the Canadian border. In 1980, in the Alaska National Interest Lands Conservation Act (ANILCA), the monument was expanded and redesignated as Wrangell-St. Elias National Park and Preserve (WRST). WRST is the largest unit of the National Park Service. In Canada, adjacent to and contiguous with WRST is Kluane National Park. The two parks together form the largest area of protected land in the world and it has been designated as a World Heritage Site. (GLBA has also been recently added to the World Heritage Site.)

The implementing language for the 1978 Monument called for preservation of areas with significant geological, ecological, biological, archeological and historic features, among others. The general language of ANILCA echoes the 1978 proclamation. The specific implementing language in ANILCA for Wrangell-St. Elias says that the park and preserve shall be managed to maintain unimpaired the scenic

beauty and quality of high mountain peaks, foothills, glacial systems, lakes, and streams, valleys and coastal landscapes in their natural state; to protect habitat for and populations of, fish and wildlife....;and to provide continued opportunities including reasonable access for mountain climbing, mountaineering and other wilderness recreational activities. Subsistence uses by local residents shall be permitted in the park, where such uses are traditional.

This park and preserve is one of the most accessible in the Alaska Region. The Alaska Highway and the Richardson Highway provide road access to the north and west boundaries of the park while the Glenn Highway provides access from Anchorage. Two rough roads provide access into areas of the park. One, the McCarthy Road (which follows an old railroad bed), runs 60 miles into the southern preserve to the small town of McCarthy and the Kennecott mine and town. The other road, the Nabesna Road, in the northern preserve and 46 miles long, runs to the small village of Nabesna. Access to more remote areas is by small plane and foot. The western boundary roughly follows the Copper River and the eastern boundary is the international border. The far southeastern boundary stretches to the Malaspina Forelands and Yakutat Bay of the Gulf of Alaska.

Land Ownership

Wrangell-St. Elias National Park contains 8,331,000 acres and the Preserve contains 4,856,000 acres (a total of 13.2 million). In both together there are 9,677,000 acres in designated Wilderness status. Even though the percentages of land within the park and preserve that are not within federal ownership or are under application are small compared to the overall acreage, in total the acreage is large. There are 709,00 acres in non-federal ownership and an additional 925,000 acres under application for transfer to the State of Alaska and native ownership. A majority of this land (1,400,000 acres) is held by or applied for by local native corporations. These include Ahtna Regional Corporation, Chugach Alaska Corporation, Chitina Village Corporation, Gakona Village Corporation, Mentasta Lake Village Corporation, Nabesna Native Group Village Corporation, Tazlina Village Corporation, and the Twin Hills Native Group Village Corporation. Included in these lands are 32,608 acres of cemetery/historical [14(h)(1)] site applications and 4000 acres of native allotments. There are also about 15,000 acres of mining lands and small tracts. One of the inholdings is the Kennecott copper mine and town, which is a National Historic Landmark. The extent and range of these various holdings indicate the presence and value of prehistoric, historic and ethnographic resources in this park.

Environment

The principal features found in the park and preserve that initially led to its inclusion in the National Park Service system are those of the natural environment, and include spectacular mountain ranges, glaciers, active volcanoes, and wildlife.

The entire region lies within the Pacific Mountain System, which is a belt of high mountains bordering the Pacific Ocean. The park and preserve contain vast areas of extremely rugged high mountain terrain. Major ranges include the Wrangell, St. Elias, Chugach, Mentasta, and Nutzotin mountains. While separately named, these ranges are not physiographically distinct. In fact, the Mentasta and Nutzotin mountains are actually an extension of the Alaska Range, and they eventually grade into the Kluane Mountains in Canada. The Wrangell and St. Elias mountains form one continuous range running into Canada, and the Chugach Mountains merge with the St. Elias Mountains in the southeastern part of the unit. These mountains together form a rugged chain along the north coast of the Gulf of Alaska. They trap much of the moisture-laden ocean air, which causes heavy precipitation and heavy glaciation. The Wrangell Mountains have a large ice cap that feeds many large valley glaciers, and a group of volcanoes rise abruptly from the Copper River lowlands. Six volcanoes at altitudes from 12,000 to 16,500 feet form the greater part of this range. Recent eruptions include late prehistoric eruptions about 50 AD, 400 AD and an eruption of Mt Wrangell in 1930. As part of the Ring of Fire that encircles the Pacific Ocean, the area is tectonically very active.

WRST has been, and still is, affected by the glaciations of the Pleistocene and Holocene. The Wisconsin glacial cycle began by 37,000 years ago and continued to approximately 8000-12,000 years ago. It is important to note that glacial margin habitats notwithstanding, even as recently as 8000 years ago most of the park land was glaciated (an exception possibly would have been the coastal areas). By approximately 6000 BP, the glacial ice had receded nearly to present-day distributions, and modern plant and animal communities had colonized the area. Glacial topography and climatic effects are still important factors in this area.

WRST contains three climatic zones - continental, marine, and transitional. North of the Wrangell Mountains the climate is continental, also known as "cold snow forest." As in much of Interior Alaska, this zone is relatively dry, hot in summer and extremely cold in winter. The coastal area is within the marine, or temperate zone, which has moderate extremes of temperature and heavy precipitation. The transitional zone lies along the southern flank of the Wrangell Mountains, encompassing the Chitina to McCarthy area. Extremes of temperature and precipitation fall between those of the continental and marine climatic zones.

The wide range of elevations, climates, and niches in the 13.2 million acre park and preserve results in an equally wide range of growing conditions and the resultant vegetation communities and animal populations. The unit contains nearly all of the major vegetation types found in southcentral, southeastern and interior Alaska. Because the area of the park and preserve includes portions of five mountain ranges, much of the surface terrain is composed of steep, rocky slopes, talus and ice. Loamy soils occur on lower slopes, but in many cases these are poorly drained and boggy, or drier and gravelly. Well-developed, loamy, alluvial soils occur along streams or in valleys. With the exception of the coast, permafrost is pervasive throughout the area.

In general, four major vegetation communities are present in the park and preserve. Coastal Spruce-Hemlock Forest is present along the shoreline from sea-

level to the tree line. The Closed Spruce-Hardwood Forest is more widespread and can be subdivided to reflect dominant species. Much of this also fits into the category of boreal forest. In the higher elevations, alpine tundra is common. At lower treeless areas can be found wet or moist tundra which is dominated by sedges and cottongrass. As one of the largest protected ecosystems in North America, WRST supports populations of at least 32 species of mammals, 127 species of birds, 16 species of fish and 1 amphibian. The Copper River and its tributaries support large salmon runs which were and are important subsistence resources for local residents.

Archeological Resources

WRST contains an important grouping of Athabaskan prehistoric and historic archeological sites. The sites include numerous villages, camps, and hunting sites of these people, as well as the remains of other cultural groups such as the Tlingit and Eyak Indians. Important sites include Taral, Cross Creek, Batzulnetas, and the "TLXYK TWGD" camp. In addition to aboriginal sites, the park and preserve also contain historic ruins and structures representing the periods of exploration, mining, transportation. The primary values of the cultural sites in WRST lie in the contribution they can make to our understanding of human interaction with the WRST environs over time, aboriginal culture change and adaptation, the results of culture contact between native and Euroamerican groups, and the development of Alaska after contact. The sites represent a continuum spanning from the prehistoric period to the historic period, including recent times.

Available archeological data, historical and professional accounts attest to the fact that all of the major drainages within and bordering the park and preserve are rich in archeological values, and the site potential of upland areas away from the drainages is also good. In actuality, very little of the park and preserve has seen the type of basic work needed to locate and evaluate archeological resources. Recorded prehistoric and ethnographic sites in WRST now number ten prehistoric sites and forty-three ethnographic sites. Historic sites and structures, mostly associated with mining, which, of course, have associated historical archeological values, number over 100. These sites have been inventoried by the Cultural Resources Mining Inventory and Monitoring Project.

What is known of the cultural chronology in WRST is that it mirrors facets of Western Subarctic, Interior Alaska, and northern Northwest Coast prehistory. Early remains found in Alaska represent occupations by more than one ancient culture for the period 8000-15,000 years ago. Although it is not yet clear which ancestral groups began the lineages that led to the historic Athabaskan and northern Northwest Coast inhabitants, it is likely that these antecedent strands cross-cut and intertwined with each other over the landscape over time.

Early sites in the Interior, including Healy Lake, Dry Creek and Swan Point give us dates of around 11,000 BP. Various called the Northern Paleoindian tradition, the Nenana Complex, or the Northern Cordilleran tradition, the exact

relationship between these archeological components is blurred by the "sands of time." In general, they seem to represent groups of "Amerind" (non-Eskimo) people related to the "fluted point" cultures of Clovis, Folsom, Plano and Agate Basin that flourished in North America south of the great ice sheets about 11,000 BP. A few researchers see the ancestral Athabaskan strand in these cultures.

The next cultural entity that can be clearly distinguished in the archeological records of Alaska is the people of the Paleoarctic tradition. Paleoarctic occupations in Alaska cluster around 10,000 BP time range. Local sites that appear to contain Paleoarctic, or the related Paleomarine, component include Ground Hog Bay on the Gulf of Alaska coast, Hidden Falls on Baranof Island, and Chuck Lake on Heceta Island. Dry Creek in the Nenana Valley and Aishihik Lake in the southwest Yukon also have assemblages attributable to the Paleoarctic. Interestingly enough, microblade technology, a hallmark of the Paleoarctic tradition, persisted in the WRST area longer than in the arctic. Some occurrences of microblades have been dated to as late as 2200 BP on the northern Northwest Coast and in nearby inland areas. Microblade technology remained extant until 2000 years ago in such areas as southwest MacKenzie River in western Canada. This phenomenon, sometimes called the Northwest Microblade tradition, seems to have microblades mixed in an lithic assemblage that also includes lanceolate and side-notched projectile points.

However, to add to the confusion, another widespread archeological tradition appeared across Alaska around 6000 BP. Characterized by side-notched projectile points, large unifacially flaked knives and unifacially flaked endscrapers, the Northern Archaic tradition seems to have its antecedents in the Archaic cultures of the boreal forests south and east of Alaska instead of Siberia, whether by migration or diffusion is not known. Assemblages that contain side-notched points are often found with microblades as well. This has led to some controversy over exactly what and who does the Northern Archaic tradition represent, how it arrived in Alaska, and what eventually happened to the bearers of this tradition. This is a significant issue for WRST because several scholars trace the origins of the Athabaskans to this time period and this archeological tradition. A possible site of this tradition has been reported at Ptarmigan Lake and dated ~ 4500 BP.

The definitive development of the Northern Athabaskan culture can be traced back to about 1500 BP. From then to contact with Europeans in southern Alaska was a time when ancestors of historic Athabaskan groups inhabited the region and the final development of their traditional cultures occurred. The lack of definitive sites has made it difficult to push this tradition further back than 1500 BP with the *Klo-Kut* site, on the middle Porcupine River drainage north of the park and preserve, providing the longest unbroken record of an Athabaskan cultural pattern. Numerous sites representing the later Athabaskan tradition, dating to about 800 BP, have been documented along the western boundary of the park and preserve. One of the earliest sites, from around 700 BP is GUL-077, which consists of cache pits and an associated late winter camp situated along the lower Gulkana River. Excavations at the site yielded artifacts made from native copper, bone and antler, and lithics. Major excavations have been conducted at Dakah De'nin's Village, a site situated along the

Copper River near Chitina, dated from the protohistoric period. Directly across the river, at Taral, investigations have revealed an historic period occupation.

A better overall view, perhaps, can be seen by reviewing the archeological cultural sequence for the Aishihik-Kluane area of the southwest Yukon, adjacent to the park and preserve. Like other archeological work in the area, conclusions are based on a small sample which needs much more investigations to prove or disprove. The sequence is divided into four cultural phases:

- the Little Arm phase is the earliest, approximately 8000-4500 years in age
- the Taye Lake phase designates the advent of the Northern Archaic tradition in the area around 4500 BP and seems to persist until about 1600 years ago.
- the Aishihik phase, dating from 1600 to ca. 150 years ago, represents late prehistoric culture prior to the introduction of European goods.
- the Bennett Lake phase, dates from the nineteenth century to the early twentieth , and designates protohistoric native Athabaskan culture (Ahtna and Southern Tutchone)

The major trend identified in the Aishihik-Kluane sequence is the long, ca. 3500 year, persistence of the Little Arm phase that was abruptly replaced by the appearance of Taye Lake technology, which then persisted for thousands of years. Whether the Taye Lake phase represents the advent of Athabaskan cultural antecedents is a major research question for this region.

The Malaspina Forelands and Icy Bay area of the park and preserve falls within the culture area of the northern Northwest Coast. Historically the territory of the Tlingit and Eyak native groups, the prehistory of this area shows distinctive differences from that of the Athabaskan Interior. The oldest archeological complexes, from the Ground Hog Bay site and the Hidden Falls site, both of which are just south of the Malaspina Forelands, have been assigned to the Paleomarine tradition. This tradition, dating from around 8000 years ago, is a coastal correlate of the Paleoarctic tradition. Some researchers see a Transitional Period from around 6500-5000 years age during which the technological changes occurred that formed the basis for early Northwest Coast culture, but this hypothesis has not yet been well substantiated.

Davis (1990) places the advent of developing Northwest Coast culture at 4600 BP, as it is represented by the Component II materials at Hidden Falls. Davis also defines a Middle Phase with a temporal span of 3000-1300 years ago in which the use of coastal resources continued and intensified. The Late Phase from 1300 BP up to contact time showed changes in the development of larger structures, the introduction of native copper culture tools, the appearance of iron in a few tools, new harpoon forms, and stone bowls and lamps. These remains indicate increased population and complex social organization.

The type of assemblage found in the Late Phase component of Hidden Falls is very consistent with the historic Eyak people who occupied the coast to the west of Icy Bay. Prior to historic contact the Eyak, whose language seems to be related to that of the Haida further south on the Northwest Coast, probably also occupied areas

to the south and east, adjacent to the Haida. Sometime between 500-1500 years ago, the Tlingit expanded into this area, wedging between the Haida and the Eyak, displacing them from the Yakutat Bay area.

Historic Aspects

Historic sites with archeological aspects to them are common in WRST. The Copper River, the only water route across the Chugach mountains in southcentral Alaska, has been a major access corridor to the Copper River basin and the Wrangell Mountains since prehistoric times. Coastal and Interior aboriginal groups, apparently engaged in at least limited trade. Copper had served as a Native trade item for at least 1400 years prior to European contact. Copper implements were found along the coast by early explorers beginning with Bering in 1741. An early awareness of the source of the copper was recorded in the English name for the river. History records few penetrations up the Copper River by Russian and American traders and explorers in the first three quarters of the 19th century, although a Russian trader, Klimowski, established a short-lived trading post near present-day Chitina about 1819. In 1885, Lieutenant Henry Allen ascended the river and explored the upper Copper River area before crossing the Alaska Range to the Tanana River drainage. He produced the first published map of the Copper River basin and named Mount Drum, Mount Sanford, and Mount Blackburn. Allen also explored up the Chitina River and named the Chitistone River.

As a result of the 1898 Gold Rush to the Yukon, exploration up the Copper River and its tributaries began in 1898 with a large influx of prospectors and the Ambercrombie expedition of 1899. By 1900 the major copper deposits of Kennecott had been located. By 1911, railroad tracks of the Copper River and Northwestern had reached from Cordova to the mines above McCarthy. The richest copper lode in the world was mined until 1938 when the ore was pretty much gone. By then, the access provided by the railroad (and the railroad bed after the tracks were salvaged) had opened up the area to gold mining, homesteading, fur trapping and hunting activities. Over 725 mining claims or abandoned mining areas exist in WRST today. Most of these areas have archeological potential as historical sites.

Ethnographic Aspects

Approximately 115 Athabaskan sites have been ethnographically documented through oral histories within the park and preserve. These sites include winter villages, hunting and fishing camps, trails, house sites, food caches, caribou fences, and cemetery/historic sites. Settlements have been investigated archeologically at Bazulnetas, just south of the Nabesna road, and at Taral, on the east bank of the Copper River. De Laguna (1972) has done major ethnographic and archeological investigations in the Tlingit area around Yakutat Bay.

Prior to, and into, the 20th century three major cultural groups lived in the area of Wrangell-St. Elias National Park and Preserve. Tlingit Indians, occupying the

coast from the mouth of the Alsek River northwest to Yakataga, including Yakutat Bay and Icy Bay, were probably the most numerous. Rich marine and coastal resources allowed development of a complex ranked social organization and art style, part of the Northwest Coast cultural area. Eyak Indians occupied the area around the Copper River delta. It is quite probable that they had been pushed off the land around Yakutat Bay and Icy Bay in the late prehistoric time period by the Tlingit.

