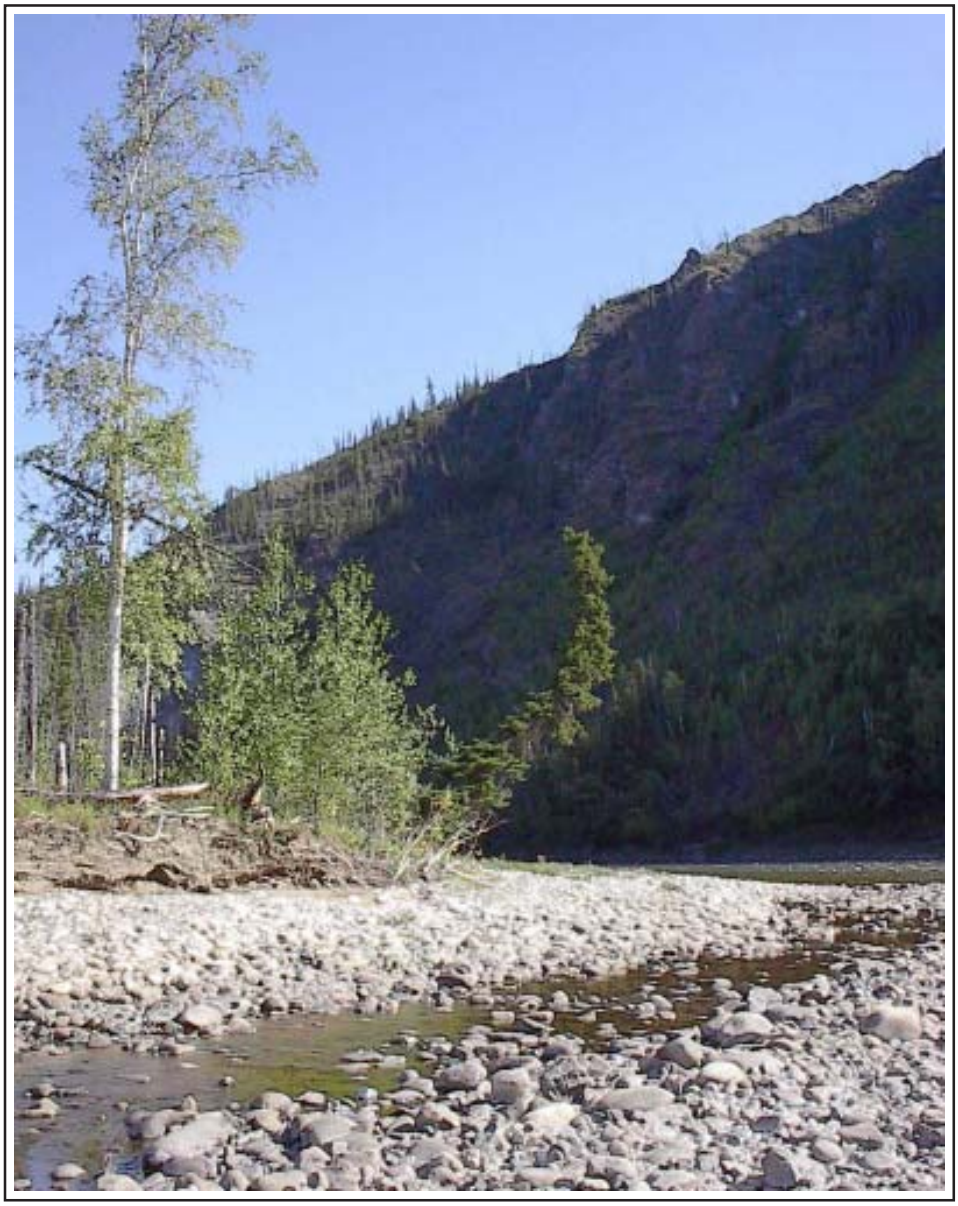
Yukon-Charley Rivers National Preserve

Annual Report 2003

National Park Service



The entire Charley River basin lies within Yukon-Charley Rivers National Preserve.

There's no music like a little river's ...
It takes the mind out of doors ...
and...sir, it quiets a man down like
saying his prayers.

Robert Louis Stevenson

A Message from the Superintendent

The year 2003 continued to be an active and successful year of accomplishments toward preserving the superlative natural and cultural resources in Yukon-Charley Rivers National Preserve. Our accomplishments help to gain public support for the protection of our country's heritage, the values and resources preserved in this remote area of the upper Yukon River in eastern Alaska. We have made significant improvements in our understanding of the area's cultural and natural resources, in the way we share this information with the public, and preservation of this important national treasure.

This year marked the completion of many years of effort in the restoration and preservation of numerous historical structures in what is now known as the Coal Creek Historical District. Over a 15-year period, without a major funding initiative, the Preserve has piece by piece fully restored most of the identified historical structures associated with mining activities within the Coal Creek drainage. Largely due to efforts of local residents of Eagle and Circle employed by Yukon-Charley Rivers National Preserve, over 20 historical structures were restored or stabilized in a manner where they will be preserved for the enjoyment, appreciation and understanding by future generations. Because of the remoteness of the area, considerable creatively was needed in planning and reconstruction of the buildings. The local staff through the years was up to the challenge and the result is an "Excellent" collection of structures that now is preserved and can be enjoyed by the public as well as used as a field operational center for the Preserve staff.

Considerable research that contributed to the planning of the work occurred concurrently with the restoration efforts. We now have detailed historical accounts of many of the activities associated with Slaven's Roadhouse, the dredge and Coal Creek mining camp as well as other sites in the area. This documentation is being used in educational materials used to further the public's understanding and appreciation of the history of the valley. Further work will be conducted next year in the historical district to improve surface access for administrative uses. In the future the restored Coal Creek camp will be used not only as an operational center for park staff but also by research and educational groups.

Research and education has improved our capability to take actions that result in better protection of the natural and cultural resources as well as provide better appreciation and enjoyment of the Preserve by visitors. We have a long history, beginning with the establishment of Yukon-Charley Rivers, in providing resource protection and visitor services from employees that reside in the small remote communities neighboring the Preserve. This on-site management has resulted in better community cooperation in protecting Preserve resources and employees that are effective in resource preservation efforts. This also provides excellent visitor safety results. This year, because of our proactive local programs, we continued our record of no significant visitor accidents within the park.

This report is organized along the outline of our Park's Strategic Plan and the structure of the Government Performance and Results Act. It links our accomplishments to park mission, long-term and annual goals and tracks measurable outcomes that allow us to determine the effectiveness of our efforts in preserving Yukon-Charley's resources unimpaired for the benefit of future generations and for the appreciation and enjoyment of present generations.

The following report highlights the dedicated efforts of the many employees, organizations and partners who have provided their resources, expertise and support in making the results identified in our strategic plan a reality.

Dave Mills
Superintendent

Purpose and Significance of Yukon-Charley Rivers National Preserve

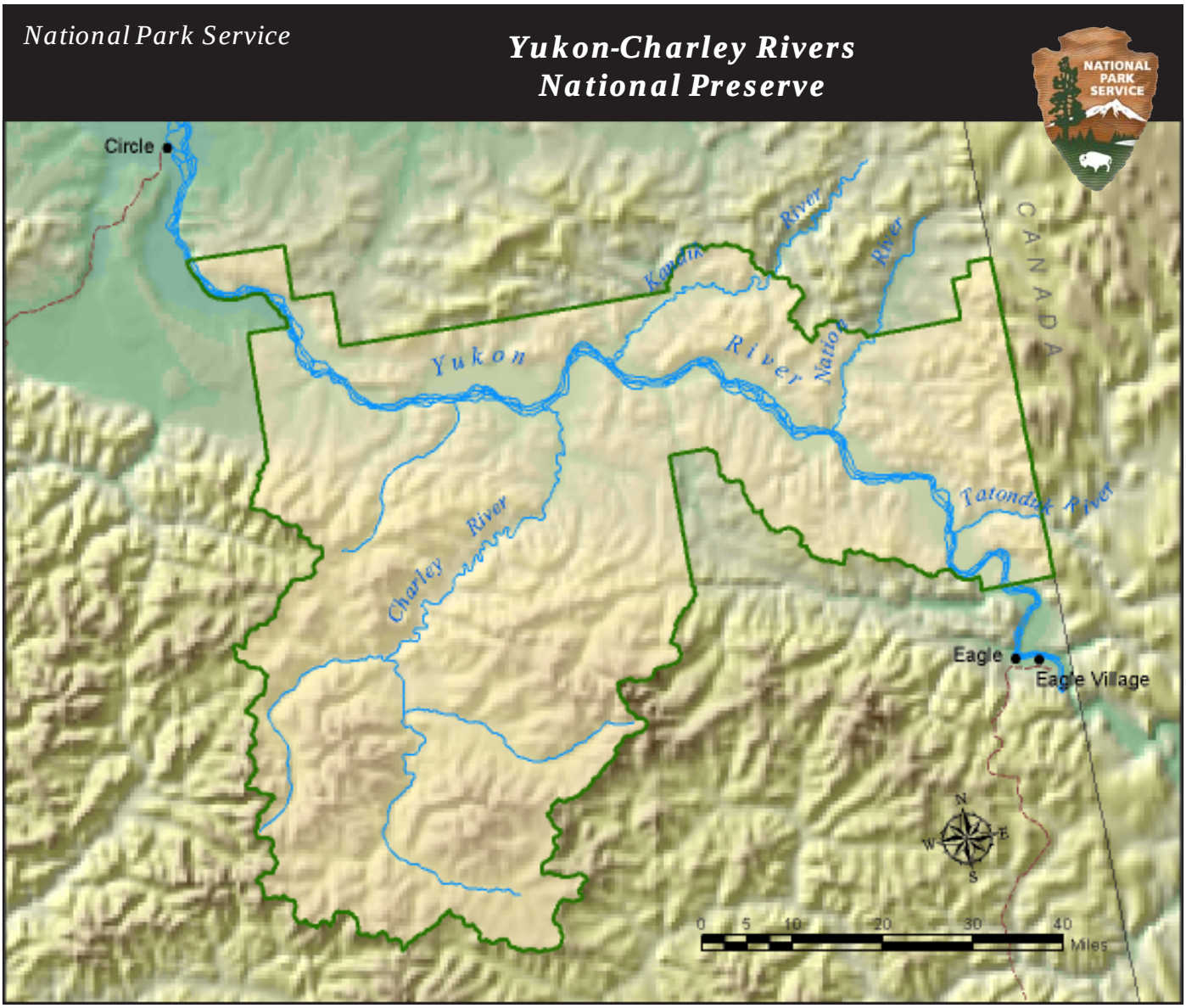
Located along the Canadian border in central Alaska, Yukon-Charley Rivers National Preserve protects 115 miles of the 1,800-mile Yukon River and the entire Charley River basin. Rustic cabins and historic sites are reminders of the importance of the Yukon River during the 1898 gold rush. Paleontological and archeological sites add much to our knowledge of the environment thousands of years ago. Peregrine falcons nest in the high bluffs overlooking the river, while the rolling hills that make up the Preserve are home to an abundant array of wildlife. The Charley, a 100-mile long wild river, is considered by many to be one of the most spectacular rivers in Alaska.

The purpose of Yukon-Charley Rivers National Preserve is to:

- Protect, conserve, and interpret the natural and cultural resources of the Preserve while allowing for appropriate human uses in a manner that provides for similar opportunities for future use and enjoyment;
- Maintain the environmental integrity of the entire Charley River basin in a natural state, to preserve intact a subarctic ecosystem, its healthy flora and fauna, as well as geologic and natural features, for public benefit and scientific study; and
- Protect and allow for the interpretation of historic sites and events along the Yukon River corridor associated with the Klondike Goldrush.

Yukon-Charley Rivers National Preserve has national and international significance:

- A world-significant assemblage of diverse geological and paleontological resources that are unusually complete are found here, providing at least a 600 million year record stretching back to the close of the Precambrian era.
- The area between the Nation, Kandik, and Yukon rivers is postulated to be a portion of the North American plate that has escaped deformation from geological forces to remain as an incredibly intact geological and paleontological record. Some of the oldest known microfossils in existence have been found in this area.
- The entire Charley River watershed is protected in its undeveloped natural condition.
- The area encompasses habitat which supports one of the highest density populations of nesting American Peregrine Falcons in the United States.
- Portions of the Han and Kutchin Athabaskan traditional homelands lie within the Preserve.
- Sites preserving activities and events of regional significance associated with the goldrush era are present and exemplified by bucket dredges, mail trails, trapper's cabins, boats, roadhouses, water ditches, and machinery.
- The Yukon River is the largest natural, free-flowing river in the National Park System.
- Large areas within the Preserve may represent an unglaciated refugium for endemic floral and faunal communities.



Yukon-Charley Rivers National Preserve lies in eastern interior Alaska, bordering Yukon Territory, Canada. The Taylor Highway will take visitors as far as Eagle, where the Preserve's field office and Visitor Center is located. Travellers into the Preserve typically float the Yukon River, or charter an airplane to fly into the upper Charley River. Visitors to Yukon-Charley Rivers are encouraged to check in at the Eagle field office to file a travel plan prior to their trip.

Within the Preserve, NPS staff maintain facilities, including a public use cabin, at Coal Creek Camp, which serves as a base for many resource projects. At Slaven's Roadhouse on the Yukon River visitors may enjoy learning about the rich mining history of the area.

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Bow of the dredge at Coal Creek.

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Preserve Resources

Mission Goal: Natural and cultural resources and associated values at Yukon-Charley Rivers National Preserve are protected, restored and maintained in good condition and managed within their broader ecosystem and cultural context.

Long-term Goal: Water Quality. By September 30, 2005, Yukon-Charley Rivers will continue to have unimpaired water quality.

Annual Goal: By September 30, 2003, Yukon-Charley Rivers will continue to have unimpaired water quality.
GOAL ACHIEVED

Aquatic Monitoring Pilot Project

During the summer of 2003 the aquatic monitoring team conducted a field study to test the feasibility of the Central Alaska Inventory and Monitoring Network (CAKN) plan to monitor aquatic ecosystems. The plan, as developed at the 2001 scoping workshop, outlines an extensive survey of both running and standing aquatic ecosystems. The aquatic monitoring protocols were developed to assess changes in productivity and community structure. The primary goal of this pilot project was to determine the feasibility of conducting this work in a reasonable and cost effective way. Yukon-Charley Rivers National Preserve was selected for this study because of the relatively easy access to a diverse array of small streams and ponds along the Yukon and Charley River corridors. The objectives of this pilot project were largely to assess, critique, and modify the protocols developed by the CAKN aquatic monitoring group. To test these protocols both streams and ponds were sampled.