The interior areas of the park and preserve were occupied by Athabaskan Indians, so grouped because their languages were part of that large language family. The largest group was the Ahtna Indians, represented in the present day by the Ahtna Corporation. They occupied an inland territory that extended from the headwaters of the Susitna and Matanuska rivers eastward to the present-day Alaska-Canada border. The larger group can be divided into five regional bands based on linguistic differences and further split into local bands by geographic locations. Another Athabaskan group, the Tanana, traditionally occupied the area to the north of the Ahtna territory, roughly corresponding to the area of the Tanana River drainage. Only the southeastern part of the traditional Tanana territory lies within WRST. Several bands used this area, including the Nabesna (Northway), Tetlin, and Scottie Creek bands.

Neighboring groups included the Southern Tutchone, an Athabaskan group that lived in the Kluane Lake area north and east of the park and preserve. The White River would have been a travel route to and from the park and preserve area for these and other people. North and west, in the Cordova area, lived several groups of Chugach Eskimos. This group of Pacific Eskimos were also expanding in late prehistoric and protohistoric times. With the Copper River as a major highway to the interior and for trade, there was probably contact between all these groups, with the Eyak and the Ahtna as the middlemen of the trade network. Since there was also conflict between these groups, the extent of trade and cultural exchange between them is difficult to gauge - thus the need for ethnographic and archeological research.

Discussion

WRST remains the largest unit of the National Park Service and one of the least known archeologically. What is known indicates that there is good potential for the occurrence of prehistoric, historic, and ethnographic sites. The unit has road access and a large number of inholdings which will lead to possible impacts on whatever sites that do exist. The need for a long-term inventory and evaluation program is obvious and should be addressed. Environmental stratification would eliminate millions of acres from consideration for survey due to topographic factors, leaving a relatively possible target of several million acres. By dividing the park and preserve into segments and programming the inventory along those lines and setting reasonable goals for each stage of the program, a long-term program would be affordable and logistically possible.

This area presents numerous opportunities for cooperative research. Kluane National Park, in Canada and native and state land are all adjacent to the park and preserve.

Yukon-Charley Rivers National Preserve

Yukon-Charley Rivers National Preserve (YUCH) is situated in east-central Alaska and has as its eastern boundary the United States/Canada international border. The preserve extends westward from the Canadian border into interior Alaska to the end of the Yukon-Tanana Highlands. On the north is the Porcupine River and the Alaska Highway is the southern border. It was created as a preserve in the Alaska National Interest Lands Conservation Act of 1980. The implementing language states that it "shall be managed for the following purposes, among others: To maintain the environmental integrity of the entire Charley River basin, including streams, lakes, and other natural features, in its undeveloped natural condition for public benefit and scientific study; to protect habitat for, and populations of, fish and wildlife, including but not limited to the peregrine falcons and other raptorial birds, caribou, moose, Dall sheep, grizzly bears, and wolves; and in a manner consistent with the foregoing, to protect and interpret historical sites and events associated with the gold rush on the Yukon river and the geological and paleontological history and cultural prehistory of the area." As this language demonstrates, prehistoric and historical archaeological resources are significant in the preserve and require inventory, evaluation, protection, and interpretation.

This extensive area is readily accessible by boat and air. The Taylor Highway terminates in Eagle, a community of about 165 peoples, 12 river miles south of the preserve boundary. The Steese Highway terminates 161 miles east of Fairbanks at Circle, a community of about 80 people, 14 river miles north of the preserve.

Land Ownership

YUCH encompasses approximately 2,527,000 acres, of which about 2,148,000 acres are federal land; most of the nonfederal land is held by Doyon Ltd., the native regional corporation. Land is also held by the Eagle Village corporation and in native allotments. There are about 4000 acres in mining claims and private lands.

Environment

YUCH encompasses two nationally significant rivers. It contains a portion of the upper Yukon River valley, an area rich in historic, biotic, and geologic features, and the entire Charley river drainage, a National Wild and Scenic River. The Yukon river flows southeast-to-northwest through the preserve between valley walls that range from steep bluffs along high, upland benches to terraces representative of several stages of river downcutting. The preserve is within the Northern Plateau

physiographic province. This province is comprised of a large wedge of intricately dissected uplands and alluvium-covered valleys. Upland areas in the southern portion of the preserve grade into a lowland belt. Major tributaries of the Yukon River include the Charley, Kandik, Seventymile, Tatonduk, and Nation rivers.

The Charley River, draining an area south of the Yukon, is the largest tributary within the preserve. For most of its length it is characterized by rugged uplands, becoming more rolling terrain near its confluence with the Yukon. Topographic relief is varied within the preserve, ranging from 600 feet above sea level along the western boundary to more than 6000 feet in the Charley River headwaters area.

The area was subject to at least two major glacial advances during the Pleistocene - the Illinoian and the less extensive Wisconsin. During both glaciations coverage was confined mainly to upper valley channels and cirque basins, leaving many areas ice-free. Several researchers have suggested that these non-glaciated intermontane areas (refugia) were important for early human immigrant occupation, in that they afforded favorable habitat for many of the economically important large terrestrial mammals such as the mammoth, bison, elk, and the more familiar bear, moose, sheep and caribou. During the Holocene there were several climatic fluctuations ranging from the Hypsithermal to the Little Ice Age that certainly affected life in the preserve area.

Pollen profiles from the middle Tanana Valley suggest that 16,000 years ago the vegetation in this area was principally a tundra-steppe biome characterized by grasses, sedges and *Artemisia*. By 14,000 BP the climate had begun to change from cool and dry to moist and warmer. Spruce first appeared around 11,000 BP in lowland settings with forests gradually expanding into the uplands. A modern, boreal coniferous/deciduous forest was present by 9000 BP. The present day preserve is dominated by taiga (boreal) forest consisting of white and black spruce, and deciduous trees such as birch, cottonwood, poplar, and alder. In some areas there is also high brush, muskeg bog, or alpine tundra. A variety of fauna, large and small mammals and birds, are present. Such animals as moose, caribou, grizzly, black bear, sheep, beaver and muskrat have inhabited the area since the end of the Pleistocene. Additionally, there have been annual summer runs of salmon in the middle Yukon River (king, silver and chum) that would have been major sources of food to local inhabitants.

Archeological Resources

Despite several survey projects in recent years, the archeological resources of the preserve are not well known. There are at least 139 recorded sites in YUCH. There are 90 recorded prehistoric sites in the preserve and numerous other known prehistoric resources that have been reported but not documented. However, enough is known that the archeological potential of the preserve, both for early and late sites, can be judged as very high. In addition, the potential for historical archeology is also very high. Because of the possible significance of the archeological resources in the preserve, they were specifically addressed in the implementing language of ANILCA.

A brief summary of the regional chronology provides context for the purposes of this document. YUCH is within the Interior cultural area for NPS properties in Alaska. Well-documented sites appear in the archeological record just prior to 11,000 BP. Dry Creek, Component I, exhibits a flake and core technology dated to about 11,100 BP and the Mesa Site in the central Brooks Range has been reevaluated recently as a lanceolate point site dating to 11,500 BP. Other early assemblages, such as the lower levels of Onion Portage on the Kobuk River and Healy Lake just outside of DENA, exhibit a microblade and microcore technology which has been defined as the American Paleoarctic tradition dating to 8000-10000 years ago. Subsumed under this term is the Denali complex of Interior Alaska, which includes the Campus and Donnelly Ridge sites. It has been suggested that fluted and lanceolate points appear in the Arctic prior to 6000 BP, as Paleoindian technology diffused or migrated northward. Dating is insecure, however, and these artifacts have been placed as early as 11,500 BP and as recently as 4000 BP. The earlier tradition has been named the Northern Paleoindian tradition and the later one the Northern Plano Tradition. The Foster-Keith Site in YUCH has possible components from the Paleoindian and Paleoarctic traditions and deserves more attention.

Northern Archaic assemblages provide evidence of a boreal adaptation and date to between 6000 to 4000 BP. Side-notched projectile points, sometimes occurring in association with a core and microblade technology, are the hallmark of this time period. Various interpretations of this phenomenon have been put forward. The side-notched points are similar to that of the Archaic in the boreal forests south and east of the Arctic and this technology either diffused northward or was carried by migrating Archaic peoples.

About 6000 years ago, a new technology, representing a new group of people, is discernable in the archeological record. The ASTt people became the first pan-Arctic culture, spreading south as far as the Alaska Peninsula and east as far as Greenland and Hudson's Bay. However, in Interior Alaska in this time period, notched points and a core and blade industry continue to be extant and associated in many archeological assemblages. The microblade industry of the Interior has been grouped into a Denali Complex, which originally was equated with the Paleoarctic tradition. Recent research has extended the dates of the Denali Complex to as late as 3000 BP, which throws the interpretation and integrity of this cultural construct into doubt.

Following this time period it becomes possible to discern in the archeological record the Athabaskan tradition, which can be definitely traced from 1500 BP to historic times. Due to the lack of a clear cut archeological record (from a stratified site), researchers are not in agreement as to how far back into the past the people of the Athabaskan tradition, considered the direct ancestors of the Athabaskan peoples of modern times, can be traced. Some sources have interpreted the archeological record here as showing *in situ* cultural development over the long-term and they consider the development of the recognizable Athabaskan cultural pattern to have begun with the major environmental and adaptive changes that preceded the Northern Archaic tradition.

In contrast, other researchers suggest that two distinct populations have inhabited the Interior through time. The earlier people, or "Amerinds", are thought to be the ancestral group for the Paleoindian cultures. The recognizable Athabaskan cultures are thought to represent a much later migration. Another theoretical thread is one that links the effects of a major volcanic eruption in the St. Elias Range (represented archeologically as the White River ash) at about 1890 BP with the displacement of groups around Kluane and Aishihik lakes, movement to the northwest and the appearance in the Brooks Range with Kavik points and tchi-thos and other generalized implements associated with the Athabaskan tradition. On linguistic evidence, Krauss (1973) has suggested that 3000 years may have elapsed since the numerous modern Athabaskan languages diverged from a common language present in Alaska.

The *Klo-Kut* site, in the middle Porcupine River drainage near YUCH, provides the longest unbroken prehistoric record of Athabaskan occupation. The well-stratified context and preserved faunal remains reveal 1500 years of continuous occupation that culminates in a well-documented historic Athabaskan village component. Morlan characterizes the inhabitants of *Klo-Kut* as primarily caribou hunters, oriented primarily toward upland, treeless areas, and hypothesizes a similar lifeway for other northern Athabaskans during the late prehistoric period. Another site, EAG-139, which is located on the left bank of the Yukon River between Eagle and Eagle Village, represented a Han Athabaskan village that was occupied between 1880 and 1890 AD. Based on oral history and archeological data from the site, it appears that the Han families there focussed on hunting large and small game, especially salmon and caribou.

Historical Aspects

Direct contact with Euroamericans was made in 1847 with the establishment of Fort Yukon. The Han had been in indirect contact with the Russians to the west and the Hudson's Bay company to the east prior to that. By 1873 a trader from Fort Yukon named Moses Mercier founded a trading post on Belle Island, opposite what was to become Eagle City. During the 1880's and 1890's, various trading outposts and settlements were founded in the territory of the Han and acculturative pressures on them became very strong.

Gold had been known to be present in the Yukon Basin since the 1870's, even though the first major strike, on the Fortymile, did not occur until 1886. During the latter half of the 19th century, prospectors and miners came in ever-increasing numbers. Circle City was founded as a mining camp in 1893. Other claims resulted in settlements at Seventymile in 1888 and at Mission Creek (Eagle) in 1895. In 1897 gold was discovered on the Klondike River in Canada and the "Klondike Stampede" was on. Literally tens of thousands of people poured into Han territory. Dawson, Eagle, and Circle became boomtowns. Between these major nodes, smaller settlements and outposts - Nation, Miller's Camp, Biederman's, Slaven Cabin, Star City, and Woodchopper Roadhouse -- became hubs of activity. The Yukon River

became the highway, connecting all of these places by riverboat. The effects on the region and its inhabitants were irreversible.

YUCH contains a rich, varied record of significant historic sites. However, much of the historic record has not been verified in the field, especially as to location, extent, condition, time period, and status. The methods and theory of historical archeology would be major components of such an inventory and evaluation. It should be noted that the historic resources (and their archeological components) of YUCH are important not just for the gold rush story but for other themes as well. These include frontiers (e.g. Indian, trading, mining, military and missionary), the fur trade, aboriginal acculturation, 20th century mining and trapping, English-Russian-American and Canadian relationships, and international activities such as the telegraph, trails, steamboats and mail delivery.

Ethnographic Aspects

Most of the preserve area was inhabited by the Han group of Athabaskan Indians. Only one major ethnographic research effort, Osgood's 1932 work (see Griffin 1990), was done on this group. Acculturative changes had already had a great effect on the traditional culture and way of life. Han traditional accounts and oral history, historic narratives, and archeology are the main tools left to elucidate the late prehistoric and protohistoric life of the Han. The northern fringe of the preserve was inhabited by another Athabaskan group, the Kutchakuchin, who spoke another Athabaskan language. The same need for research holds for that group as well.

There were three Han settlements, corresponding to three local bands. Farthest upriver was Nuklato, near the mouth of the Klondike, opposite Fort Reliance. A middle band was located at Johnny's Village (Klat-ol-klin), or David's Camp, which are associated with present-day Eagle Village. The third was Charley's Village (Tadush), located either at the mouth of, or across from the confluence with the Kandik. These "villages" served as base camps from which various subsistence efforts were launched. Families were quite mobile and boundaries shifted frequently. In general, the Han were opportunistic hunters and gatherers with a river-oriented winter settlement pattern (due to the presence of salmon and the use of rivers for transport). Well before European contact intergroup trade networks that reached from Siberia to Canada supplied the Athabaskan economy with a wide variety of resources that were not otherwise available. The Han were skilled traders, often acting as middlemen for other groups. These same trade networks eventually became the routes through which European trade goods first made their way into the Interior. First actual contact was made sometime around 1843.

Since Osgood's observations were made after nearly 100 years of intensive European contact that had significantly altered traditional patterns, it is possible that the standard view of Han culture as exclusively showing large communal population centers along the main rivers was biased. Until much more archeological inventory is accomplished, with the view of examining the late prehistoric and protohistoric record,

this view will have to be accepted but treated with caution in interpreting past cultures in this area.

Discussion

The cultural resources of YUCH are rich and varied, from sites such as the Foster-Keith archeological site, the historic archeological remains, and the ethnographic record. A comprehensive program of resources research, stewardship, and interpretation should be implemented. Further inventory and evaluation are necessary components of such a program.

ARCHEOLOGICAL INVENTORY AND SITE RECORDS

The status of archeological inventory in Alaska's National Parks and Preserves is poor. In absolute terms, fewer than 20 sites have been listed with complete documentation on the National Register of Historic Places. About 2000 known sites have not been evaluated for National Register status and there is no complete set of historical base maps showing site locations. In fact, there is a critical need for the establishment and management of archeological databases. This should be accomplished at the regional level, where data on all recorded sites in the entire region are stored, and at the park level, where data on all sites in that park are stored.

At present, there is no data location with a complete set of site files, maps, field notes, evaluations, and archival materials. Very little of what does exist has been computerized. In any major survey and inventory effort long-term data storage and retrieval is of primary importance. If the data are not retrievable and useable 10 or 20 years down the line then much of the inventory has been wasted. As King (1978:97) puts it:

As archeological surveys proliferate, the need grows not only to ensure that they are conducted according to high standards, but to maintain and keep careful account of the data they produce. These data include information on archeological sites and other historic properties as well as other types of positive information. They also include negative data. We need to know which areas have been surveyed with negative results so that work will not be duplicated...

The Alaska state site files, the Alaska Heritage Resources Survey (AHRs), are not adequate either. They are not up-to-date and many sites from NPS surveys have not been entered as yet. The establishment and maintenance of the ASMIS system would be a good start (if a consistent field data collection and recordation system were in place), but in and of itself would not fulfill the need for long-term data storage and retrieval system since it will only cover management oriented site data.

Unlike many of the other regions of the National Park Service, Alaska Region does not have an archeological or cultural resource center with a mission to manage and maintain an archeological site information database. The Regional Office has been fulfilling that role on an *ad hoc* basis without any dedicated base funding or permanent positions. A permanent archeological site data storage, management and retrieval system needs to be established for the parks in Alaska. This must include funding, staff and facilities to store all necessary site records, including maps, photographs, site forms, field notes, etc., as well as a computerized database that meets both management and research needs. Original records would be stored in the relevant park facility whenever adequate facilities, funding and staff made this possible.