The aquatic monitoring project, an extensive survey of both running and standing aquatic ecosystems, is designed to assess changes in productivity and community structure.

In late summer, we sampled 13 stream sites in the Charley River basin. At each site, a basic fish inventory and a riparian vegetation assessment were conducted. Additionally, samples were collected for laboratory analysis of core water quality parameters, macroin-vertebrate samples were collected for determination of taxonomic composition and relative abundance, and stream profiles and gradients were determined for each sampling site.

We also collected data from 9 ponds along the Yukon River in late spring and late summer. We collected 3 water samples from each lake. Each sample was analyzed for a variety of limnological characteristics including water temperature, pH, conductivity, color, alkalinity, Secchi depth (an estimator of water clarity), dissolved oxygen concentrations, total nitrogen, total phosphorus, dissolved organic compound and chlorophyll *a* (an estimator of algal biomass). Additionally, macroinvertebrate samples were collected from the littoral zone and percent cover and frequency of each plant species found in the littoral zone was determined.

Accomplishments

- Collected data on stream hydrography, water quality, riparian vegetation, fish and macroinvertebrates from 13 stream sites;
- Collected limnological, vegetation, and macroinvertebrate data from 9 ponds;
- Generated a new database to catalog all water quality information.

Above, biological technician Melanie Cook collects macroinvert-ebrates with a Hess sampler on the Charley River.

Far left, aquatic ecologist Amy Larsen measures grayling with the help of helicopter pilot Rick Swisher. At left, aquatic ecologist Amy Larsen studies macroinvertebrates.

Long-term Goal: Archeological Sites. By September 30, 2005, archeological sites will be monitored . We currently do not have a good idea on condition status and need to work toward developing a proper/creditable number.

Annual Goal: By September 30, 2003, an Archeology Site Inventory Plan will be completed for Coal Creek Camp.
ON-GOING PROJECT

Archeological Mapping of Coal Creek Mining District

Preserve cultural resource staff traveled to Coal Creek with industrial archaeology specialists from Michigan Technological Institute in June in preparation for a 2004 project that will map and describe the extensive mining features, structures, and machinery from Coal Creek. The crew accomplished preliminary GPS mapping, recorded new site areas and artifacts, and created a high quality photo record.

Right: NPS Historian Doug Beckstead holds a steam point which was used to thaw the permafrost ahead of dredging operations at the Coal Creek Historic Mining District in Yukon-Charley Rivers National Preserve. Burly young miners drove hundreds of these into the ground by hand. Standing next to Doug is Michigan Tech graduate student Larry Mishkar.
Left: Historian Beckstead sorts through connector valves that were part of the hydrolic thawing system.

Museum Collections

Yukon-Charley maintains a collection of 12,625 historical objects, photographs, archival materials, and archaeological, botanical, and paleontological specimens. These items have been collected during the course of research and management activities in the Preserve or are donations related to the cultural and natural history of park lands. The NPS aims for long term storage of these collections and to encourage their use in research and learning. Among the collections at Yukon-Charley are hundreds of prehistoric stone tools, wooly mammoth fossils, photographs of early 20th century gold mining activities, and an extensive collection of subarctic plants. Cataloging of new field collections and care of existing collections is an ongoing task—this year 57 new items were added to the collection. More at: http://www.cr.nps.gov/museum/collections/yuch.html

Sample bottles from drill tests for gold.

Historic photo of miners with mastadon tusks.

Cold water thaw point from dredging operations

Among the collections at Yukon-Charley are hundreds of prehistoric stone tools, wooly mammoth fossils, photographs of early 20th century gold mining activities, and an extensive collection of subarctic plants.

Pressed plants.

Lead seals for gold shipments.

Bottle opener.

Mission Goal: The National Park Service contributes to knowledge about natural and cultural resources and associated values; management decisions about resources and visitors are based on adequate scholarly and scientific information.

Long-term Goal: Natural Resources. By September 30, 2005, 8 natural resource inventories are completed for Yukon-Charley Rivers. Numerous Resource Inventories are planned to be completed or implemented during the period of this Strategic Plan: wilderness resource, wolves, sheep, human use including traditional subsistence activities, fire burns, natural sound, moose, neotropical birds. This goal incorporates the majority of the non-visitor related activities for the Preserve.

Annual Goal: By September 30, 2003, one additional natural resource inventory (overflights of caribou by military aircraft) will be completed, for a total of four inventories (including sheep, wolves, birds and furbearers).
GOAL ACHIEVED

GPS Technology Being Used to Study Wolves

A new kind of radiocollar is now being used in Yukon-Charley Rivers National Preserve to study the wolf population there. The new radiocollars collect GPS (Global Positioning System) locations at any rate the biologist chooses, store the locations in the collar, and then download those locations through the ARGOS satellite system to the biologist's computer via an e-mail message. The current configuration of the GPS collars on wolves in Yukon-Charley attempt to calculate a location once per day, and will download those locations once per week. With this use the batteries in the collars should last for over 3 years. Five packs of wolves in Yukon-Charley are currently being followed with this new combination of technologies and all 5 are still working well since being deployed last March. This new technology now allows the collection of over 7 times the amount location data per year per wolf pack at less than a fourth of the cost of the conventional method of locating radiocollared wolves with aircraft. This dramatic increase in the amount of location data allows far more accurate estimates of wolf density than ever before. Wolves are still located periodically with airplanes (although less frequently) so the number of wolves in each pack can be counted and other data can be collected. Plans now exist to deploy 3 more of these GPS collars in Yukon-Charley this fall. Wildlife biologists fear if these trends in technology continue, they will never be allowed to leave the office!

The new GPS radiocollar collects position data from satellites and downloads the information to the biologist's computer.

Short-Term Impacts of Military Jet Overflights on the Fortymile Caribou Herd during the Calving Season

The Fortymile Caribou Herd (FCH) is the most prominent caribou herd in interior Alaska. In recent years the FCH has been newsworthy because of efforts to restore the herd to its natural role in the ecosystem. A large portion of the FCH calving and summer range is located

The Fortymile Caribou Herd is the most prominent caribou herd in interior Alaska. A large portion of the herd's calving and summer range is located in Yukon-Charley Rivers National Preserve and lies beneath heavily used Military Operations Areas.

in Yukon-Charley Rivers National Preserve and lies beneath heavily used Military Operations Areas (MOA). Previous studies of jet overflights on other herds of caribou have shown relatively mild behavioral responses but no studies have been conducted during the calving period.

In May, 2002, a study was initiated through a cooperative effort of the National Park Service, the Alaska Department of Fish and Game, and the US Air Force. We observed the behavior of cow caribou and their calves before, during, and immediately following low-level military jet overflights. We also monitored movements of radiocollared cow caribou and survival of their calves. Fieldwork was conducted from mid May through early June 2002 and a final report, complete with caribou reaction models, was printed in January 2003.

We concluded that military jet overflights did not cause deaths of caribou calves in the FCH during the calving period or result in increased movements of cow–calf pairs over the 24-hour period following exposure to overflights. Short-term responses to over-

"Short-term responses to overflights were generally mild in comparison to caribou reactions to predators..."

flights were generally mild in comparison to caribou reactions to predators or perceived predators. Caribou responses to jet overflights were variable, but levels of response were generally higher as slant distances decreased and jet speeds increased. A-10 jets caused less reaction than F-15s and F16s. Although short-term reactions of caribou to jet overflights were relatively mild in this study, we advise against assuming there are no long-term effects on calving caribou from jet overflights.

A-10 jets, like the one here, caused less reaction than F-15s and F16s. Although short-term reactions of caribou to jet overflights were relatively mild in this study, we advise against assuming there are no long-term effects on calving caribou from jet overflights.

Accomplishment

- Printed the final report, complete with caribou reaction models, *Short-Term Impacts of Military Jet Overflights on the Fortymile Caribou Herd during the Calving Season.* The report may be viewed on-line at http://www.state.ak.us/adfg/wildlife/wildmain.htm

Study of Dall's sheep in Military Overflight Areas

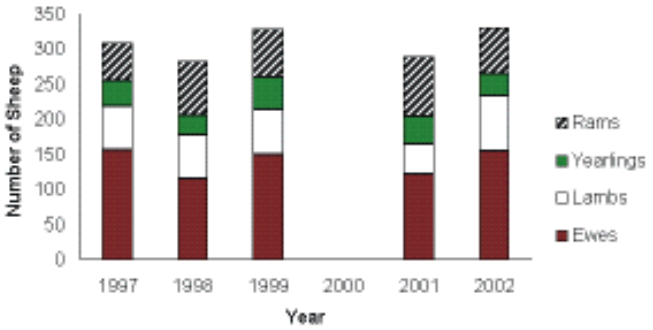
Large remote landscapes, like those found in interior Alaska, are a scarce resource, and are in demand from entities as diverse as wildlife and the United States Air Force (USAF). In 1976, large portions of the airspace in eastern Interior Alaska were designated as "special use" for military operation areas (MOAs). A portion of this airspace overlies Yukon-Charley Rivers National Preserve. Among the several mitigation measures intended to minimize the impacts of military jet overflights on people and wildlife within the MOA structure, three focus on protecting Dall's sheep.

There is no documentation of the affects of military overflights on Dall's sheep. To address this lack of information, we began investigating the potential impacts of overflights in March 1999, and assessed the effectiveness of the current mitigation measures. To evaluate the physical condition of sheep and to compare reproduction, we captured sheep from two study sites. One (Cirque Lake) is in Yukon-Charley and is overlain by mitigated airspace. The 2nd site (West Point) has no associated mitigation measures. The sheep were weighed and a blood sample was drawn to determine pregnancy. In addition to the 2 study sites, a broader data set of sheep surveys in Yukon-Charley was analyzed to look at population trends in Dall's sheep in interior Alaska MOAs.

The average age of captured sheep was similar between the two study sites. However, the annual body weights were consistently greater at West Point in comparison to Cirque Lake. Differences in weights between study areas were greatest when the study was initiated and approached parity during the final year.

Annual pregnancy rates tended to be higher at West Point in comparison to Cirque Lake but this result was not statistically significant. For both areas, pregnancy rates were substantially lower in 2000 and 2001 in comparison to 1999 and 2002.

Survival from mid March to mid January was comparable at both locations during the 4 years of this study. The pattern of survival we observed indicated that most

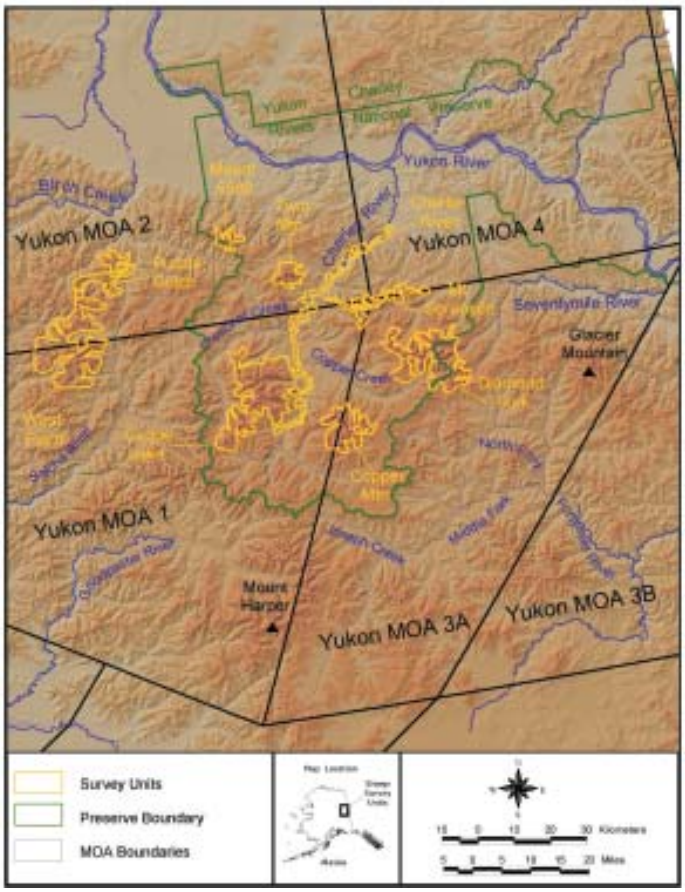


Numbers of Dall's sheep observed in 7 survey units within Yukon-Charley Rivers National Preserve during summer aerial surveys, 1997-2002. A survey was not completed in 2000 due to poor weather conditions.

deaths occur during late winter and lambing (mid March through mid June).

Sheep surveys were flown in July 1999-2002 at both study sites. Poor weather prevented the completion of the survey in 2000 and disrupted it in 2001. During this time, no differences in trends in Dall's sheep numbers within the interior Alaska MOAs were identified for either mitigated unmitigated areas. In addition, an examination of sheep populations from the wider data set of the Preserve did not indicate a significant trend, up or down, in the sheep population from 1997 to 2002 and there was little variability in the total count from year to year. Mean number of sheep observed during the 5 years of surveys was 308 animals. Mean Dall's sheep densities for all units over this time period was 0.18 sheep per km^2 of areas surveyed. The mean estimate of sheep within the Preserve was 389.

Thus, it appears that the current mitigation measure is not providing any measurable long-term advantage to sheep at Cirque Lake (mitigated) in comparison to West Point (not mitigated). Likewise, we could find no indication that current levels of military overflights are causing long-term harm to sheep in the Yukon-Tanana Uplands, as the population parameters we measured are comparable to sheep populations that are not exposed to low-level military aircraft. Future analysis of data from this study will focus on habitat selection of Dall's sheep and on behavior of Dall's sheep in relation to overflight history and sound levels.



Dall's sheep survey units in the Yukon-Tanana Uplands, eastern interior Alaska. Units were surveyed in mid-summer from 1997-2002 using a helicopter. The average number of sheep observed during the 5 years of surveys was 308 animals.

Dall's sheep at Cirque Lake in Yukon-Charley Rivers National Preserve. Low-level military flying exercises are mitigated over portions of the Preserve, including Cirque Lakes, in an effort to minimize disturbances to wildlife.