Although it makes sense for every park to have a complete set of archeological survey, excavation and site records for that park, it makes little sense for every park to have a complete set of such records for all the parks in the region. Either a centralized archeological site data storage, management and retrieval system for the entire region needs to be established in one location, or there needs to be a number of area centers that serve clusters of parks. The system could also be established in one park, if the necessary funding, personnel and facilities were dedicated to this purpose and it was clearly understood that the system was to serve all the park units in Alaska.

An area center system could also be established by designating one park within a cluster to be responsible for the database system for all the parks within that cluster. Adequate funding and staffing would have to accompany any such designation. One possible scheme for these clusters is suggested in Table 2. It is beyond the scope of this plan to decide this issue, but it is important to understand any regional archeological inventory program that is implemented will generate tremendous amounts of data that will need to be stored, managed and retrievable. This fact must be taken into account when decisions about establishing a database system are being made.

Additionally, the data generated by different surveys has to be comparable. In other words, across projects, as personnel changes, as survey objectives shift, and as knowledge accumulates, comparability must be maintained for such things as definitions of what is a site, particular artifacts and types, site types, levels of survey, mapping standards, field note standards, report standards, including National Register documentation and AHRs and ASMIS site forms, etc. The Regional Archeologist, in consultation with his staff and the archeologists in the parks, will establish minimal standards that should be met by all archeological work undertaken in the region and will make certain archeological work undertaken by Regional Office staff, under contract with the Regional Office, or conducted under permit issued by the Regional Office meets those standards. Archeologists in the parks should do the same for all archeological work undertaken by or for them.

As the archeological inventory program grows, both in the region in general and in the parks in particular, we must be careful not to stretch our staff and equipment resources too thin. Fielding full-fledged, professional, archeological survey teams takes considerable time, effort and money. Given present staffing and budget levels a single cultural resource management specialist in a park cannot be expected to meet all the necessary requirements of compliance, resources management and research programs. Projects developed and funded under SAIP must include adequate staffing to carry them out. In addition, mechanisms other than simply hiring in-house staff in each park that has a funded project must be considered in conducting inventory projects. Cooperation and sharing of personnel and equipment between parks and the Regional Office and between parks themselves (as in the cluster concept) should be an integral part of this program, especially for multi-park, multi-year projects. Contracts, Interagency Agreements, Cooperative Agreements

and other mechanisms for involving other agencies, institutions and individuals in the program should also be seriously considered.

The amount of NPS land in Alaska that has not been surveyed, inventoried and evaluated for its archeological resources is rather high in terms of percentages and is astronomical in terms of absolute acreage, as illustrated in Table 9. When reviewing the figures in Table 9 it is important to keep in mind that the Alaska NPS areas encompass approximately 83,000 square miles of land. Although reconnaissance surveys have been conducted in BELA, GAAR, CAKR, and YUCH, the large acreage involved and the extremely limited amount of prior archeological work conducted in the Alaska park areas makes it difficult to obtain adequate levels of survey. Another factor in the equation is the tremendous effort that is required to perform archeological surveys in park units that can only be reached by fixed-wing aircraft, helicopter, or boat. The very short field season is another factor (mid-May to mid-September is the maximum field season and June to August is usually a more realistic field season). Site visibility is highly variable and a thick vegetative cover is often present.

On the other hand, much of the vast acreage in Alaska NPS units has extremely low potential for the presence of sites. Topographic features such as high mountains, volcanoes, glaciers, and very steep terrain all limit the survey universe and should allow environmental stratification that will provide for a realistic, structured inventory pattern.

Table 9

PORTION OF PARKS THAT HAVE NOT BEEN ARCHEOLOGICALLY SURVEYED.

<u>Park</u>	<u>% Not Surveyed</u>	<u>Acreage Not Surveyed</u>
ALAG	100	24,050
ANIA	100	602,800
BELA	85	2,357,150
CAKR	90	593,850
DENA	95	5,726,700
GAAR	85	7,201,650
GLBA	90	2,954,850
KATM	95	3,885,500
KEJF	90	602,600
KLGO	60	7,900
KOVA	99	1,732,900
LACL	99	4,003,700
NOAT	95	6,245,750
SITK	95	105
WRST	99	13,056,450
YUCH	85	<u>2,145,000</u>
TOTAL		51,151,969

Tables 10 and 11 show the number of acres that have been recorded as sites in the Alaska NPS units and a comparison of sites acreage within parks and in the immediately adjacent areas. Table 11 also indicates the opportunities and need for cooperative research with adjacent land owners and managers.

Table 12 shows the number of sites recorded by year in Alaska NPS units and Table 13 shows the Alaska Region properties that have been recorded on the National Register of Historic Places.

Tables 14 and 15 shows the results of the Cultural Resources Mining and Monitoring program. This program was a major survey of the historic mining properties in Alaska NPS units. The results provide a good glimpse of the need for historical archeology in these units.

Table 10

SITE ACREAGE BY PARK *- BROKEN DOWN BY SITE CATEGORY

Parkname	Prehistoric	Prehistoric/ Historic	Prehistoric/ Protohistoric	Protohistoric	Historic	Historic/ Modern	Prehistoric/ Modern	Total
ANIA		2			1			3
BELA	973	70	3	1	5015			6062
CAKR	2	154						156
DENA	62	1			143			206
GAAR	648	112		1	180	1	1	943
GLBA	2				25			27
KATM	2633	450			21			3104
KEFJ	7	1			21			29
KLGO					13			13
KOVA	5	1			1			7
LACL	9	362			23			394
NOAT	74	29				1		104
SITK		55			4			59
WRST	5				277			282
YUCH	141	2			122			265
TOTALS	4,561	1,239	3	2	5,846	2	1	11,654

* includes site acreage located within the Park boundaries and listed on the AHRS database. Any acreage recorded as <1.00 is rounded to 1.00.

Table 11

**COMPARISONS OF SITE NUMBERS AND ACRES WITHIN PARK BOUNDARIES*
AND IMMEDIATELY ADJACENT AREAS**

Parkname	Total number of sites within Park boundary and immediate surrounding area	Total site acreage within Park boundary and immediate surrounding area	Total number of sites recorded within Park boundary	Total site acreage within Park boundary	Total number of sites identified outside of Park boundary	Total site acreage identified outside of Park boundary
ANIA	6	7	1	3	5	4
BELA	296	6345	238	6062	58	283
CAKR	210	1042	160	156	50	886
DENA	295	471	143	206	152	265
GAAR	925	2129	772	943	153	1186
GLBA	80	139	52	27	28	112
KATM	107	3111	96	3104	11	7
KEFJ	172	4955	32	29	140	4926
KLGO	37	45	22	13	15	32
KOVA	32	33	6	7	26	26
LACL	92	619	8	394	84	225
NOAT	475	866	105	104	370	762
SITK	5	59	5	59	0	0
WRST	408	8796	166	282	242	8514
YUCH	206	6724	139	265	67	6459
TOTALS	3,346	35,341	1,945	11,654	1,401	23687

* includes site acreage located within the Park boundaries and listed on the AHRS database.
Any acreage recorded as <1.00 is rounded to 1.

Table 12

TOTAL NUMBER OF SITES RECORDED IN PARKS BY YEAR

	Pre-1986	1986	1987	1988	1989	1990	1991	1992	1993	Total
ANIA					1					1
BELA	94	138	1		3		2		26	264
CAKR	4	154	2						2	162
DENA	30	34	31	21	14	3	4	6	1	144
GAAR	659	8	1	79	18			7	5	777
GLBA	50	1						1		52
KATM	54			1	22	1	18		4	100
KEFJ	5			5	16		6		11	43
KLGO	13	7		1	1				14	36
KOVA	6								16	22
LACL	6				2				3	11
NOAT	103						2		353	458
SITK	2			3						5
WRST	34	42	31	21	9	9	8	12		166
YUCH	0	2		1	50			4	1	140
Total	0	386	66	132	136	13	40	30	436	2381

Table 13

ALASKA REGION PROPERTIES LISTED ON THE NATIONAL REGISTER OF HISTORIC PLACES

LOCATION	NAME OF PROPERTY	DATE
BELA	Fairhaven Ditch (87001579)	9/23/87
CAKR	Onion Portage Archaeological District (+06/02/78) (72000191) Cape Krusenstern Archaeological District (+11/07/73) (3000378)	06/20/72 11/07/73
DENA	Teklanika Archaeological District (76000171) Patrol Cabins, Mt. McKinley NP TR- Ewe Creek Ranger Cabin #8 (86003217) Igloo Creek Cabin #25 (86003208) Lower East Fork Ranger Cabin #9 (86003214) Lower Toklat River Ranger Cabin #18 (86003222) Lower Windy Creek Ranger Cabin #15 (86003229) Moose Creek Ranger Cabin #19 (86003231) Riley Creek Ranger Cabin #20 (86003225) Sanctuary River Cabin #31 (86003206) Sushana River Ranger Cabin #17 (86003227) Toklat Ranger Station - Pearson Cabin #4 (86003207) Upper East Fork Cabin #29 (86003209) Upper Toklat River Cabin #24 (86003211) Upper Windy Creek Ranger Cabin #7 (86003219) Mt. McKinley NP Headquarters (87000975)	01/31/76 11/25/86 11/25/86 11/25/86 11/25/86 11/25/86 11/25/86 11/25/86 11/25/86 11/25/86 11/25/86 11/25/86 11/25/86 11/25/86 11/25/86 10/23/87
KATM	Brooks River Archaeological District (78000342) Old Savonoski Site (78000344) Archaeological Site 49 MK 10 (78000425) Savonoski River Archeological District (78000525) Fure's Cabin (85000187) Archaeological Site 49 AF 3 (78000276) Taki Island Archeological District (78000275) Kaguyak Village Site (78000274) Kaguyak Village Site (78000343)	2/14/78 6/23/78 6/23/78 5/23/78 2/07/85 2/17/78 6/23/78 6/23/78 7/20/78
KLGO	Klondike Gold Rush NHP (76002189) Skagway Historic District and White Pass (66000943) Chilkoot Trail (75002120)	6/30/76 10/15/86 4/14/75
SITK	Sitka NHP (66000164) Russian Bishop's House (66000025)	10/15/66 10/15/66
WRST	Chisana Historic District (85002999)	11/29/85
YUCH	Yukon River Lifeways TR Ed Beiderman Fish Camp (87001204) Frank Slaven Roadhouse (87001202) Woodchopper Roadhouse (87001201) George McGregor Cabin (87001199)	7/20/87 7/20/87 7/20/87 7/20/87 7/21/87
Alaska Region Properties with Formal Determination by Keeper Pending:		
DENA	James Taylor Cabins (part of Yukon River Lifeways Thematic Resource nomination)	6/8/87
Alaska Region Properties Determined Eligible by NPS and SHPO:		
DENA	Glacier City (AHRIS Site No. MMK-003) Stampeded Mine (MMK-016) Busia Cabin (MMK-017) Kantishna Roadhouse (MMK-018) Fannie Oulgley Residence (MMK-020) Banjo Mill (MMK-022) Upper Caribou Creek Historic Complex (MMK-023) MMK-027 MMK-028 Glacier Creek (MMK-055)	7/1/83 7/1/83 7/1/83 7/1/83 7/1/83 7/1/83 7/1/83 7/1/83 7/1/83 7/1/83 4/24/91
KEFJ	Sonney Fox Mine (SEL-175) Nukalaska Millsite (SEL-177)	4/24/91 4/24/91
WRST	Ed. S. Orr Co. Superintendent's House (NAL-256)	5/15/91

Table 14

CRMIM SURVEY RESULTS (ACRES)*

CRMIM survey results (acres)											
Year	DENA	BELA	GAAR	GLBA	KATM	KEFJ	LACL	WRST	YUCH	Total	
1986	2000							4160	4635	10795	
1987	45							10327		14907	
1988	7770		1490					1400		10660	
1989	820	340			119	246	119	218		1861	
1990											
1991	298	205				25		558		1087	
1992	276							280	464	1020	
1993	103		284	40				1054	92	1573	
Total	15847	545	1774	40	119	271	119	17996	5191	41902	

* from Cultural Resources Mining Inventory and Monitoring Overview; "acres" are used to record AREA surveyed.

Table 15

CRMIM SURVEY RESULTS (MILES)

CRMIM Survey Results (Miles)										
Year	DENA	BELA	GAAR	GLBA	KATM	KEFJ	LACL	WRST	YUCH	Total
1986	54							68	23	144
1987										
1988										
1989								14		14
1990	6							6		12
1991										
1992										
1993										
Total	60							87	23	170

* from Cultural Resources Mining Inventory and Monitoring Overview; "miles" are used to indicate LINEAR survey.

FIELD STRATEGIES

Within the NPS system, archeological inventory projects traditionally have focussed on a single park unit at a time. Since all but three of the NPS units in Alaska contain 600,000 acres or more, this is likely to continue to be the case for many of the SAIP projects here. In most Alaska units, the crying need is for basic, baseline, and chronological data - who, what, when, and where. However, this does not mean we are limited to simple reconnaissance level surveys. Properly designed projects should expand the scope of the inquiry and should address broader questions. The how and the why questions implicit in the archeological record must be kept in mind. In addition, by having explicitly stated research domains and themes for each project and each of its phases and stages, cross-cutting projects that are not strictly focussed within individual park boundaries (or even park segments if the inventory has broken down the park area into smaller units) are entirely possible. If a particular project addresses a specific research question or illustrates a particular facet of prehistory or history (for example - coastal adaptations or mining in Alaska), it need not be limited to a single park.

This is another area where clustering of parks could be a worthwhile endeavor. Research designs and domains and staffing needs could be developed and addressed within clusters of parks that are logical from a cultural historical/cultural area point of view. One such scheme for clustering is suggested in Table 2.

Another factor that could influence the scope of the SAIP projects is that many park boundaries are essentially artificial or based on modern ecological features. It may be appropriate, therefore, to broaden the scope of an archeological project beyond park boundaries when the park is adjacent to or near other Federal, State, or Native landholdings, as is the case for most of Alaska's units. Such projects generally would result in a more complete and accurate picture of prehistoric and historic settlement patterns and land use, especially in adjacent environmental zones that complement each other. Of course, any such projects would need to be planned and conducted in collaboration, and on an appropriate cost-sharing basis, with the adjoining landowner. A good example of this type of effort would be a project involving the Alagnak River and the McNeil River on the Alaska Peninsula, which would develop from consultation and collaboration among NPS, the State of Alaska and the US Fish and Wildlife Service.

All of the parks, except possibly SITK and KLGO, would most efficiently be inventoried by segmenting each park into subareas. The degree of segmentation would depend on the individual project, priorities and budget, as well as the proposed length of each project. Since many of the segments in the larger parks in Alaska are larger than most other parks, each segment would probably have to be subdivided into manageable survey units. The long timeline of the Systemwide Archeological Inventory Program, in the range of 20 to 30 years, will allow the most efficient use of resources. The planning for the inventory of the larger parks and park segments can be spaced out in multiyear projects and in multiples of the projects. More intensive survey of smaller segments can be undertaken if it is understood there will be further

opportunities for inventory over the years. In other words, 6,000,000 acres will not have to be covered (or sampled) in just one four or five year survey project. Taking the long view of multiple projects and years, laying out explicit research themes, targeting specific segments of a park in each stage of the inventory, paying close attention to priorities and management needs, and incorporating data management and preservation, will lead to a comprehensive inventory and resources management program.

The Systemwide Archeological Inventory Program does not envision a 100 percent archeological survey of the more than 54 million acres of land and submerged land in the National Park System of Alaska. Instead, it seeks an appropriate level of survey coverage to locate, identify, evaluate, and document archeological resources in the system. All of the units in Alaska, except SITK, KLGO and ALAG, are over 600,000 acres and thus call for careful project design, budgeting and implementation to maximize the return for the effort expended.

The Alagnak Wild River unit of 24,000 acres is closely associated with Katmai National Park and Preserve and should be surveyed in conjunction with KATM (in terms of sampling and interpretation). SITK, with 107 acres, and KLGO, with 13,000 acres should receive 100 percent inventory of all federal land and as much of the state land in KLGO (managed by NPS) as possible.

With a total of over 51,000,000 acres that have not been surveyed even at the reconnaissance level sampling is an absolute necessity. An initial environmental stratification of each unit will eliminate those areas with extremely low site potential - glaciers, steeply sloping terrain, mountains above a certain elevation, huge glacial rivers, etc. Other filtering factors should also be applied, such as a paleoenvironmental model (if it exists), to prioritize and highlight areas of site potential. These and other such methods will reduce the absolute acreage that needs to be surveyed. If each park is then broken into manageable segments that lend themselves to the programming universe, differential sampling schemes can be applied within segments and projects, depending on priorities, needs and research objectives.