Accomplishments

- Completed all field work for this study. A draft report will be out in December 2003 and the final report is expected in 2004.
- Presented the information from this study at the Alaska Forum on the Environment, held in February in Anchorage.

Aerial Videograhic Surveys to Monitor Furbearer and Snowshoe Hare Populations

The National Park Service has teamed up with the Alaska Biological Science Center, U.S. Fish and Wildlife Service and Alaska Department of Fish and Game to develop a technique to monitor furbearer and snowshoe hare populations from snow track surveys using a digital video camera set in the belly of an airplane. The hilly terrain of Yukon-Charley Rivers National Preserve provided an ideal testing ground for preliminary fieldwork to determine optimum survey altitudes and camera settings under various lighting and snow conditions. We learned that videographic surveys 300 to 900 feet above-ground-level greatly improved precision, detection of tracks, and safety over the current technique that employs an experienced observer flying at lower altitudes. The new technique also provides GPS locations for each track, which could then be used for geospatial analysis and determining habitat relationships.

A frame from the digital video camera mounted in the belly of a Cessna 185 during an aerial videography survey showing marten tracks in Yukon-Charley Rivers National Preserve. Testing of the new methodology found that flying at an altitude of 300 to 900 feet above ground level provided good results.

In winter 2002-2003 we completed field work to develop visibility correction factors by comparing ground-based and aerial surveys. Most recently we have developed a program that has improved the efficiency of image processing and data acquisition. Manuscripts outlining survey techniques and applications are scheduled for completion in 2004. Products include species distribution maps for the Preserve, sample designs recommended for creating habitat maps and detecting population changes for different species (based on simulation analyses), and an assessment of sightability correction factors for different cover types. The final product from these efforts will be written and demonstrated protocols for the new survey technique. Using aerial videography to survey furbearer and snowshoe hare tracks over the vast areas typical of management units in Alaska will improve both the accuracy of track identification and the cost efficiency of the survey. As a result, managers will be better able to follow population trends and discern habitat use patterns.

"We learned that videographic surveys...greatly improved precision, detection of tracks, and safety..."

Accomplishments in FY2003

- Developed visibility correction factors between ground-based and aerial track surveys
- Improved the efficiency of image processing and data acquisition
- Completed an aerial track survey within Yukon-Charley Rivers

American Peregrine Falcon Surveys

The upper Yukon River, from the Alaska-Yukon Territory border to Circle, Alaska, has long been known as an area with high numbers of peregrine falcons. Excellent cliff-nesting habitat, and an abundant variety of prey species, makes this area one of the densest nesting populations of American Peregrine Falcons (*Falco peregrinus anatum*) in North America. Early in the deliberations of the Alaska Native Claims Settlement Act, the upper Yukon River was proposed to be a unit of the Fish and Wildlife Refuge System, specifically for this reason. The Fish and Wildlife Service funded a graduate project by Bob Ritchie, "A Suggested Management Approach for the Upper Yukon River," and part of his field work included surveys for peregrine falcons. Before Bob completed his thesis, someone decided the area should be a unit of the National Park Service rather than one of the Fish and Wildlife Service. Regardless of management agency, the enabling legislation for Yukon-Charley Rivers was clear: peregrine falcons and their habitat was a primary reason for creating the Preserve.

American peregrine falcons and their habitat was a primary reason for creating Yukon-Charley Rivers National Preserve. (U.S. Fish and Wildlife photo.)

Surveys as early as 1898 by Bishop and Osgood of the original United States Biological Survey noted numerous peregrine falcons along this stretch of the Yukon River. Later, in the 1960s and 1970s, researchers recorded drastic declines due to thin-shelled eggs caused by DDT. With restrictions on the use of DDT in 1972, populations throughout North America began a remarkable recovery. While we have little detailed information for peregrine falcons along the upper Yukon River prior to the use of DDT (which started in 1947), we now suspect that this local population declined to 20 to 25 percent of pre-DDT levels. Bob Ritchie observed 11 pairs in 1973, and 48 pairs were observed in 2003. During the past few years, the rate of recovery has slowed and the population appears to be stabilizing. In fact, we now regularly observe a great deal of interaction among nesting pairs, including intensive territorial disputes. Density-dependent factors now appear to be coming into play; for example, the percent of pairs that are successful has been declining in recent years. As we continue to monitor this population over the next several years, we will have the unique opportunity to follow this remarkable species from what appeared to be certain extinction to complete recovery.

The local population of American peregrine falcons in Yukon-Charley Rivers National Preserve is believed to have declined to 20-25% of pre-DDT levels. With restrictions on the use of DDT in 1972, populations throughout North America began a remarkable recovery. During the past few years in Yukon-Charley , the rate of recovery has slowed and the population appears to be stabilizing. (Photo by Mike Amaral.)

Bob Ritchie observed 11 pairs in 1973; 48 pairs were observed in 2003.

International Mammoth Conference Takes Field Trip to Yukon-Charley

In May, Yukon-Charley Rivers hosted an group of scientists attending the International Mammoth Conference in Dawson, Yukon Territory, Canada. The group included geologists, paleontologists, fossil insect and pollen specialists and archaeologists from Russia, Canada, and the U. S. Researchers have long focused on the upper Yukon River region, a world class locale for studying ice age geology and paleo-ecology, as it contains well preserved sediments and fossils from that age. A picnic and lecture was held in Eagle to allow researchers to share their findings from work in and around the Preserve. Field trip participants also traveled to geological exposures, and historical and archaeological sites within the Preserve in order to facilitate discussions about potential research projects and resource management priorities.

Left: Visiting researchers and NPS staff embark on a 2-day tour of geological, botanical and archaeological sites in the Preserve. Right: Pat Sanders (center) describes Eagle history to Russian geologist Andrei Sher (right) and Superintendent Dave Mills.

Developing Habitat Models for Birds and Moose

A pilot project to develop habitat models and maps for passerine bird species and moose in Yukon-Charley Rivers was initiated this year. Passerine bird data from a park-wide inventory, moose data from aerial surveys, and landscape variables (e.g. landcover type, slope, elevation, aspect, distance to water, etc.) generated from a geographic information system are being used to examine species-specific habitat relationships and to develop broad-scale habitat maps for the Preserve. Project results will provide: 1) information on potential limiting factors of populations, 2) species habitat maps that identify areas of high importance for fauna species, 3) baseline models and maps from which changes in species distribution relative to anthropogenic and natural changes in habitat (e.g. by fire) may be monitored, 4) a basis from which finer scale studies may be conducted, and 5) a basis from which to stratify future population surveys in order to reduce survey effort and cost.

Accomplishments:

- Prepared databases for analyses;
- Generated species habitat data using a GIS;
- Established a contract with Western EcoSystems Technology, Inc. to develop species habitat models for moose and 4 passerine bird species;
- Analysis is ongoing, and is scheduled for completion in November.

Vital Signs Monitoring

Together, Yukon-Charley Rivers National Preserve, Wrangell-St. Elias National Park and Preserve and Denali National Park and Preserve comprise the Central Alaska Network for the NPS Inventory and Monitoring program. The 2003 field season marked the final year of data collection for the biological inventories for our network. The inventory work will be finalized during 2004 with the completion of final reports.

In addition to the inventory work, the network continues to develop the Vital Signs Monitoring program. In October 2003, the network completed its Phase II Report, which outlines the conceptual framework of the monitoring program and identifies a prioritized list of vital signs. During 2004, the network will complete the remainder of the monitoring plan, providing the details of data management and operational plans.

Cultural Resources Studies in 2003

Han Gwitch'in Ethnography

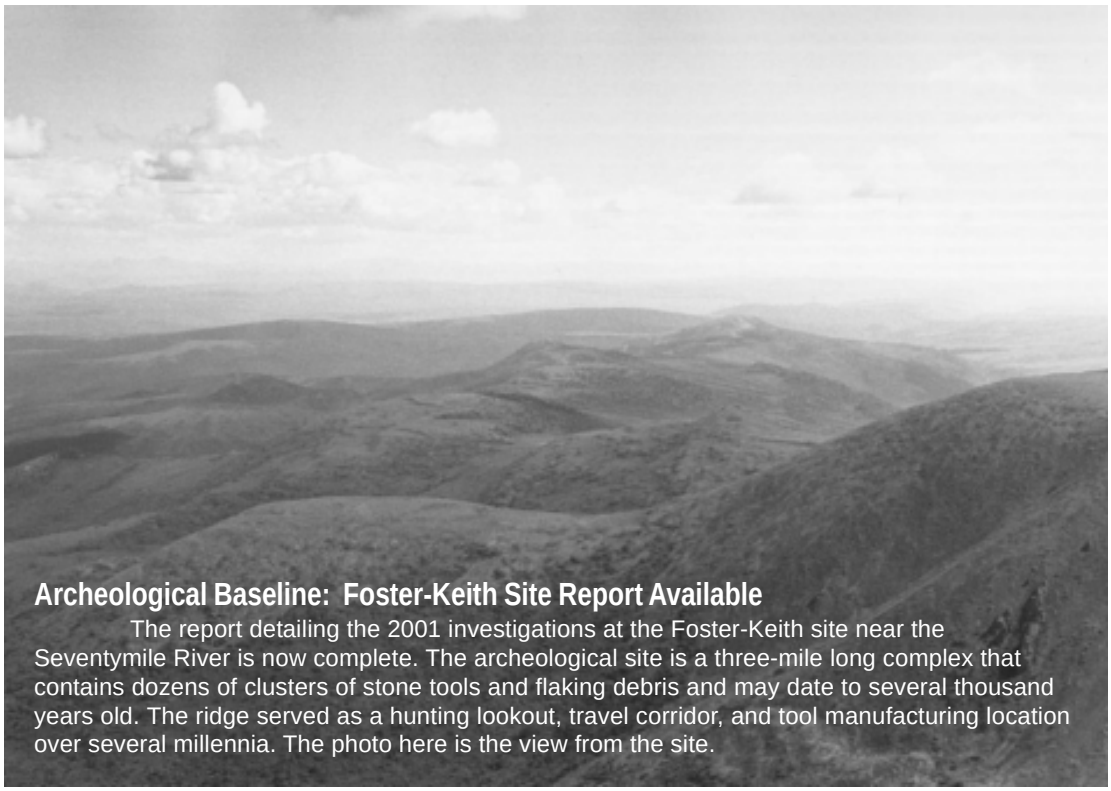
Several years ago, we sponsored Alaska Department of Fish and Game Subsistence specialists Craig Mishler and William Simeone to undertake the research and writing of an updated ethnography of the Han Gwitch'in people, principal indigenous residents of Yukon-Charley. This project traces the historical and contemporary relationships of the Han people with the Yukon River and preserve resources. The manuscript is in press with the University of Alaska Press and is due for release in January 2004.

Upper Yukon River Corridor History

Independent researcher/writer Dan O'Neill was contracted in 1999 to write a river-based travel narrative focusing on the natural and cultural history of the Upper Yukon River Corridor. O'Neill provided a draft outline to NPS in 2001, and this year (2003) O'Neill submitted the first half of the manuscript for NPS review. The final draft is now scheduled for delivery in July, 2004.

Traditional Ecological Knowledge of Upper Yukon Salmon

Cultural Resource Specialist David Krupa coordinated with the communities of Eagle, Eagle Village, Circle, and Central to develop a Fisheries Information Service (USFWS) proposal to collect traditional ecological knowledge regarding the salmon fishery of the Upper Yukon River and its tributaries. The proposal has been advanced for consideration by the Regional Advisory Councils before final determination by the Federal Subsistence Board in December, 2003.



Archeological Baseline: Foster-Keith Site Report Available

The report detailing the 2001 investigations at the Foster-Keith site near the Seventymile River is now complete. The archeological site is a three-mile long complex that contains dozens of clusters of stone tools and flaking debris and may date to several thousand years old. The ridge served as a hunting lookout, travel corridor, and tool manufacturing location over several millennia. The photo here is the view from the site.

Landcover Mapping and Fire Management

Landcover Mapping and Fire Succession

Wildfire plays an important role in maintaining a variety of vegetation types and successional phases across the landscape. Fire, the dominant disturbance process in Yukon-Charley Rivers, has burned over a third of the Preserve since 1950. Recognizing the importance of fire on the landscape in Yukon-Charley, the Alaska Support Office (AKSO) Landcover Program wanted to develop a User's Guide for the Preserve to supplement its landcover map. The User's Guide will provide descriptions of the plant associations (all the plant species within a particular habitat) related to the ecological process and successional sequences due to fire.

During July, the Yukon-Charley fire staff worked with the AKSO Landcover Mapping Program technician, the regional fire ecologist, and Alaska Natural Heritage Program ecologists to assess different age fires across elevational gradients. Fire management staff and the Slaven's interpretive ranger were instrumental in the project's success and participated in the field work.

Over 100 sites were sampled along 14 pre-approved transects, including the successful relocation of a 20 year old permanent fire succession paired plot. At each transect, the field crews sampled all unique plant associations they encountered as well as other information. Canopy cover was estimated for each species and canopy height and strata were determined for the dominant species.

Information gained from the field work and historic data from past vegetation studies will be combined to develop the User's Guide. All ground data that is collected and accessed from historical data will be placed into a computer database. A Users Guide will be developed that provides plant association descriptions, descriptive tables, illustrative photos and successional sequences due to fire. The map and User's Guide can be expected to provide input to habitat evaluation, fire fuels modeling, as well as provide valuable baseline information about vegetation.

Forestry Technician Kristi Bulock and Regional Fire Ecologist Jennifer Allen collect vegetation and site information in a plot for the landcover mapping project in Yukon-Charley Rivers National Preserve.

Accomplishments:

- Collected data on vegetation, fire evidence and physical site descriptions from 100 sites;
- Developed layers for a geographic information system;
- Entered Yukon-Charley's historic fire effects plot data into a database.

FirePro Cabin Assessments

As identified in the Programmatic Agreement with the State Historic Preservation Office, in order to identify the sites that require protection from wildland fire, a multidisiplinary crew visited four more sites in Yukon-Charley Rivers National Preserve. This field season brought the number of total sites visited to 54. The crew's project includes documenting the structures on the site including architectural drawings, photographs, documentation of artifacts, and sketching a site map. There are four more sites that will be accessed from the Yukon River next summer, completing the field component of this project.