In Alaska, statistically valid sampling that can be used for precise predictive modelling is not useful, cost effective or liable to yield useable management and research data. The population (universe of sites) is too large, unknown, undefined, extensive, and chronologically (diachronically and synchronically) unrefined. After more is known about the prehistoric record and taphonomy of a small area, a test survey based on statistically valid sampling could be tried; or a *post hoc* analysis could be tried. Since any level of percentage of archeological sampling survey in Alaska would be an indirect sample by sampling land units and not sites, there is the implicit assumption that there is a correlation between sites and land forms (or whatever sampling unit is designated). Not is enough known about the prehistoric record in Alaska to make that assumption. In addition, the major uses of extensive survey data are investigations of settlement patterns, land use and cultural chronology, and without good chronological controls, a sampling survey will not detect changes over time.

In other words, the primary needs that the first stages of the SAIP program in Alaska should address are cultural chronology, range of site types, significance, distribution of sites over the landscape, and determination of the paleoenvironment and geomorphology over time. These will be best addressed by the most intensive surveys possible in many "small" areas, followed by repeated field seasons in long-term projects that include a professional and explicit research design that is revised and updated as knowledge accumulates. The exact levels of survey and methods of stratification will have to be developed for each particular SAIP project, as determined by the needs and resources of that unit.

Another way in which the vast acreage of Alaska can be more reasonably investigated is by the maximum use of appropriate technology. Being part of an integrated GIS system, use of aerial photography, Global Positioning Systems, total mapping stations (EDM and computer storage of data and computer mapping), ground penetrating radars, etc. would all contribute significantly to the timely, and cost-effective completion of the necessary archeological projects. The high initial cost of such systems will be more than made up by the savings generated from accuracy, efficiency in the field, flexibility, and time saving that the use of such equipment brings. To be able to provide support for all the park units in Alaska and to avoid the high cost and unnecessary duplication that would result if each park bought its own equipment and hired the specialized staff needed to operate it, a regional equipment pool with the appropriate staff needs to be established and maintained. This equipment pool and staff should follow the same pattern that is established for the archeological site data storage, management and retrieval system, i.e. it could be in the Regional Office, in one of the parks, or in cluster parks (see page 128).

Still another aspect of the SAIP program in Alaska that is somewhat size-related is the collection of artifacts during survey. There are so many sites, so many acres and so long a program that indiscriminate collecting during survey would lead to very large collections of artifacts that would then have to be catalogued, analyzed, and curated. This would add significantly to the costs of the program without a concomitant increase in scientific knowledge. The collecting of "diagnostic artifacts" from sites during a survey without the framework and context provided by extensive mapping, permanent datums, and excavation is unprofessional, unscientific, and damaging to the site itself (which is a nonrenewable resource). Often, over the years, the site data and the artifact data become separated physically and in records so that subsequent reexamination or reevaluation of the site becomes difficult if not impossible.

Therefore, a Minimal Collection policy will be followed in the SAIP program. Unless a collection strategy is fully addressed and justified in the research design, all artifacts will be photographed; drawn and described in the field and then left in place. A comprehensive site map showing artifact locations will be made. If it is necessary to collect artifacts, because they are threatened with immediate loss or loss of context, or if such collection is addressed and justified in the research design, such collection will only take place after a permanent reference point/datum is established

at the site and the precise locations of the collected artifacts are indicated on the comprehensive site map. Those artifacts that are recovered during sub-surface testing and excavation necessary to assess a site's significance (where the context is lost) will have to be collected but this will include all artifacts and samples - not just diagnostics. This policy of course means that adequate and professional site records and descriptions, including maps and photographs, are the key data from the inventory. As mentioned previously, data and recording standards that are comparable and compatible across the region will be established by the Regional Archeologist in consultation with his staff and the archeologists in the parks.

One of the indirect objectives of the Systemwide Archeological Inventory Program is to improve the professional quality of archeological research conducted in park areas and nearby lands. A good way to further this objective is to involve, through interaction, peer review and consultation, and cooperation with non-NPS professionals and groups. Close coordination and frequent communication will facilitate the process. Some consultations are required by statute or policy. These include coordination with the State Historic Preservation Officer, and consultation with the appropriate Native Alaskan groups, local populations, and owners of non-NPS land within park areas. Other interactions are desirable from an archeological research or management perspective, such as collaborating on inventory projects with archeological professionals with long-term interests in the area or with other federal agencies with lands in the area. Since some projects will be accomplished through contracting, the establishment and maintenance of a pool of interested and experienced professionals with expertise in Alaska's culture history to act as referees, reviewers, and bidders is absolutely necessary. In addition, many of these projects will involve professionals of many disciplines, such as geologists, biologists and botanists, historians and ethnographers, technical experts in various archeological specialties, so participation in the professional scientific community is necessary over a broad front.

In Alaska, consultation and collaboration with local communities and Native Alaskan groups is not only required by statute and policy but is also key to the success of any broad inventory. Indigenous groups and cultures are vital participants in the management of the NPS areas in Alaska. There is ongoing use of park resources and lands, strong continuities with late prehistoric and protohistoric cultures, and continuing acculturation, adaptation and participation in the Euroamerican culture. There should be continuous interaction with local communities during the entire span of any SAIP project - prior consultation, interaction and participation during the fieldwork, and communication of the results and interpretations of the project.

In any survey and inventory effort the place "where the rubber meets the road" is in the fieldwork. The research effort and methods in any case are dictated by the nature of the local environment and the intensity of survey that is required. However, some basic precepts that must be included for all projects are:

- fieldwork should make maximum use of multidisciplinary background research;
- the survey team should include persons trained to recognize all types of archeological phenomena that are likely to occur (prehistoric, historic, ethnohistoric, etc);
- within reason, all ground surfaces should be inspected (within the limits of site visibility);
- subsurface exploration should be done in appropriate circumstances;
- field crews should make maximum use of appropriate technology;
- if done by contract, the Contracting Officer's Representative should have the appropriate training and the Scope of Work must meet professional standards;
- staff continuity should be maintained for the entire length of the project whenever possible;
- cost estimates should be realistic and account for all factors;

Each regional plan and each project must develop cost estimates. The cost estimates should take into account, at both the regional and individual research design levels all of the costs associated with such an effort. These include total costs for all of the components of the projects, even the hidden ones. These include, but are not limited to :

- Personnel (e.g., permanent, term and temporary positions, contractors, consultants, peer reviewers, etc);
- Travel and logistics, per diem, and overtime;
- Equipment (e.g., computers, software, GIS, GPS, cameras, radios, remote sensing gear, etc), purchases and leases, and subsequent maintenance and repair;
- Supplies and materials;
- Special data acquisition (e.g., purchase of existing remote sensing or digitized data);
- Special studies (e.g., pollen analysis, radiocarbon dating, archeomagnetic studies, soil analysis, artifact stabilization and conservation, etc.);
- Curation, and data storage;
- Office, laboratory, and storage space;
- Publication costs (e.g., scientific reports and books, drafting and cartography, non-technical books and pamphlets);
- Attendance at professional meetings;
- Public outreach activities and materials (including travel and personnel costs)
- All overhead costs.

PRIORITY SETTING

An important element of an integrated regional inventory plan is a prioritized set of project statements and 10-238's that chart the long-term directions and objectives of the program. In the Alaska region the priorities will be determined in the following manner:

- Each system unit will develop and write SAIP project statements through the RMP process. Priorities for each park will be set in the RMP and will take into account the SAIP Guideline Systemwide Priority Factors (pp 12-15);
- If a cluster park strategy is implemented, then project priorities within each cluster will be set by the park-based archeologists and the superintendents of that cluster.
- Regionwide priorities will be set by a SAIP Priority Setting Committee. This committee will consist of the Regional Archeologist, a superintendent, two park Cultural Resources Specialists, and a park Natural Resources Specialist. The Regional Archeologist will be the only permanent member of the committee. The other members will serve on the committee for overlapping three year terms, so there is always some continuity among the committee members from year to year. The committee will meet on an annual basis and will set and review priorities for three to five year periods.

STAFFING

The implementation of the SAIP program will require additional staff, even if contracts, interagency and cooperative agreements, etc. are used extensively to carry out the projects. A system of precise, consistent, and fluid position management will be developed. Most of the positions will be term, seasonal, or temporary appointments in the parks or regional office. The sharing of staff between the regional office and parks (and park clusters) should be considered standard practice to make the most effective use of available expertise and to make certain available staff and available funding are balanced to the extent possible. For the sake of continuity, efficiency, and data management and preservation a long-term view will need to be followed. Such functions as database management, graphics and GIS will need to be addressed by program personnel regardless of their duty station. The implementation of a long-term regionwide archeological inventory program will necessitate additional permanent positions, especially at the park level, if there is going to be any consistency and continuity in the program. Whatever strategic plan is developed for the long-term future of archeological programs for the parks in Alaska must take this need into account.

PROPOSED ARCHEOLOGICAL INVENTORY PROJECTS

Appendix A lists all of the project descriptions that currently exist for proposed projects in the park units in Alaska, which come under the scope of SAIP. They are listed by park in priority order within each park. There is no overall regional priority for all the projects and there will not be such a priority listing until the Priority Committee proposed in this plan is established. As noted earlier, that committee will include the regional archeologist, two cultural resource specialists from the parks, a superintendent and a natural resource representative from a park. Until that committee is established, the short term priorities for SAIP will continue to be set by the panel that sets the overall Cultural Resource Preservation Program (CRPP) priorities for the region. That panel consists of the Chief, Division of Cultural Resources; the five branch chiefs within the division (archeology, cultural anthropology, history, historical architecture, and curation); and two superintendents or their representatives.

The current, short term priorities for SAIP are based on an assumption of having \$230,000 available in SAIP each fiscal year. Consistent with CRPP priority setting, they are set annually for a three year period. The priorities for FY 1995, 1996 and 1997 are listed in Table 16. The priorities for FY 1998 and beyond have not been set yet. However, the #1 priority for FY 98 will be the seventh and final year of the "Coastal Archeological Sites Inventory" (\$75,000) and the #2 priority will be the second year of the "Map Kijik Archeological District" project in LACL (\$45,000). The #1 priority for FY 99 will be the third and final year of "Map Kijik Archeological District" project (\$40,000). Using \$230,000 as our base that will mean \$110,000 will be available for other projects in FY 98 and \$190,000 will be available in FY 99. How that and any additional money that is added to SAIP in the future will be allocated is dependent upon the Priority Committee being established and the staffs in the parks and the regional office making certain accurate and complete (including detailed and justified budgets) project statements for at least the top two priorities for each park are available for that committee to review and consider.

As can be seen in Appendix A, there are many proposed, multi-year projects that are estimated to cost hundreds of thousands of dollars. All projects funded under SAIP are required to have a research design covering the whole planning and investigating sequence of the project, and this is especially true for multi-year projects costing hundreds of thousands of dollars. A major component of the first year of all multi-year projects must be the development of a written, fully professional research design that is peer reviewed. That research design would then guide the research for the remainder of the project, but would be a dynamic product that could and would be modified and refined as new data are recovered during the life of the project. An alternative approach to having this be the first year of a multi-year project, would be to have a separate project statement for the development of a research design (This is what KATM has proposed).

Table 16

SAIP PROJECT PRIORITIES FOR FY 95, 96 AND 97

<u>Priority**</u> <u>(Factors)</u>	<u>Project Title</u>	<u>Project Cost</u>	<u>FY Year</u>	<u>Park</u>	<u>Schedule</u>
1 (2,4,5,6,7)	Coastal Archeological Sites Inventory	\$230,000	95	Multiple	4th of 7 yrs
1 (2,4,5,6,7)	Coastal Archeological Sites Inventory	\$230,000	96	Multiple	5th of 7 yrs
1 (2,4,5,6,7)	Coastal Archeological Sites Inventory	\$150,000	97	Multiple	6th of 7 yrs
2 (2,4,7)	Map Kijik Archeological District	\$70,000	97	LACL	1st of 3 yrs

** Priority Factors are those enumerated in the Systemwide Archeological Inventory Program, pages 13-15.

APPENDIX A

List of Proposed SAIP Projects

<u>Park</u>	<u>SAIP</u>			<u>Years</u>	<u>Cost</u>
<u>Priority</u>	<u>Priority</u>	<u>RMP #</u>	<u>Project Title and Description</u>	<u>Total</u>	<u>Total¹</u>
ALAG					
1	-	C-015	<p>Plan and Conduct Archeological Survey</p> <p>This project proposes to complete a five-year long archeological inventory project to identify, record, and evaluate archeological resources within the Alagnak Wild River corridor administered by NPS, which has not previously been surveyed for archeological sites.</p> <p>-- Year One of the project will consist of researching and writing a brief overview and assessment of the Alagnak River region archeological resources; initiating paleoenvironmental and geomorphological studies; writing a research design for the inventory.</p> <p>-- Year Two and Year Three will consist of initiating and carrying out field survey of the NPS administered lands within the corridor, preliminary data analysis, GIS data entry, cataloguing artifacts, and preparation of interim reports.</p> <p>-- Year Four will continue the field inventory if necessary but emphasis will shift to analysis and report preparation.</p> <p>-- Year Five will be dedicated to project completion and final data analysis and report publication.</p>	5	768
ANIA					
1	-	C-004	<p>Complete Archeological Overview and Assessment</p> <p>A draft of an Archeological Overview and Assessment for ANIA was written in 1994-1995 using existing staff and funding in the Regional Office. This project will carry that draft to completion by providing for review, editing, graphics and publication of the final report.</p>	1	10
2	-	C-007	<p>Conduct Archeological Survey and Inventory</p> <p>This project proposes to complete a five-year archeological survey and inventory of archeological resources in ANIA that will identify, record, and evaluate sites within the monument.</p> <p>-- Year One will see the writing of a research design for the project and the initiation of field survey.</p> <p>-- Year Two and Year Three will consist of initiating and carrying out field survey the NPS administered lands within the corridor, preliminary data analysis, GIS data entry, cataloguing artifacts, and preparation of interim reports.</p> <p>-- Year Four will continue the field inventory if necessary but emphasis will shift to analysis and report preparation.</p>	5	768

¹Costs are in thousands of dollars.

-- Year Five will be dedicated to project completion and final data analysis and report publication.

3	-	C-006	<p>Conduct Special Studies/Paleoenvironment This project proposes to design and initiate a series of special studies to investigate the environment and paleoenvironment of the Monument. Depending on price, cooperative research efforts, and logistics these studies should include tephrochronology, geomorphology, palynology, tectonic, glaciology, etc. A GIS component would be essential.</p>	1	101
ARO					
1	1	---	<p>Coastal Archeological Sites Inventory (Multiple Parks) The project focuses on assessment, inventory and evaluation of coastal archeological sites in seven parks (ANIA, GLBA, KATM, KEFJ, LACL, SITK and WRST) bordering the Gulf of Alaska. A research design and plan for survey will be developed for each park coastal area and reconnaissance level surveys will characterize the type, variety, significance and conditions of sites in the seven park coastal zone. Geomorphological, paleoenvironmental and ethnographic data will all be incorporated into the research design and survey plan. All data will be synthesized and entered into a GIS program. Some subsurface testing will be necessary to properly define and evaluate site significance.</p>	4 ²	681
BELA					
2	-	C-101.2	<p>Write Archeological Overview and Assessment This project will compile and revise all existing information on archeological resources within the preserve, including inholdings and selected lands. It will evaluate this information and assess potential resources as well. The analysis will be done against the background of the natural environment and paleoenvironment, in order to understand the distribution of known sites and predict the location of unrecorded sites. The overview will also contain comprehensive information about the location of collections, field records, and archival sources pertaining to preserve resources.</p>	2	97
5	-	C-102.1	<p>Conduct Archeological Identification and Evaluation Studies This project is envisioned as a multi-year, multi-phase project. Because the inventory needs are so great, surveys would be conducted in 3-years pulses, focussed on prioritized areas. Each survey phase would consist of two years of fieldwork, followed by a year of evaluation and report preparation. Available remote sensing data, settlement pattern analysis, paleoenvironmental data, GIS information and analysis, and research priorities will be used as the basis for planning the surveys.</p>	3	395
9	-	C-102.2	<p>Archeological Research at Serpentine Hot Springs Serpentine Hot Springs is one of the most important cultural sites in the preserve. It has prehistoric, historic, and ethnographic values (including selection as a 14h 1 site). The archeological research project will include intensive testing focussed on the alluvial terrace adjacent to the hot springs.</p>	3	265

²This is the number of years remaining on the project. The total number of years is seven.

Intensive, systematic testing should be conducted along the length of the terrace, with emphasis on the airstrip area. Geomorphology, sedimentology, and paleoecology should be part of the research. Involvement of local Natives would be ensured through full consultation.

The first year of the project will include research design, systematic testing and analysis. The second year would be excavation of significant cultural deposits. The third year would be spent on completion of analysis and preparation of a professional and popular reports.

CAKR

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|---|---|-----------|---|---|-----|
| 1 | - | C-005.003 | Proto-Historic/Historic Archeology: Tagiuqmiit Archeology | 4 | 240 |
| <p>Tagiuqmiit means "salt water person" and refers to those families that customarily occupied the coastal area of CAKR. Formerly, people lived more or less permanently, often for generations, where they harvested. Few families overwinter in the monument today; most Tagiugmiut with traditional and continuing ties to harvest areas in CAKR take advantage of the convenience of modern modes of transportation and live in Kotzebue, Noatak and Kivalina. Ground-truthing of a large corpus of data is essential for the management of the Monument, whose entire acreage is a National Historic Landmark. In addition, the ever fewer knowledgeable Elders will be queried, on-site as far as possible, to systematically record their observations and associations regarding confirmed cultural resource physical remains.</p> | | | | | |
| 2 | - | I-001.001 | Shoreline Erosion Threat Study: Photogrammetric Baseline-Talikoot Unit | 1 | 47 |
| <p>Acquisition of detailed base maps of the Cape Krusenstern NRHP Archeological District is imperative and must precede other projects focusing upon this complex resource. Using available aerial photography and ground controls, NPS will contract for a photogrammetric model displaying 50cm contour intervals of the entire beachridge complex. All of Giddings and Anderson's site location data will be tied in to this base map. The photogrammetric contractor will provide the model in AutoCad format which will be loaded into the park's GIS system to record over 600 known features/settlements located there. Recovery of an NPS contractor's ground controls established in 1978 will enable accurate registration of future photography to that obtained in 1978 to comprehensively measure erosion and identify imminent threats to cultural resources. New archeological and ethnographic data can be tied into the established ground controls.</p> | | | | | |
| 3 | - | C-001 | Identify and Map Giddings and Anderson Sites | 5 | 340 |
| <p>Cape Krusenstern National Monument was created in large part for the Cape Krusenstern NHL which recognized the importance of the horizontally stratified 600+ features and settlements identified by Giddings and Anderson on the beachridges there. Since the creation of the Monument in 1980, the NPS has made virtually no effort to codify the features for which it was created to manage for long-term enjoyment. In 1994, NWAK obtained a copy of the small-scale aerial mosaic on which Giddings and Anderson recorded their discoveries. Unfortunately, it is difficult to transfer these features onto modern, large-scale aerial photographs or to provide precise geo-coordinates. Once project 001.001 is completed, this will be possible. Field techniques will employ laser-theodolite, GPS, and large-scale aerial</p> | | | | | |

location of all of Giddings and Anderson's features/settlements. Oblique and photogrammetric photography will be employed to document the condition of each feature/settlement upon their location.

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| 4 | - | C-019 | <p>Intensive Survey: Red Dog Road Corridor-Igarich Unit
 Edwin Hall and Associates, under contract to Cominco, conducted archeological surveys along the Red Dog Road right-of-way and at material sites mined to build the road. Thirty miles of the road traverse the northwestern corner of CAKR. Hall and Associates focused on proposed construction areas and did not survey a broad corridor during their pre-construction surveys. Now completed, the road affords access to archeologically unsurveyed portions of CAKR to Cominco employees and others, especially employees stationed at the Port Site. Several times (after freeze-up when archeological surveys are impossible) Cominco has requested permission to construct snow-fences adjacent to the roadway within CAKR. Intensive survey and subsurface testing will be conducted on CAKR lands within 5 miles of the roadway (192,000 acres).</p> | 4 | 180 |
| 5 | - | I-001.002 | <p>Shoreline Erosion Threat Study: Ethnohistory
 Guided interviewing of owners of Native allotments within the Monument and others will be employed to document episodes of erosion and deposition at Cape Krusenstern. Oral sources are expected to provide details of processes of beach erosion spanning the last 60 years. Stories and cautions passed by the antecedents of today's Elders are likely to provide additional, though probably less detailed, information pertinent to the early to mid 19th Century geomorphic process.</p> | 2 | 120 |
| 6 | - | I-001.003 | <p>Shoreline Erosion Threat Study: Ethno-archeology
 NPS archeologists, accompanied by knowledgeable persons identified in component .002 of this project, will ground-truth areas of erosion and points of catastrophic partial or total destruction of settlements. These data, combined with archeological data from the earlier beachridges, may be used to generate models of storm cyclicity and climate change that can address changing patterns of human occupation of Cape Krusenstern spanning the last 4,000 years.</p> | 3 | 210 |
| 7 | - | C-009 | <p>Native Allotment Survey/Management Agreements
 Roughly 50% of the ocean shoreline of the Cape Krusenstern NRHP Archeological District is privately owned (Native allotments). The allotment parcels are 40 to 160 acres in size and in some cases extend back from the modern beach across numerous old beachridges containing archeological resources that contribute to the NRHP and NHL designations. Most of the 600+ feature clusters identified by Giddings and Anderson (and which prompted the NHL and NRHP district designations) are privately owned. A significant number of these, mostly assignable to the Kotzebue Period, are threatened by coastal erosion. The boundaries of these Native allotments are not posted (most have not yet been surveyed) thus park visitors viewing the ruins of ancient settlements are likely to trespass on private lands. In 1993, Princess Tours advertised and scheduled (but then did not conduct) luxury-boat-based tours of the Cape Krusenstern NRHP Archeological District. CAKR's enabling legislation and GMP direct the NPS to manage and</p> | 3 | 150 |

interpret cultural resources in collaboration with Alaskan Natives and recommend that the NPS obtain cultural easements or forge other forms of agreement for preserving these privately owned resources within park boundaries.

With the consent of allottees and the BIA, NPS archeologists will complete intensive survey and subsurface testing of all of the allotments within the archeological district. Site evaluations will assess risk of erosion and loss of resources and propose and prioritize treatment. These data will be used, in collaboration with the allottees and BIA, to formulate a management plan for the privately owned lands within the archeological district. The plan will be presented to the Alaska SHPO for concurrence prior to implementation. The GMP and Land Protection Plan recommend acquisition of cultural easements on private lands within the Monument.

8 - C-018 **Intensive Survey - Talikoot Unit (uplands)** 2 110

No systematic reconnaissance-level archeological surveys have been conducted in the Igichuk Hills behind Krusenstern Lagoon. The Igichuk Hills would have been a significant landmark for travelers out on the now-submerged Bering Land Bridge. The Palisades Site on the southern edge of the Igichuk Hills indicates that people used the area between 4,000 and 6,000 years ago. In the 19th century, Napaaqturmiut and Qikiqtagungmiut Inupiat traversed the Igichuk Hills en route from winter settlements in the Noatak flats to their spring sealing grounds off Cape Krusenstern. A 10% stratified sample survey of the uplands of the Talikoot Unit will assess the archeological potential of the area.

9 - C-017 **Intensive Survey - Sisualiq Unit** 2 120

Divided by Sisualiq Lagoon, the Sisualiq Unit consists of a beachridge complex and an upland area. The entire unit lies within the Cape Krusenstern NHL. The Kikiktagruk Inupiat Corporation (KIC) has received title to the entire beachridge complex at Sisualiq and also owns some land in the upland area.

Giddings did some limited testing of the Sisualiq beachridge complex in the early 1960s but abandoned further work there in favor of excavating sites on the massive beachridge complex at Cape Krusenstern. The position of a Thule-period site tested by Giddings on the lagoon side of the beachridge complex at Sisualiq suggests rapid beachridge buildup over the last 1,000 years since the Thule site was occupied. Very fine horizontal stratigraphy is expected under these conditions of rapid beachridge construction.

A single site, an Ipiutak burial at Tulaagiaq, reported by a Native allottee digging a foundation for a new house, is the only investigated site in the uplands of the Sisualiq Unit. Remnants of an old shoreline bluff, traceable for a distance of twelve miles, are now far inland but define a coastline that existed prior to 5,000 years ago when the present beachridge complexes began to form. Sites at least of Palisades complex age are expected to be found along this shoreline bluff. 19th Century Qikiqtagungmiut Inupiat traveled by sledge between their winter settlements in the uplands of the Sisualiq Unit

and on the Noatak flats and their summer encampments on the beachridges at Sisualiq and Cape Krusenstern.

CAKR's enabling legislation and GMP direct the NPS to manage and interpret cultural resources in collaboration with Alaskan Natives and recommend that the NPS obtain cultural easements or forge other forms of agreement for preserving these privately owned resources within park boundaries. With the consent of allottees and KIC, NPS archeologists will complete reconnaissance survey and subsurface testing of the Sisualiq Unit beachridges and uplands. These data will be used, in collaboration with the allottees and KIC, to formulate a management plan for the resources identified and make recommendations for further survey.

DENA

3	-	I-111	<p>Conduct Resource Mapping - GIS/AutoCad This project would take all recorded cultural resources sites in DENA and verify their locations to the extent possible. The results of that effort would then be entered on a park-wide GIS database. All related information on those sites would also be entered on an associated relational database so that cross correlations are possible.</p>	3	500
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6	-	C-210	<p>Conduct Archeological Inventory and Evaluation Program In order to obtain a representative picture of the archeological resources in DENA, an environmentally stratified site survey would be conducted over a five-year period. A diverse sample of environmentally significant settings would be determined by a corollary project that combines archeological, geological, and paleoenvironmental expertise (such as the 1982 North Alaska Range Project). Phase I would develop the environmental stratification model and the research design through paleoenvironmental mapping, field research, and analysis. Subsequent phases would encompass the archeological inventory and evaluation. The last phase would be analysis, NR nominations, write-up, publication, curation of any collected material, and data recordation on appropriate databases and maps.</p>	5	798
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GAAR

-	-	C---	<p>Complete Archeological Overview and Assessment This project will produce an Archeological O & A as described in NPS-28. This is an old, incomplete project that will be finished using existing staff and funding in the Regional Office. The study will evaluate the archeological resources in GAAR, assessing themes, resource needs and management concerns. All site locations will be verified to the extent possible, placed on a GIS system, and placed on the AHRS. By providing such a framework, this document will form the basis for specific research designs for inventory and other cultural resources projects. This project will provide for carrying that draft to completion by providing for review, editing, graphics and publication of the final report.</p>	2	10
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|----|---|-------|---|---|-----|
| 6 | - | C-101 | <p>Conduct Archeological Baseline Survey and Inventory</p> <p>The first archeological inventory project in GAAR (begun in 1983) was not completed. Based on the density of known sites from that survey and others, the archeological resources within the park and preserve are believed to be very extensive in terms of area, number, cultural diversity, and temporal range. This project will be a multi-year, multi-phased project. Because inventory needs are so great, surveys will be focussed on prioritized geographic areas. An archeological inventory would be conducted on the central and western sections of GAAR, including the drainages of the Alatna, Killik, Noatak, and Nigu rivers.</p> <p>After completion of the fieldwork, analysis and writeup would be done. Site locations will be added to the GIS and master maps, AHRS, ASMIS and any other databases required. National Register nominations will be done as appropriate. A complete and comprehensive report, both professional and public, would be written, which describes the survey results and integrates them into a descriptive model of site type and location.</p> <p>Consultation with interested Native groups, local communities, and appropriate state and federal agencies will be done prior to and throughout the project in order to provide information about the project, provide and opportunity to comment, and to give an opportunity to become involved.</p> | 4 | 530 |
| 7 | - | C-104 | <p>Conduct Archeological Site Evaluation Program</p> <p>This project involves development of a testing program for a minimum of three sites in the park and preserve. Primary targets would be potentially significant sites that are threatened or being impacted. Site selection would be based on data from the archeological inventory and recommendations from knowledgeable experts in the field. Data from this testing program would be used to develop a set of archeological criteria for judging the significance of all the sites within the park and preserve, especially which ones are eligible for placement on the National Register of Historic Places</p> | 4 | 345 |
| 12 | - | C-111 | <p>Develop Obsidian Hydration Dating Chronology</p> <p>This project would follow two methods for the development of an obsidian hydration chronology for archeological sites in the Central Brooks Range. The objective of the study would be to shift this method from one for relative dating to one for absolute dating.</p> <ul style="list-style-type: none"> - Obtain a number of samples of obsidian artifacts from archeological sites in the Brooks Range with diagnostic artifacts and radiocarbon dates and then measure the thickness of the obsidian hydration rinds. This would allow the calculation, <i>post hoc</i>, of a hydration constant for those age ranges and locations. - Measure the physical variables that control hydration rates and then directly calculate rates of hydration from these variables. The best method for this would be to place thermal cells in a number of controlled locations and directly measure the annual effective hydration temperature in those areas. | 3 | 225 |

GLBA					
1	-	C-95.01	<p>Write Archeological Overview and Assessment</p> <p>This study will evaluate the archeological resources in GLBA, assessing themes, needs, and management concerns. All known sites will be located on master maps and GIS. This study will also lay out the glaciological history of GLBA and correlate it with geomorphology and paleoenvironment. The O&A will provide a context for specific research designs for inventory and other projects, as well as management planning and protection.</p>	2	9
2	-	C-95.02	<p>Conduct Archeological Inventory and Testing Program</p> <p>Research combining geological, paleoenvironmental, and archeological expertise would form the basis for this project. Geological and paleoenvironmental research would be needed to determine possible site locations which were stable land formations extending back to interglacial times. An archeological team would then test these locations in order to determine frequency, size, depth, and significance of sites. More recent historic and protohistoric sites would also be incorporated into the search.</p> <p>The project would be done in stages. Phase I would be the geological and paleoenvironmental research, field work, and analysis (including GIS database setup). Phase II would be archeological fieldwork to test and refine the model. Phases III and IV would be straightforward archeological fieldwork, including coastal and submerged lands (if the model indicates such a need). The last Phase would be analysis, write-up, publication of the results (both at the professional and popular level).</p>	5	64
KATM					
1	-	C-015	<p>Plan Archeological Survey</p> <p>This project proposes to complete an annotated bibliography of paleoenvironmental data, travel to study extant archeological collections, hold an interdisciplinary workshop of subject matter experts, prepare professional research designs for survey, procure aerial photographs, and initiate a GIS database.</p>	1	45
2	-	C-004	<p>Conduct Archeological Survey</p> <p>This project proposes to complete a five-year archeological survey to identify, record, and evaluate archeological resources in the interior lakes and river systems of KATM, areas that have not been previously surveyed. Years I, II, and III will consist of initiating and carrying out field survey of the areas identified in the research design, preliminary data analysis, GIS and database management, cataloguing artifacts, and writing interim reports. Year IV will complete the field inventory and begin the process of final report preparation and publication, writing National Register nominations, writing interpretive and popular presentations, data entry into all appropriate databases. Year V will see final completion of all parts of this project, including management and program recommendations.</p>	5	768

KEFJ					
2	-	C-202	Write Archeological Overview and Assessment This study will compile and review all existing information on archeological resources within the park. Data from the multi-park Coastal Sites Inventory will be reviewed and incorporated. The information will be used to assess the potential archeological resources as well. The overview will analyze this information against the backdrop of the natural environment and paleoenvironment, in order to understand the distribution of sites and predict the location of unrecorded sites. It will also contain comprehensive information about the location of relevant collections, field records, and archival sources pertinent to park archeological resources. All site information will be placed into the appropriate databases and maps. Development of historic themes and contexts will be consistent and complete. Research designs for further inventory in the park will be written.	2	97
3	-	C-203	Conduct Archeological Identification and Evaluation Studies This project is envisioned as a five-year effort, with the first two years of survey and testing focussed on the park's coastal lands using a model developed from the Coastal Sites Inventory project; a third year of survey and testing in the interior lands; and the final two years spent on evaluation of the data and artifacts collected (with additional site testing if appropriate), and preparation of final reports and presentations. The survey and testing program will be guided by the archeological overview and assessment and consultation with local Native groups and communities. The survey team will be interdisciplinary, featuring geomorphology and glaciology.	5	453
KLGO					
1	-	C-100	Produce Arch. Overview & Assess. of Chilkoot Trail & White Pass Units This project will involve production, through contract, of a management-oriented study that will gather present knowledge and past research, evaluate and analyze it in order to make general statements regarding the nature, distribution, and significance of the archeological resources within those units of the park. Recommendations for future research and protection will be made as well as predictions about future impacts to those resources. It will contain comprehensive information about extant collections, archival material and field records.	2	60
2	-	C-102.01	Remote Sensing of Selected Archeological Sites Contracts would be issued for subsurface mapping of selected portions of Skagway and Dyea through the use of such instruments as proton magnetometer, electrical resistivity, ground-penetrating radar, and other appropriate technologies. For the areas covered the targeted level of coverage would be 100%. The main focus of the coverage would be all park-owned lots in Skagway, the Slide and Native cemeteries in Dyea, as well as those areas along the Taiya River that are threatened by erosion.	1	25
3	-	C-102.02	Complete and Computerize Dyea Townsite Archeological Base Map A professional survey team will make a complete archeological base map using known features. The team will also produce a standard landform and contour map of the Dyea townsite.	2	76

- 4 - C-102.03 **Update and Computerize Skagway Archeological Base Map** 1
 This project will integrate information about prior land use in the city of Skagway with information from prior archeological investigations in the same area and produce a computerized map. The basis of such a map will be a CAD drafting program
- 5 - C-102.04 **Conduct GPS Survey of All Archeological Sites/Features** 2
 Just under 500 archeological features have been located in the park within the last ten years, and the number is expected to rise as survey work continues. An up-to-date locational database needs to be constructed for mapping, planning, research, and management.
- 8 - C-101 **Conduct Archeological Identification/Evaluation Studies** 5 3
 The park intends to continue comprehensive archeological field surveys of the entire Chilkoot Trail and White Pass units, as well as the rest of the park. The Chilkoot Trail should take about three field seasons, the White Pass three field seasons, and an archeological inventory of Skagway would take at least one field season. Analysis, including assessments of site significance and research potential, write-up, and data recordation will take at least one full year.
- 9 - C-107 **Research Topics Related to Sites, Structures and Objects (22 Projects)** 2 18
 Research and Develop Computer Database for Objects with Manufacturer's Marks.