Provide for the Public Enjoyment and Visitor Experience

Mission Goal: Visitors safely enjoy and are satisfied with the availability, accessibility, diversity, and quality of park facilities, services, and appropriate recreational opportunities.

Long-term Goal: Visitor Satisfaction. By September 30, 2005, 95% of visitors to Yukon-Charley Rivers are satisfied with appropriate park facilities, services, and recreational opportunities.

Annual Goal: By September 30, 2003, 95% of Preserve visitors will be satisfied with appropriate park facilities, services, and recreational opportunities. The Preserve will utilize the Visitor Survey Cards to determine any improvements needed to increase visitor satisfaction.
GOAL ACHIEVED

Visitor Use in Yukon-Charley Rivers

Yukon-Charley Rivers continued to take a leadership role in the development and implementation of methods for gathering information about backcountry use. Most visitors to the Preserve travel by canoe, kayak, raft, powerboat or homemade craft on the Yukon and Charley Rivers. At Slaven's Roadhouse, which overlooks the Yukon River and is a frequent stop for recreational visitors, we have an ideal situation for counting visitors. Slaven's is 10 miles downstream from the Charley River confluence; boaters on both rivers pass by. This year's estimates include observations from Slaven's as well as information collected at the Preserve headquarters in Eagle. The combined information from the last three years should provide a reasonably good picture of backcountry use in the Preserve.

Visitor access also includes an airstrip at Coal Creek, and two airstrips on the Charley River. Floatplanes also can land on the Yukon River.

In addition to the natural beauty found throughout the Preserve, visitors to Slaven's have the opportunity to tour the Coal Creek Historic Mining District, including a visit to the Coal Creek Dredge and Coal Creek Camp. Visitors are welcome to explore the area on their own or take a tour with our backcountry Interpretive Ranger stationed at Slaven's Roadhouse.

Whereas only two groups came through Slaven's last year, this year four groups of Boy Scouts, two other youth groups, and three family groups enjoyed the recreational opportunities along the Yukon River at Slaven's.

Accomplishments

- Gathered visitor use information along the Yukon and Charley rivers;
- Coordinated service projects with Boy Scouts;
- Guided tours of the Coal Creek Historic District;
- Painted Slaven's Roadhouse and other buildings, cleared brush, and performed other maintenance;
- Improved Gelvin's airstrip by clearing brush and filling in ruts.

Boy Scouts, like the group here touring the Coal Creek dredge, performed service projects in Yukon-Charley Rivers, such as clearing brush around Slaven's Roadhouse, thereby improving other visitors' enjoyment of the Preserve.

Yukon Quest 2003: Recreation or Racing

The Yukon Quest International Sled Dog Race route travels through Yukon-Charley Rivers each February. This year's race tested the mettle of dogs and racers alike with temperatures ranging from a balmy 40 degrees to a bone chilling -52 degreees. Racers from around the world enjoyed hot tea, coffee and fresh meals at Slaven's Roadhouse, an official dog drop along the race route.

Two mountain bikers rode the Yukon Quest Sled Dog race course this year. The pair stayed at Slaven's to warm up and refuel themselves while they repaired their bicycles' inner tubes.

A map of the race course, designed by Fairbanks and Eagle staff, was displayed at the Eagle checkpoint and in the roadhouse. Radio communications between Eagle and Slaven's allowed the Quest headquarters to post current updates of musher progress. The staff spent a happy, though tiring time together and although one plane had an unscheduled landing on the Yukon River, the trek through Yukon-Charley Rivers was enjoyable and injury free.

Racers from around the world enjoyed hot tea, coffee and fresh meals at Slaven's Roadhouse, an official dog drop along the race route.

Along with support staff from the race, news media, Preserve staff and racers seeking shelter at the historic roadhouse, the 2003 race also had a couple of unique visitors. Two energetic young bikers were peddling their way down the Yukon River, following the race course. They had difficulty keeping their tires intact due to the extreme cold, which caused the inner tubes to freeze and break. The pair stayed at Slaven's to warm up and refuel themselves while they repaired the inner tubes. Since they still had 58 miles to travel to Circle where a re-supply of inner tubes awaited, they improvised patches out of duct tape. The hardy fellas maintained their sense of humor, however, and finished the race in Fairbanks, claiming that it was a great adventure they hoped to repeat.

Long-term Goal: Visitor Safety. By September 30, 2005, the number of Yukon-Charley Rivers visitor accidents/incidents is maintained at the FY1992-FY1996 five-year annual average of 0.

Annual Goal: By September 30, 2003, the Preserve's visitor accidents/incidents is maintained at 0.
GOAL ACHIEVED

Float Plans Received from Charley River Visitors

In an effort to provide safety information to more visitors to Yukon-Charley, staff decided to became more proactive in contacting visitors who access the backcountry through air taxi services. In 2003, Interpretation and Law Enforcement both worked on creating safety information packets to send to current air taxi services holding Incidental Business Permits (IBP). Visitors who access the preserve by airplane do not have the same opportunity to receive updated information on weather conditions or local area information as visitors who access the preserve from Eagle. Therefore, Yukon-Charley staff sent packets of information to air taxi services to distribute to every visitor accessing the preserve by airplane. Visitors were encouraged to telephone the preserve before departure to enquire about local weather and water conditions, ask questions about the area, and to file a voluntary float/backcountry plan for their safety and the benefit of their families. The packets contained information on the preserve, contact information, site specific bulletins, float/backcountry plan forms, self-addressed stamped envelopes, and instructions on how to file and close float/backcountry plans (by telephone, fax, email, or mail). Yukon-Charley received more float plans from Charley River visitors in 2003 than in previous years. This would not have been possible without the cooperation of the air taxi services. We will continue to update information packets annually and distribute them to the concessionaire and IBP holders operating within the preserve.

Ranger Coral Conway patrols the Yukon River. There were no injuries reported this year in Yukon-Charley Rivers.

Visitors were encouraged to telephone the preserve before departure to enquire about local weather and water conditions, ask questions about the area, and to file a voluntary float/ backcountry plan....

Visitors enjoy a float down the Charley River in Yukon-Charley Rivers National Preserve. More float plans were received from Charley River visitors in 2003 than in previous years.

Mission Goal: Park visitors and the general public understand and appreciate the preservation of parks and their resources for this and future generations.

Long-term Goal: Visitor Understanding and Appreciation. By September 30, 2005, 86% of Yukon-Charley Rivers visitors understand the significance of the Preserve.

Annual Goal: By September 30, 2003, 86% of the Preserve visitors will understand the significance of the Preserve. ***GOAL EXCEEDED--Returned survey forms indicate that 93% of visitors understood the Preserve's significance.***

Rockslide Hides Peregrine Hatching

Mother Nature threw a rock at the peregrine project in 2003 when a slide occurred on Eagle Bluff and destroyed the cable connecting the camera to the transmitter that allowed video capture of the American peregrine falcon's nesting cycle. The Visitor Center in Eagle had a remarkable image of the eyrie until the rock slide occurred. The site the pair chose this season was one that had not been used in previous years and was an extremely precarious site. Not visible from Eagle, the site was accessed using ropes and climbing gear to install a new camera. But the slide occurred at such time as to be hazardous to the chicks, so efforts to repair the cable were abandoned. The female laid 3 eggs this year. Watching the progress through a scope on the island across from Eagle, we were able to determine that two healthy chicks emerged. We hope to be back on line with audio and video in 2004.