 Research and Develop Object/Building Profile

 Develop Computer Database for U.S. Patent/Trademark Records

 All of these topics would be researched and built into databases to be used for assessing the significance of archeological sites, features, artifacts and historical materials. All material from the park' sites and collections would be incorporated into the different databases.

KOVA

- 1 - C-005.002 **Proto-Historic/Historic Archeology: Akunirmiut Homeland** 5 30
 The Akunirmiut home territory included all of Kobuk Valley National Park. Many Akunirmiut descendants now reside in villages adjacent to the park: Kiana, Ambler, Shungnak, Kobuk. Although no village is occupied within the Park today, Stoney and Cantwell reported several villages along the Kobuk River in the 1880s. The Park archeologist recently located the winter village visited by Cantwell in 1884. One of the two largest settlements (several hundred persons) along the Kobuk that is recorded in the 1900 Census was located near the Hunt River in the Park. Its location and physical condition is not known. Akunirmiut men left their families to fish along the Kobuk River and spent their summers hunting sheep in the Baird Mountains. Informants report drive lines and corral-traps for sheep but such have not been described in the literature. Only one archeological site is reported north of the Kobuk River. Using the direct historical method, models of Akunirmiut settlement/subsistence may be applied to revealing and understanding earlier occupants and users of the Park. Identified cultural sites

will be ground truthed and the presence of archeological resources will be documented. The ever fewer knowledgeable Elders will be queried and their observations and associations regarding confirmed cultural resource physical remains will be systematically recorded.

2 - C-001

Great Kobuk Sand Dunes Reconnaissance Survey - Dune Unit

3 230

The Great Kobuk Sand Dunes cover more than 23,000 acres and constitute THE major attraction of Kobuk Valley National Park. Knowing that the Kobuk Valley has been unglaciated since mid-Pleistocene times and reasoning that early and later prehistoric Alaskan hunters may have used the dunes to trap large ungulates as the Paleo-Indian hunters did in the American West, Stanford et al. conducted a brief reconnaissance survey of the dunes in the late 1980s under ARPA permit. This survey identified surface sites in the dunes that may be assigned to the Arctic Small Tool (Denbigh and possibly Choris), Northern Archaic (Palisades), and American PaleoArctic (Kobuk) traditions. Re-examination of one of the sites in 1992 disclosed artifact forms that suggest cross-ties with the Early Denali complex of Interior Alaska. Less than 3% of the Great Kobuk Sand Dunes have been examined by archeologists. Sites are readily identified in the dunes, even by untrained persons. In the dunes, any lithic materials larger than a grain of sand have been deposited there by humans. As the artifacts recovered from the dunes to date are made of vitreous black, bright gray, or red chert and obsidian, they shine like beacons on the unvegetated, uniform, sandy background, particularly after a rain. Sites in the dunes therefore are particularly vulnerable to intentional or unwitting collection.

A charter boat operator from Kiana began advertising charter transportation to the dunes in 1993. In the winter of 1994-5, NANA Regional Corporation approached the NPS with proposals for campsite and trail development for the dunes. The threshold of organized tours of the Great Kobuk Sand Dunes is at hand; adverse impacts to cultural resources will result. The first priority for archeological survey in KOVA must be intensive and 100% surface survey of the dunes to identify and evaluate cultural resources at risk. As the dunes shift over time, now buried cultural resources will be exposed at surface and periodic re-survey will be necessary. The results of the survey will be employed to formulate management guidelines for visitors to the dunes.

3 - C-003

Arctic Woodland Culture Multi-Property District

3 230

Between 1940 and the early 1950s, J.L. Giddings, Jr. conducted a program of archeological survey and excavation along the Kobuk River. Giddings used archeological wood and modern tree corings to construct a composite dendrochronological curve (useful for climatological and archeological studies) that covered almost 1,000 years. Giddings also formulated the landmark archeological/ecological construct, the Arctic Woodland Culture, and suggested that the post-Thule penetration of interior regions by Eskimo peoples he documented represented "a predictable combination" of cultural and social adaptations. Giddings' pioneering field recordation methods along the Kobuk River were primitive. Accurate maps of the Kobuk River did not exist when Giddings began his work; his site locations are provided only in narrative and crude, small-scale sketchmap format. Giddings focused on

obtaining household assemblages to lay out a tree-ring record and a cultural-historical chronology. He did not map his archeological settlements, he did not qualify or quantify the range of archeological features at these settlements.

Good locational data is not even available for the sites Giddings excavated, much less for those sites he only visited, or which were reported to him by Kuuvangmiit Inupiat. His Ahteut site, the earliest he excavated and dated to A.D. 1250, is described as several hundred housepit clusters of several time periods, located on both sides of the Kobuk River downstream of Kavet Creek. The archeological collections Giddings made are at the University of Alaska Museum in Fairbanks, the University Museum in Philadelphia, and at the Haffenreffer Museum in Bristol, RI. Giddings' dendro materials are in Fairbanks and at the Tree-ring Laboratory in Tucson. Unpublished notes relating to Giddings' Kobuk River Survey remain at Brown University, with his children and perhaps elsewhere.

Three products will result from this SAIP project: 1) a consolidated inventory of archival/museum materials; 2) a report of field survey providing accurate locational data for all of Giddings' sites, settlement maps for each of the sites, and documentation of the condition of each feature mapped; 3) an NRHP Multi-Property District nomination, justified by the Arctic Woodland Culture theme.

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| 4 | - | C-002 | <p>Kobuk River Corridor Reconnaissance Survey</p> <p>The Kobuk River runs through KOVA for about eighty river miles . Current use of the park is almost totally centered on the river. A winter snowmachine trail (an RS2477 right-of-way) follows the river for much of its length. Tourists and local residents use watercraft and camp along the river where convenience dictates. Giddings' archeological survey of the Kobuk River was neither systematic nor intense but is indicative of a dense concentration of sites along the river. A boat-supported archeological survey will examine all 160 miles of riverbank within KOVA (except privately owned parcels and site areas reported by Giddings; see KOVA-C-003 and -008 which should be completed first) as well as the upland sections of the RS2477 right-of-way. All sites will be documented to NPS-28 standards and entered in the KOVA Cultural Sites Inventory.</p> | 4 | 240 |
| 5 | - | C-007 | <p>Onion Portage NHL Intensive Survey and Management Plan</p> <p>The Onion Portage NHL is a KOVA resource featured by the NPS in its brochures. The NHL is included within the large Onion Portage NRHP Archeological District, less than 5% of which has been surveyed. While the Onion Portage NHL and archeological district are within the designated boundaries of the park, all the lands within these designated areas are privately owned by individuals and by an ANCSA Native Corporation (NANA). The NPS leases a cabin near the Onion Portage site and uses the cabin as a seasonal ranger station but has no meaningful jurisdiction over the NHL or the district; no interpretive/advisory services for the NHL and archeological district, commensurate with their local, state and national importance, are provided by the NPS. KOVAs enabling legislation and GMP direct the NPS to manage and interpret cultural resources in collaboration</p> | 3 | 271 |

with Alaskan Natives and recommend that the NPS obtain cultural easements or forge other forms of agreement for preserving these privately owned resources within park boundaries.

This project will complete intensive survey and subsurface testing of 100% of the archeological district. These data will be used, in collaboration with the NANA Regional Corporation and other individual landowners of portions of the archeological district, to formulate a management plan for the NHL and archeological district. The plan will be presented to the Alaska SHPO for concurrence prior to implementation.

- 6 - C-008 **Native Allotment Survey/Management Agreements** 4 120
Dozens of privately owned Native allotments (40 to 160 acre parcels) are scattered along the Kobuk River within the park. These allotments were selected because of the presence or proximity of subsistence resources, many of which have long temporal stability. Thus, there is a high probability that Native allotments overlie historic or prehistoric archeological sites. KOVAs enabling legislation and GMP direct the NPS to manage and interpret cultural resources in collaboration with Alaskan Natives and recommend that the NPS obtain cultural easements or forge other forms of agreement for these privately owned resources within park boundaries. Annually, access to Native allotments would be negotiated and surface surveys and intensive subsurface testing would be conducted. In addition to documenting the presence and absence of cultural resources, annual reports would recommend and prioritize long-term preservation measures. KOVA-C-007 should be completed prior to this project to develop trust and engender cooperation.
- 7 - C-004.001 **Historic Archeological Survey and Archival Search 1898 Gold Rush** 2 80
In 1898, an abating Yukon "Gold Rush fever" was refired by reports of new gold discoveries on the Kobuk River. In the summer of 1898, gold-seekers stampeded to the Kobuk. Disappointing results that fall and winter prompted wholesale disengagement, some of the stampeders drifting into the Koyukuk region but most rushing to Anvil Creek (Nome) during the summer of 1899.
- A published journal by Grinnell describes the activities at one of the 1898-99 camps at the Hunt River and includes a crude map of all of the miners' camps along the river. Doubtless other rich accounts exist in archives. In 1993, three structures, possibly 1898-99 miners' camps but not Camp Penelope where Grinnell over-wintered, were documented in the Hunt River dunes. Archeological resources relating to the 1898-99 Kobuk Stampede are not just historically significant but have potential theoretical significance as well. As the camps were occupied for less than a year only, the remains at these sites should provide a snap-shot of material culture and human behavior; more usually, historic site resources are composites of decades of use with the activities of the most recent occupants blurring or obliterating the record left by their predecessors. The Kobuk Stampede was the first sustained contact of Kuunangmiit Inupiat with Euro-Americans and study of the exchanges and incorporation of items of material culture by both groups in this classic Euro-American/indigene culture contact situation could prove fruitful.

Following archival work, field surveys will locate and document described historic locales and historic features associated with the Kobuk Stampede of 1898. These data will be used to augment the gateway theme developed by the NPS for Seattle, Skagway and Nome.

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| 8 | - | C-019 | <p>19th Century Travel/Trade Routes Across Baird Mtns. -Salmon Unit
 Burch has documented 19th Century Inupiat use of several north-south valleys in the Baird Mountains whose hydrologic divide is the boundary between KOVA and NOAT. Baird Mountain Dall sheep were a significant 19th Century subsistence resource and oral tradition records the use of complex drivelines and traps for harvesting sheep. No sheep traps have been recorded in the archeological literature. These valleys have not been glaciated since the late Pleistocene and likely also served as thoroughfares for earlier humans in the region. Regional archeological distributions of jade and chert seem to support this likelihood. Archeological survey of these passes was targeted by the CRPP Site Identification Study of NOAT but was not initiated. Passes such as these in the Baird Mountains are not permissive of protracted occupation. Archeological sites in such situations are therefore likely to yield the kind of small-scale archeological assemblages that are most useful for establishing regional chronology. Logistics for the survey must be provided by helicopter.</p> | 1 | 75 |
| 9 | - | C-018 | <p>Reconnaissance Survey: Baird Mountains Foothills - Salmon Unit
 Parklands north of the Kobuk River have been designated as two study units, the Salmon on the west (780,000 acres) and the Hunt on the east (461,000 acres). The foothills of the Baird Mountains, which stretch E-W across the Hunt and Salmon Study Units and border the broad, unglaciated, geologically active floodplain of the Kobuk River, have been relatively stable over the last 30,000+ years and thus have good potential for harboring sites at ALL time horizons. A single possible American Paleo-Arctic (Kobuk) site, incidentally reported during a geological study of the Hunt Study Unit, has been listed in the AHRS. No archeological surveys have ventured into the 1,241,000 acres of the combined Salmon-Hunt units. Initial reconnaissance survey will begin in the Salmon Unit, which includes the designated Salmon Wild and Scenic River, a feature advertised by NPS to tourists.</p> | 2 | 150 |
| 10 | - | C-015 | <p>Write Archeological Overview and Assessment
 Only 14 archeological sites (almost all of which are Giddings' Arctic Woodland sites) are listed in the State of Alaska's AHRS database; all but one site are located along the banks of the Kobuk River. The NPS has funded NO significant effort to identify and document cultural resources in KOVA since the park was created fourteen years ago and as a result, KOVA's Cultural Sites Inventory IS the AHRS database. At this time, given the paucity of data, an Overview and Assessment would not significantly add to the narratives and project statements in the KOVA RMP. Only following completion of some of the proposed CRPP and SAIP projects, which will contribute new data for vast and completely uninvestigated tracts, should an Overview and Assessment be attempted.</p> | 2 | 97 |

LACL					
3	2	C-14	Map Kijik Archeological District	3	155
			This National historic Landmark and National Register Archeological District needs thorough documentation. By means of aerial photographic coverage, photogrammetric contour mapping will yield topographic maps with 1m contour intervals, at a general accuracy level of 1" = 200'. Supplemental contours, at 0.5m intervals, will be generated within the boundaries of known archeological sites. Following completion of the mapping portion of the project, archeological analysis, using the maps, GIS, and other available data sets, will be conducted. The analysis will address such issues as site condition, site location, settlement patterning, and predictive modeling.		
7	-	C-07	Conduct Landscape Development and Paleocological Studies	4	280
			These studies will be necessary to properly evaluate the environmental records contained in the archeological sites within the park and preserve and to provide the proper context for the interpretation of those sites. The first product from this project would be an overview and assessment of the paleocological and geological resources within the park and preserve boundaries. Other priorities for study and research would be: -- preparation of a series of Quaternary surficial deposit maps for the entire park and preserve -- development of a comprehensive stratigraphic , chronologic, and geochemical database of volcanic ashes -- survey of selected lakes to determine the range of chemical and physical limnological characteristics represented -- dendrochronology for the establishment of a fine-grained chronology for the region and for investigation of paleoclimatic change		
8	-	C-08	Archeological Identification and Evaluation Study	5	798
			A multi-year and multi-stage program of intensive inventory and evaluation, based on the Archeological Overview and Assessment, will be undertaken. The park/preserve will be divided into relatively homogeneous geographic sections; site location models (nonstatistical) would be generated for each area; and then each model would be tested through fieldwork. Sites would be recorded and evaluated for National Register eligibility. Due to the large size of LACL (3,643,000 acres) and relatively little archeological survey that has been done, it is anticipated that this project will take five or more years. The first priority will be the production of a professional research design that will be peer-reviewed.		
NOAT					
1	-	C-005.001	Ethno-archeology Nuaraarmiut Homeland	5	300
			The Nuataarmiut occupied the Noatak drainage from the Noatak Canyon to the Aniak River in the 19th Century. The descendants of the Nuataarmiut now live in Noatak, outside the Preserve. As recently as the 1930s, Nuataarmiut tried to re-occupy their homeland but today Noatakers only travel to the upper Noatak to harvest traditional resources in traditional harvesting areas. Former village and cache locations and gravesites are still known. At the turn of the century, winter settlements were mostly located near the main channel of the Noatak and today's recreationists pose a potential treat to the integrity of the tangible remains of the former		

Nuataarmiut lifeway. Identified cultural sites will be ground truthed and the presence of archeological resources will be documented. The ever fewer knowledgeable Elders will be queried and their observations and associations regarding confirmed cultural resource physical remains will be systematically recorded.

- 2 - C-001 **Map and Designate Late Prehistoric Multi-Property District** 5 230
Late Prehistoric Village Sites are located on large lakes in NOAT, GAAR and in the BLM-managed NPR-A north of these parks. These villages (only about 20 such villages are known to exist) represent a unique and highly specialized cultural-ecological adaptation that seems to date from around A.D. 1200-1700 and contain deep, semi-subterranean housepits with long, deep entrance tunnels and large boulder-ringed qargi, or community houses. Probably associated with the villages are caribou drive fences (lines of inuksuks) constructed of stacked stones; some of these fences extend for over a mile. In NOAT, villages have been identified at Kaiyak, Burial, Kikitaliorak, Desperation, and Feniak lakes; in GAAR, villages have been identified at Kipmik Lake. No detailed baseline documentation of these sites has been completed. The NOAT CRPP Site Identification Study succeeded in surveying photo panel ground control points at Burial, Desperation, and Feniak Lakes and completed surface-contour maps of the villages at Desperation and Feniak lakes. Systematic feature counts are not even available for the other known villages. All of the lakes have been and continue to be used by floatplane operators and some looting (though not recent) appears to have already occurred at some of the villages. Large scale aerial photography and photogrammetric modelling of each of the known villages would provide the necessary baseline documentation for management and would be used to support NRHP listings. Fieldwork would also attempt to date the occupation of these villages. Management recommendations will also be generated and would include assessment of research and interpretation potential and control of potentially adverse activities.
- 3 - C-016 **Conduct Survey and Test Excavation - Okak & Cottonwood Units** 6 410
C-017
The Okak Study unit lies on both sides of the Noatak River upstream of the mouth of Makpik Creek. Utilizing ethnohistoric data provided by Burch, the NOAT CRPP Site Identification Study identified numerous Proto-Historic village sites along this stretch of the Noatak River. Extremely fragile cultural items, including wooden umiak and kayak frames, built-up wooden and whalebone sledges, house and storage/drying structures are obvious even to untrained persons. Detailed inventories of these sites must be completed to document and perhaps remove and conserve those decaying cultural items that are significant. A NRHP nomination should be completed for the adjacent summer and winter settlements at Okak Bend. This section of the Noatak endures significant visitation by floaters; signing or other visitor-guidance methods need to be considered and implemented to protect the Proto-Historic resources of the Okak unit. The intensity and form of management of these resources must be premised upon additional testing and analysis of these resources and assessment of their vulnerability.
- The Cottonwood Study Unit lies downstream of the Okak Unit and the NOAT CRPP Site Identification Study also located significant Late

Prehistoric and Proto-Historic resources along the Noatak River within this unit. These resources are also at risk from the inadvertent or intentional depredations of floaters but in general, are less obvious and less in peril than the sites of the Okak Unit, hence survey and test excavations should be staged in the Cottonwood Unit after work is completed for Okak.

4	-	C-021	<p>Conduct Survey and Test Excavation - Kelly Unit</p> <p>Prior archeological survey had concentrated on the southern portion of this unit. The NOAT CRPP Site Identification Study identified a multi-component archeological district of several hundred acres surrounding the lake at the headwaters of Wrench Creek. The lake used by sport hunters to access the area by floatplane. Careful mapping, testing and dating of this resource set needs to be completed preparatory to requesting a determination of eligibility for the district.</p>	4	280
5	-	C-018 C-019 C-020	<p>Survey and Test Excavation - Anisak, Nimiuktuk & Kugururok Units</p> <p>Taken together, these three units have the demonstrated potential for yielding sites pertaining to the earliest human occupations in the Western Hemisphere. Exploratory surficial geologic study supported by the NOAT CRPP Site Identification Study indicate that these three units comprised an unglaciated refugium throughout the Late Pleistocene and Early Holocene. Recent work has disclosed: fluted projectile points in the Kugururok and Nimiuktuk drainages, "Mesa-type" (dated outside the park at 10-11,000 ya) projectile points in the Anisak unit; two new assemblages in the Anisak, the younger of which is tentatively dated (AMS-C14) at 10,000 ya, and several lanceolate projectile point sites, potentially dateable, that may be Late Pleistocene or Early Holocene in age.</p> <p>Highest priority is further work in the Anisak Unit (5 years, \$500,000). Being the most remote, the Anisak Unit has sites that have never been subjected to uncontrolled scientific and amateur collecting and therefore the unit has the most promise for significantly revamping the regional chronology. The NOAT CRPP Site Identification Study has revealed dense site concentrations in the Anisak Unit spanning the last 10,000+ years; this concentration may warrant designation as a large NRHP archaeological district, especially as the cultural resources are significantly intact in comparison to other areas on the south slopes of the Brooks Range.</p>	14	1,260
6	-	C-022	<p>Conduct Survey and Test Excavation - Cutler Unit</p> <p>Cursory NOAT CRPP Site Identification Study surveys in this unit identified large blade and microblade assemblages and edge-ground, collaterally-flaked lanceolate points on upper Amakomanak Creek. Heat-fractured cherts indicate that these sites may be dateable by the AMS technique. These assemblages are thought to date to the Early Holocene or perhaps earlier. This unit was unglaciated in the Late Pleistocene but glacial dams on the Noatak River formed a glacial lake upstream of Kaluktavik Creek. In Late Pleistocene times, a marshy embayment extended up the Cutler River, forming a complex habitat suitable for human exploitation, analogous to that of the Broken Mammoth and Swan Point sites of Interior Alaska which have been dated to 11,000 ya. The Amakomanak assemblages indicate that the</p>	3	240

periphery of this embayment warrants more detailed scientific attention to provide management direction.

SITK

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| 1 | - | C-103 | <p>Conduct Ethnoarcheological Study
 This project will be part of a pre-field investigation prior to conducting a multi-year archeological field survey. Information on past subsistence activities and traditional use areas, as well as oral documentation of the known archeological sites in the park, will be obtained from Tlingit elders. The project will produce written and taped documentation that will be used to help design project C-113, a multi-year archeological field investigation</p> | 2 | 9 |
| 2 | - | C-114 | <p>Produce Archeological Overview and Assessment
 This project will compile and revise all existing information on archeological resources within the preserve, including inholdings and selected lands. It will evaluate this information and assess potential resources as well. The analysis will be done against the background of the natural environment and paleoenvironment, in order to understand the distribution of known sites and predict the location of unrecorded sites. The overview will also contain comprehensive information about the location of collections, field records, and archival sources pertaining to preserve resources.</p> | 2 | 9 |
| 3 | - | C-113 | <p>Conduct Archeological Identification and Evaluation Studies
 This project will be a three year inventory designed to archeologically survey all lands in the park that warrant such survey. The research design will take into account ethnoarcheological data collected during project C-103 and geomorphological data to determine whether or not all 107 acres of the park need to be examined archeologically. At present, it appears as much as 90% of the park will need to be examined. The research design and field work will be completed in the first two years and the analysis and report writing will be completed in the third year.</p> | 3 | 240 |

WKST

- | | | | | | |
|---|---|----------|---|---|-----|
| 1 | - | C-300.02 | <p>Conduct Archeological Inventory
 This project will use geomorphological and paleoecological studies to identify and target those areas most likely to contain prehistoric and historic archeological sites. The data from those studies, ethnohistoric studies, the Archeological Overview and Assessment, the CRMIM files, and historic resources studies, to stratify the park and preserve into more manageable survey areas and objectives. The research design will address the basic themes of cultural chronology, prehistoric technology, and prehistoric resource use. As a multi-phase and multi-year project, it will be designed in stages that allow reasonable project scheduling with many interim products (such as analysis, reports, database integration, mapping, and refinement of the research design).</p> | 5 | 775 |
| 2 | - | C-300.04 | <p>Identify 18th and 19th Century Sites
 The purpose of this project is to identify historic and protohistoric sites in the park/preserve. These sites include habitation, resource use, and trading sites, trails, as well as locations of contact and conflict with Russian and American explorers. The inventory would be based on ethnohistoric research, oral</p> | 2 | 121 |

history, and field visits with local people and elders. Documentation will include site descriptions, maps, tape recordings and transcriptions of narratives, and photographs.

3	-	C-301.00	<p>Identify Cultural Landscapes Historic mining practices dramatically changed the natural landscape in several areas of the park/preserve. As documented in the Historic Resources Study and the CRMIM program, many of these mining sites contain historical archeological values. Most of these sites need to be identified, evaluated, documented, and managed as parts of cultural landscapes. After thorough review of existing records, archival material, and oral history, field inventory and full documentation will be done wherever possible and necessary.</p>	1	40
6	-	C-300.03	<p>Develop Archeological Survey Program for Abandoned Mine Lands Approximately 400 abandoned mine sites have been identified within WRST. Since these were not active claims when the park/preserve was established, the CRMIM program did not inventory and document them. This project will extend the coverage of the CRMIM (Cultural Resources Mining Inventory and Monitoring) program to those sites and cultural landscapes.</p>	1	90
5	-	C-300.01	<p>Archeological Inventory Along Nabesna and McCarthy Roads These roads are the only two roads that provide vehicle access into WRST. Both provide primary ATV access for recreation, hunting, and to inholdings. Both roads, each over 40 miles long, will require upgrading, maintenance, gravel resources, and eventually re-routing as visitor traffic increases. At present, over 300 miles of ATV trails originate from these roads. The proposed study will encompass background research, GIS, professional research design, aerial reconnaissance, field inventory, analysis, and final report.</p>	3	180
7	-	C-302.00	<p>Research Obsidian Sources This project will research and identify possible obsidian sources within WRST, based on geological maps, geomorphological investigations, and oral history. Field investigations will include archeological survey, documentation, and collection of samples. These samples will be analyzed and their profiles established. A program to locate extant obsidian artifacts in archeological collections from the subarctic and arctic that can be traced back to these sources will be established in order to determine trade and transportation patterns.</p>	1	10
YUCH					
3	-	C-003	<p>Inventory, Evaluate and Protect Cultural Landscapes on Yukon River Based on ethnohistoric studies, oral history, and archival materials, an inventory of potential cultural landscapes and their archeological values will be done. Documentation, analysis, and evaluation will be the final phase of this project. The information will be incorporated into appropriate databases and GIS systems.</p>	3	102
5	-	C-005	<p>Conduct Survey of Coal Creek Historic District The Coal Creek Mining District was determined eligible for inclusion on the National Register of Historic Places in 1993. Critically needed is a base map</p>	2	25

of historical and archeological resources. More data is needed on historic structures, cultural landscapes, and archeological resources. This project would implement an archeological survey of the district. Four phases would produce an accurate mapping of the district; a complete inventory of the district; an evaluation study; and an Archeological Overview and Assessment of the district.

8	-	C-008	<p>Conduct Archeological Identification and Evaluation Studies Archeological survey efforts in YUCH cover only about one percent of YUCH. A continued inventory of archeological resources is called for in this project. A multi-year and multi-stage project will be done. A professional research design will be written and peer-reviewed. Emphases will be placed on 1) lowland survey and site evaluation 2) study of the erosional faces on the Yukon River 3) uplands survey, inventory and site evaluation 4) analysis, professional report, interpretive prospectus, management recommendations.</p>	3	395
9	-	C-009	<p>Paleoecological and Quaternary Geology Studies These studies are needed to develop an understanding of the landscape history, the human history, and the development of the modern plant and animal assemblages. This basic information is necessary in order to reconstruct the cultural chronology and to interpret it; by the reconstruction of the environment in which human inhabitants have existed and the natural resources upon which they depended and still depend. The studies can also guide the search for early habitation sites. The project will include a paleoecological and geological overview, a series of Quaternary surficial-deposit maps, develop a comprehensive stratigraphic, chronologic, and geochemical database on volcanic ashes occurring in YUCH, and a survey of selected lakes, ponds and other drainages for a variety of characteristics.</p>	4	395
10	-	C-010	<p>Historic Cabin & Cabin Ruin Inventory & Eval. for Arch. Components This four-year program will inventory historic sites for archeological components but the research design will be specifically oriented towards historical archeology. Regional historic contexts will be developed, and site-based intensive survey and inventory will be done. After analysis and database integration, including detailed maps, recommendations for specific historic site investigations based on problem oriented research needs will be developed.</p>	4	60
NOAT/GAAR					
1	-	C-023	<p>Upper Noatak Biosphere Reserve - 19th Century Settlement Survey The Upper Noatak River region, extending from the mouth of the Aniuk River in NOAT to the Noatak River headwaters in GAAR, has only been cursorily surveyed. In the 1960s, Hall floated the Noatak from Lake Matcharak to the Aniuk in less than a week and found no sites. Also in the 1960s, Anderson spent a week examining Nakmaktuak Pass and Nushralutak Creek which joins the Noatak in the vicinity of Lake Matcharak; he recorded no sites. The CRPP Site Identification Study of NOAT, having better logistic support and better ethnohistoric data, has located many new sites downstream of the Aniuk in areas previously examined by Hall and Anderson. The CRPP Site Identification Study of GAAR conducted no surveys of the Upper</p>	5	300

Noatak region. In 1992, the CRPP Site Identification Study of NOAT conducted two days of survey between the headwaters of Atongarak Creek and Douglas Creek and located prehistoric and historic sites and stone (landmark or caribou drive fence) cairns several miles from the river. Because of its glacial history, the Upper Noatak region above Douglas Creek has no potential for very early archeological sites.

Burch's ethnohistoric research of the area initially led him to consider the area a 'no man's land' but his current information reveals a unique history of occupation. Burch now lists the upper Noatak as part of the homeland of the Dihai Kutchin, an Athapaskan society, that was forcibly routed from the Western Brooks Range by Inupiat Eskimos in the early 19th Century. To cope with the flagging, then crashing population of the Western Arctic Caribou herd in the latter half of the 19th Century, Kobuk River Akunirmiut (whose descendants now live in Ambler, Shungnak and Kobuk, villages upriver of KOVA) moved into the Upper Noatak region.

The Upper Noatak region is popular with recreationists. Floaters travel and camp along the upper Noatak River, entering the country from Bettles and exiting through Bettles or Kotzebue.

Survey of this region will validate the ethnohistory, attempting to distinguish Inupiat and Athapaskan sites, and assess the risk of unwitting or intentional adverse impacts to sites by recreationists. Survey will be conducted from float-craft to minimize the impact of the operation on recreationists.

NOAT/BELA

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C-005.004 **Proto-Historic/Historic Archeology: Piitarmiut Homeland**

3

180

The modern village of Deering is located in the Piitarmiut homeland and village residents can trace their ancestry to this group whose demise as an independent society occurred in the early to mid 19 Century. NANA has compiled a map of traditional place-names for the area which includes Cape Espenberg and the northwestern half of BELA. None of these identified locations has been screened for physical remains. Deering's socio-political ties today are primarily with the NANA Regional Native Corporation and the Northwest Arctic Borough, thus research coordination must be effected through Kotzebue's Native organizations and leadership, while the geographic area of focus for the project is within BELA, which is administered by NPS from its Nome headquarters. NWAK-BELA co-ordination and co-operation is crucial to success. Identified cultural sites will be ground truthed and the presence of archeological resources will be documented. The ever fewer knowledgeable Elders will be queried and their observations and associations regarding confirmed cultural resource physical remains will be systematically recorded.

BIBLIOGRAPHY

- Ackerman, Robert
1964 *Prehistory in the Kuskokwim - Bristol Bay Region, SW Alaska*.
Laboratory of Anthropology No. 2. Washington State University, Pullman.
1984 Prehistory of the Asian Eskimo Zone. In *Handbook of North American
Indians, Vol 5, Arctic*, edited by David Damas. Smithsonian Institution,
Washington, D.C. pp. 106-118.
- Adovasio, J. M., J.D. Gunn, J. Donahue, and R. Stuckenrath
1978 Meadowcroft Rockshelter, 1977: An Overview. *American Antiquity*, 43(4):
632-651
- Alexander, Herbert
1969 Prehistory of the Central Brooks Range - An Archaeological Analysis.
Ph.D. Dissertation, University of Oregon. University Microfilms, Ann Arbor.
- Anderson, Douglas D.
1968a A Stone Age Campsite at the Gateway to America. *Scientific American*
Vol. 218(6): 24-33.
1968b Early Notched Point and Related Assemblages in the Western American
Arctic. Ms. on file, Department of Anthropology, Brown University.
1970a Akmak: An Early Archaeological Assemblage from Onion Portage,
Northwest Alaska. *Acta Artica*, 16. Copenhagen.
1970b Microblade Traditions in Northwestern Alaska. *Arctic Anthropology*,
7(2): 2-16.
1972 An Archaeological Survey of the Noatak Drainage, Alaska. *Arctic
Anthropology*, 9(1): 66-117.
1980 Continuity and Change in the Prehistoric Record from North Alaska. In:
Alaska Native Culture and History, edited by Yoshinobu Kotani and
William B. Workman. pp. 233-252. *Senri Ethnological Studies, No. 4*.
National Museum of Ethnology. Osaka, Japan.
1984 Prehistory of North Alaska. In *Handbook of North American Indians*,
Volume 5, Arctic, edited by David Damas. Smithsonian Institution, Washington,
D.C. pp. 94-105.
1988 Onion Portage: the Archaeology of a Stratified Site from the Kobuk River,
Northwest Alaska. *Anthropological Papers of the University of Alaska*
22(1-2).
- Antonson, Joan M. and William S. Hanable
1987 Administrative History of Sitka National Historic Park. Contract Report,
National Park Service, Alaska.

Binford, Lewis R.

1978 *Nunamiut Ethno-Archaeology*. Academic Press, New York.

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

Bowers, Peter M.

1982 The Lisburne Site: Analysis and Cultural History of a Multi-Component Lithic Workshop in the Iteriak Valley, Arctic Foothills, Northern Alaska. *Anthropological Papers of the University of Alaska* 20(1-2): 70-112.

Bryan, Alan L.

1980 The Stemmed Point Tradition: An Early Technological Tradition in Western North America. In *Anthropological Papers in Memory of Earl Swanson, Jr.*, edited by L. Harten, C. Warren, and D. Tuohy, pp. 77-107. Idaho Museum of Natural History, Pocatello.

Campbell, John M.

1961 The Tuktuk Complex of Anaktuvuk Pass. *Anthropological Papers of the University of Alaska* 9(2): 61-80.

1962 Anaktuvuk Prehistory: A Study in Environmental Adaptation. Ph. D. dissertation, Department of Anthropology, Yale University. New Haven. University Microfilms, Ann Arbor.

Campbell, John M. and Linda S. Cordell

1975 The Arctic and Subarctic. In *North America*, edited by Shirley Gorenstein, pp. 36-73. St. Martin's Press, New York.

Carley, Caroline

1981 Inventory of Cultural Resources in the Chilkoot and White Pass Units of Klondike Gold Rush National Historical Park. *Reconnaissance Report 40*. Office of Public Archaeology, University of Washington, Seattle.

Chapman, Robert M., R.L. Detterman and M.D. Mangus

1964 Geology of the Killik-Etiviluk Rivers Region, Alaska. *U.S. Geological Survey Professional Paper* 303-F.

Clark, Donald W.

1981 Prehistory of the Western Subarctic. In *Handbook of North American Indians, Volume 6, Subarctic*, edited by June Helm. Smithsonian Institution, Washington D.C. pp. 107-129.

1984a Some Practical Applications of Obsidian Hydration in the Subarctic. *Arctic* 37(2): 91-109.

- 1984b Prehistory of the Pacific Eskimo Region. In *Handbook of North American Indians, Volume 5, Arctic*, edited by David Damas. Smithsonian Institution, Washington D. C. pp. 136-148.
- 1992 The Archaic in the Extreme Northwest of North America. *Revista de Arqueologia Americana* 5: 71-99
- Collins, H.B.
- 1964 The Arctic and Subarctic. In *Prehistoric Man in the New World*, edited by J. D. Jennings and E. Norbeck. University of Chicago Press. pp. 85-114.
- Cook, John P.
- 1969 The Early Prehistory of Healy Lake Alaska. Ph.D. dissertation, Department of Anthropology, University of Wisconsin, Madison. University Microfilms, Ann Arbor.
- Cook, John P. and Robert McKennan
- 1970 The Athapaskan Tradition. A View From Healy Lake in the Yukon-Tanana Upland. Paper presented at the 10th annual meeting of the Northeastern Anthropological Association, Ottawa.
- Davis, Craig.W., D.C. Linck, K.M. Schoenberg, and H.M. Shields
- 1981 Slogging, Humping, and Mucking Through the NPR-A: An Archaeological Interlude. *Occasional Paper* No. 25. Anthropology and Historic Preservation, Cooperative Park Studies Unit, University of Alaska, Fairbanks.
- Davis, Stanley D.
- 1990 Prehistory of Southeastern Alaska. In *Handbook of North American Indians, Vol 7, Northwest Coast*. edited by Wayne Suttles. Smithsonian Institution, Washington D.C. pp. 197-202
- DeLaguna, Frederica
- 1972 Under Mount Saint Elias: The history and Culture of the Yakutat Tlingit. 3 Parts. *Smithsonian Contributions to Anthropology* 7. Smithsonian Institution, Washington D.C.
- Dikov, N.N.
- 1993 Asia At the Joint With America. translated by Richard Bland. Nauka, St. Petersburg. ms on file at National Park Service, Anchorage.
- Dillehay, T.D.
- 1984 A Late Ice-Age Settlement in Southern Chile. *Scientific American* 251(4): 100-109.
- 1988 How New Is the New World? *Antiquity* 62: 94-97

- 1989 A Late Pleistocene Settlement in Chile. Volume 1: A Paleoenvironment and Site Context. *Smithsonian Series in Archaeology Inquiry*. Smithsonian Institution, Washington, D.C.
- Dillehay, T.D., and M. Collins
 1988 Early Cultural Evidence from Monte Verde in Chile. *Nature* 332: 150-152.
- Dixon, E. James
 1994 *Quest For the Origins of the First Americans*. University of New Mexico. Albuquerque
- Dumond, Don E.
 1969 Towards a Prehistory of the Na-Dene. *American Anthropologist* 71: 857-863.
 1977 *The Eskimos and Aleuts*. Thames and Hudson, London.
 1980 A Chronology Of Native Alaskan Subsistence Systems. In *Alaska Native Culture and History*, edited by Yoshinobu Kotani and William Workman, pp. 23-48. *Senri Ethnological Studies No. 4*, Museum of Ethnology, Osaka.
 1982 Trends and Traditions in Alaskan Prehistory: The Place of Norton Culture. *Arctic Anthropology* 19(2): 39-51.
 1983 Alaska and the Northwest Coast. In *Ancient North Americans*, edited by Jesse D. Jennings, pp. 69-114. WH Freeman, New York.
 1984 Prehistory of the Bering Sea Region. In *Handbook of North American Indians, Volume 5, Arctic*, edited by David Damas. Smithsonian Institution, Washington, D.C. pp. 94-105
 1987 *The Eskimos and Aleuts*. Revised Edition. Thames and Hudson, London.
- Ellanna, Linda J., and Andrew Balluta
 1992 *Nuvendaitin Quht'ana: the People of Nondalton*. Smithsonian Institution, Washington D.C.
- Fladmark, K. R.
 1979 Routes: Alternative Migration corridors for Early Man in North America. *American Antiquity* 44: 55-69.
- Gal, Robert
 1982 Excavation of the Tunalik Site, Northwestern National Petroleum Reserve in Alaska. *Anthropological Papers of the University of Alaska* 20(1-2): 61-78.
- Gerlach, S. Craig and Edwin S. Hall
 1987 The View From the Hinterland: A Reconsideration of the American Paleoarctic and Post-Paleoarctic Tradition Concepts Based on Data From the Red Dog Sites. Paper presented at the 14th Annual Meeting of the Alaska Anthropological Association, Fairbanks.

Giddings, James Louis

1952 *The Arctic Woodland Culture of the Kobuk River*. Museum Monographs, The University Museum, University of Pennsylvania.

1964 *The Archeology of Cape Denbigh*. Brown University Press, Providence.

Giddings, James Louis and Douglas Anderson

1986 Beach Ridge Archeology of Cape Krusenstern: Eskimo and Pre-Eskimo Settlements Around Kotzebue Sound, Alaska. *Publications in Archeology* 20. National Park Service, Washington, D.C.

Griffin, Kristen

1988 An Overview and Assessment of Prehistoric Archaeological Resources, Yukon-Charley Rivers National Preserve, Alaska. *Research/Resources Management Report AR-15*. National Park Service, Alaska.

1990 An Overview and Assessment of Archeological Resources, Denali National Park and Preserve, Alaska. *Research/Resources Management Report AR-16*. National Park Service, Alaska.

Gudgel-Holmes, Dianne

1991 Native Place Names of the Kantishna Drainage, Alaska. U.S. National Park Service. PX-9700-8-1067. National Park Service, Alaska Office, Anchorage.

Guthrie, R. Dale.

1982 Mammals of the Mammoth Steppe as Paleoenvironmental Indicators. In *Paleoecology of Beringia*, edited by D.M. Hopkins, J.V. Matthews, C.E. Schweger, and S.B. Young. Academic Press, New York. pp. 307-326.

1983 Composite Bone-Stone Tool Reproduction and Testing. In *Dry Creek, Archaeology and Paleoecology of a Late Pleistocene Hunting Camp*, by R. Powers, D. Guthrie, and J. Hoffecker, pp. 348-374. Report submitted to the National Park Service, Anchorage. Contract CX-9000-7-0047.

Hall, Edwin S.

1974 Archaeological Investigations in the Noatak River Valley. In *The Environment of the Noatak River Basin, Alaska*, edited by S.B. Young. pp. 460-523. Contributions from the Center For Northern Studies No. 1, Vermont.

1975 An Archaeological Survey of Interior Northwest Alaska. *Anthropological Papers of the University of Alaska* 17(2): 13-20.

Harritt, Roger K.

1993 On the Origins and Spread of Denbigh Flint Complex Culture: A View from Kuzitrin Lake, Central Seward Peninsula. Paper presented at the 20th Annual Meeting of the Alaska Anthropological Meeting, Anchorage.

- 1994 Eskimo Prehistory on the Seward Peninsula, Alaska. *Resources Report NPS/ARORCR/CRR-93/21*. National Park Service, Alaska Region, Anchorage.
- Henn, Winfield.
1978 Archaeology on the Alaska Peninsula: the Ugashik Drainage, 1973-1975. *University of Oregon Anthropological Papers No. 14*, Eugene.
- Holmes, C.E.
1990 The Broken Mammoth Site: Its Relevance in Alaska/Yukon Prehistory. Paper presented at the annual meeting of the Canadian Archaeological Association, Whitehorse, Yukon territory.
- Hopkins, David M.
1967 *The Bering Land Bridge*. Stanford University Press, Stanford.
- Hopkins, D.M., J.V. Matthews, C.E. Schweger, and S.B. Young, (Editors)
1982 *Paleoecology of Beringia*. Academic Press, New York.
- Irving, William N.
1964 Punyik Point and the Arctic Small Tool Tradition. Ph.D. dissertation, University of Wisconsin, Madison. University Microfilms no. 64-10247.
1971 Recent Early Man Research in the North. *Arctic Anthropology* 7(2): 68-82.
- King, Thomas F.
1978 *The Archeological Survey: Methods and Uses*. Heritage Conservation and Recreation Service. Washington, D.C.
- Krauss, Michael
1973 NaDene. In *Linguistics in North America. Vol 10*. edited by T. Sebeok. Mouton, The Hague, Paris. pp. 903-978.
- Krauss, Michael and Victor Golla
1980 Alaska Native Languages: Past, Present, and Future. *Alaska Native Language Center Research Papers* 4. University of Alaska, Fairbanks.
1981 Northern Athapaskan Languages. In *Handbook of North American Indians, Volume 6, Subarctic*, edited by June Helm. Smithsonian Institution, Washington D.C. pp. 67-87.
- Kunz, Michael
1982 The Mesa Site: an Early Holocene Hunting Stand in the Iteriak Valley, Northern Alaska. *Anthropological Papers of the University of Alaska* 20(1-2): 113-122.

- 1991 Cultural Resources Survey and Inventory: Gates of the Arctic National Park and Preserve, Alaska. *Research/Resources Management Report AR-18*. National Park Service, Alaska.
- Kunz, Michael L. and Richard E. Reanier
 1994 Paleoindians in Beringia: Evidence from Arctic Alaska. *Science* 263: 660-662.
- Larsen, H.
 1968 Trail Creek, Final Report on the Excavation of Two Caves at Seward Peninsula, Alaska. *Acta Arctica* 15: 7-79. Copenhagen.
- Larsen, Helge and Froelich Rainey
 1948 Ipiutak and the Arctic Whale Hunting Culture. *Anthropological Papers of the American Museum of Natural History*, Vol 42. New York.
- Lobdell, John E.
 1985 The Putuligayuk River Delta Overlook Site: Fragile Traces of Early Man at Prudhoe Bay, Beaufort Sea, Alaska. Environmental Conservation Department, Arco Alaska, Anchorage.
 1986 The Kuparuk Pingo Site: a Northern Archaic Hunting Camp of the Arctic Coastal Plain, North Alaska. *Arctic* 39(1): 47-51.
- Lynch, Alice J.
 1982 QIZHJEH: The Historic Tanaina Village of Kijik and the Kijik Archeological District. *Occasional Paper No 32*. Anthropology and Historic Preservation, Cooperative Park Study Unit, University of Alaska, Fairbanks.
- McCartney, Allen
 1984 Prehistory of the Aleutian Region. In: *Handbook of North American Indians, Vol 5, Arctic*, edited by David Damas. Smithsonian Institution, Washington D.C. pp. 119-135
- Mochanov, Iurii A.
 1973 Early Migrations to America in Light of a Study of the Dyuktai Paleolithic Culture in Northeast Asia. Paper presented at the IX International Congress of Anthropological and Ethnological Sciences, Chicago.
- Moore, John H.
 1994 Putting Anthropology Back Together Again: The Ethnogenetic Critique of Cladistic Theory. *American Anthropologist* 96(4): 925-948.

Morlan, Richard E.

1970 Wedge-Shaped Core Technology in Northern North America. *Arctic Anthropology* 7(2): 17-32

National Park Service

1988 Final Environmental Impact Statement - Wilderness Recommendation, Cape Krusenstern National Monument, Alaska. National Park Service, on file Kotzebue, Alaska.

Powers, Roger.

1983 Lithic Technology of the Dry Creek Site. In *Dry Creek, Archaeology and Paleoecology of a Late Pleistocene Alaskan Hunting Camp*, by Roger Powers, Dale Guthrie and John Hoffecker, pp. 62-181. Report submitted to the National Park Service, Anchorage. Contract CX-9000-7-0074.

Reanier, Richard E and Michael L. Kunz

1986 Obsidian Hydration Chronology. In *Cultural Resource Survey and Inventory in Gates of the Arctic National Park*, compiled by Michael L. Kunz, pp. 182-210. National Park Service, Anchorage.

Schoenberg, Kenneth M.

1979 A Re-evaluation of the Archaeology of the Utukok River, Alaska. Paper presented at the 44th Annual Meeting of the Society for American Archaeology and the Canadian Archaeology Association, Vancouver, B.C.

1985 The Archaeology of Kurupa Lake. *Research/Resources Management Report* AR-10. National Park Service, Alaska.

1993 The Post-Paleoarctic Interval In the Central Brooks Range. Paper presented at the annual meeting of the Society for American Archaeology, St. Louis.

Solecki, Ralph.

1950 Archaeology and Ecology of the Arctic Slope of Alaska. In *Annual Smithsonian Report 1950*. Smithsonian Institution, Washington, D.C. pp. 469-495.

Stanford, Dennis.

1971 Evidence of Paleo-Eskimos on the North Coast of Alaska. Paper presented at the 36th Annual Meeting of the Society for American Archaeology, Norman.

Turner, Christy

- 1994 New Dental Anthropological Observations Relevant to the Human Population System of the Greater Beringian Realm. In *Anthropology of the North Pacific Rim*, edited by W. Fitzhugh and V. Chaussonet. Smithsonian Institution, Washington, D.C.

Van Stone, James and Joan B. Townsend

- 1970 Kijik: An Historic Tanaina Indian Settlement. *Fieldiana: Anthropology* Vol 59. Field Museum of Natural History, Chicago.

West, F. Hadleigh.

- 1975 Dating the Denali Complex. *Arctic Anthropology* 12(1): 76-81.
1981 *The Archaeology of Beringia*. Columbia University Press, New York

Workman, William.

- 1974 The Cultural Significance of a Volcanic Ash Which Fell in the Upper Yukon Basin About 1400 years Ago. In: *International Conference on the Prehistory and Paleoecology of Western North America*. edited by Scott Raymond and Peter Schledermann. University of Calgary Archaeological Association, Calgary. pp. 239-261

- 1978 Prehistory of the Aishihik-Kluane Area, Southwest Yukon Territory. *National Museum of Man, Mercury Series, Archaeology Survey of Canada Paper No. 74*. National Museums of Canada, Ottawa.

Young, Steven. B.

- 1988 Beringia: An Ice Age View. In *Crossroads of Continents: Cultures of Siberia and Alaska*. edited by W. Fitzhugh and A. Crowell. pp 106 -110. Smithsonian Institution Press, Washington, D. C.