A video was set up to record another hatching of American peregrine falcon eggs on Eagle Bluff. However, a rock slide broke the transmitter cable and repair efforts were abandoned so as not to harm the chicks. Two healthy chicks emerged from the eyrie this year.

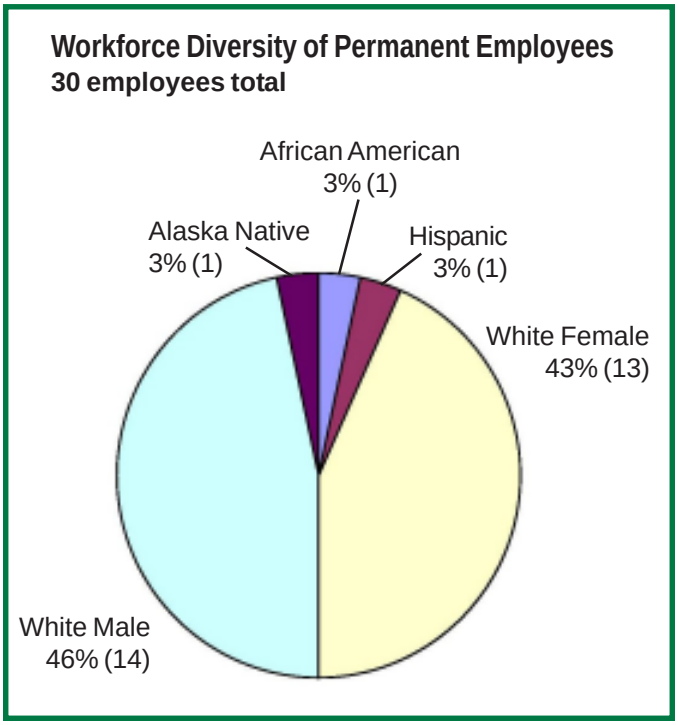
Circle Youth Wellness Camp Enjoyed by All

In July 2003, Yukon-Charley Park Rangers conducted an educational outreach program at the Circle Youth Wellness Camp. The camp, established in 2002 for the youth of Circle to learn about their Athabaskan culture and heritage. Operating as a fish camp, kids learn about subsistence fishing by helping to check the nets, prepare the salmon, and tend the smoking fire. During their 3-day stay, the rangers talked about the National Park Service and other public land management agencies, the National Park units in Alaska, Yukon-Charley Rivers National Preserve, bear awareness, fire, hypothermia, water safety, compass and map use, GPS use and job opportunities with the National Park Service and other federal agencies. The youth also earned Alaska Greatland Junior Ranger badges. We are looking forward to next year's Circle Youth Wellness Camp and the camp's planned visit to the Preserve and Eagle.

Ranger Alexandra Burke (in center with sunglasses) and participants of the Circle Youth Wellness Camp, 2003. Burke said the camp "was a great few days for both the kids and me. Not only did they learn about the Preserve but I learned quite a bit (about) their lives and culture."

Ensure Organizational Effectiveness

Mission Goal: The National Park Service uses current management practices, systems, and technologies to accomplish its mission.



Greg Moss, Chief of Operations, Eagle

Greg transferred to Yukon-Charley in July 2003 from Glen Canyon National Recreation Area. Greg has a wide range of experience in law enforcement and search and rescue after working in national parks over the past twenty years in Alaska, Hawaii, Virgin Islands, and other areas.

New Faces at Yukon-Charley Rivers

Louise Flynn, Administrative Assistant, Eagle

Lou accepted a permanent position for Yukon-Charley in October 2003. Lou, who has lived in Eagle for 30 years, also worked as an emergency hire administrative assistant this summer and has volunteered for Yukon-Charley over 10 years.

Alexandra Burke, Law Enforcement Park Ranger, Eagle

Alex transferred from Glacier National Park in April 2003 to accept her first permanent position at Yukon-Charley. A native Montanan, Alex has also worked at Lake Mead National Recreation Area and the Wind River Bear Institute in Montana working with Karelian bear dogs.

Yukon-Charley's Changing Workforce

Just a few years ago, the majority of Eagle staff were seasonal employees who worked from May through September. Now Yukon-Charley is changing the majority of positions from seasonal to permanent, subject-to-furlough. Permanent subject-to-furlough positions benefit both the employee and the employer by keeping knowledgeable employees in the workforce, keeping annual training costs down, keeping budgetary costs down when employees are on furlough, and providing employees with health and retirement benefits they would not receive in seasonal positions. In 2003, Yukon-Charley welcomed three new permanent employees: Greg Moss, the Chief of Operations, Alex Burke, park ranger in law enforcement, and Lou Flynn, administrative assistant. Yukon-Charley is now benefiting from the experience of a Chief of Operations with many years of law enforcement and search and rescue experience, two permanent interpretive park rangers to contact more visitors and present more outreach programs, and two law enforcement rangers to conduct more patrols by boat, air and foot. Next year, we hope to add a pilot and two maintenance employees to the list of permanent, subject-to-furlough positions.

Financial Summary

Operating Budget Base Allocations (ONPS) Expenditure Highlights

$410,000 for Resource Preservation and Management

Cabin site visits were completed by archaeologists and fire management team members for the establishment of a fire management plan for the Preserve. This inluded documenting cabin condition, architectural drawings, photographs, and historic background research. In addition, a winter resident bird survey was completed, testing for aerial videography furbearer monitoring techniques began, and monitoring of the Preserve's wolf packs continued.

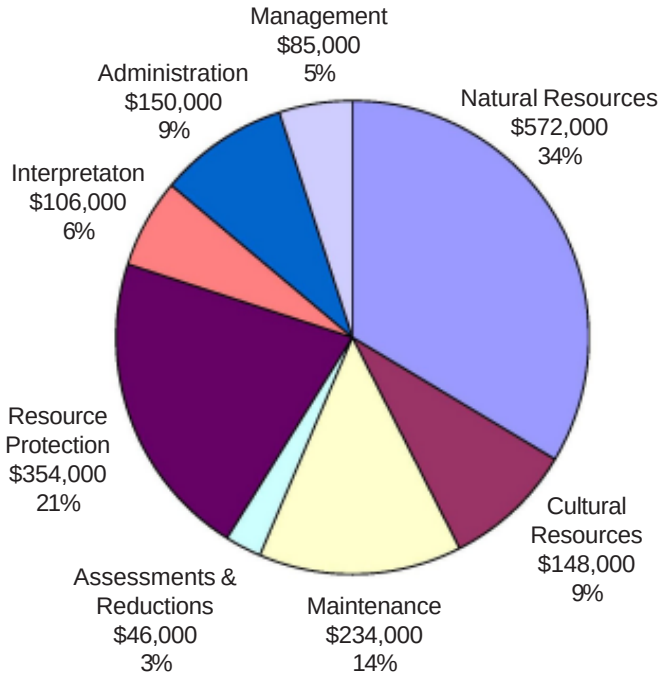
$439,000 to Address Visitor Services

The preserve received a 95% satisfaction rating, determined by the University of Idaho visitor survey program. We had no visitor accidents this year and provided a week-long outreach education program for 40 children and their teachers.

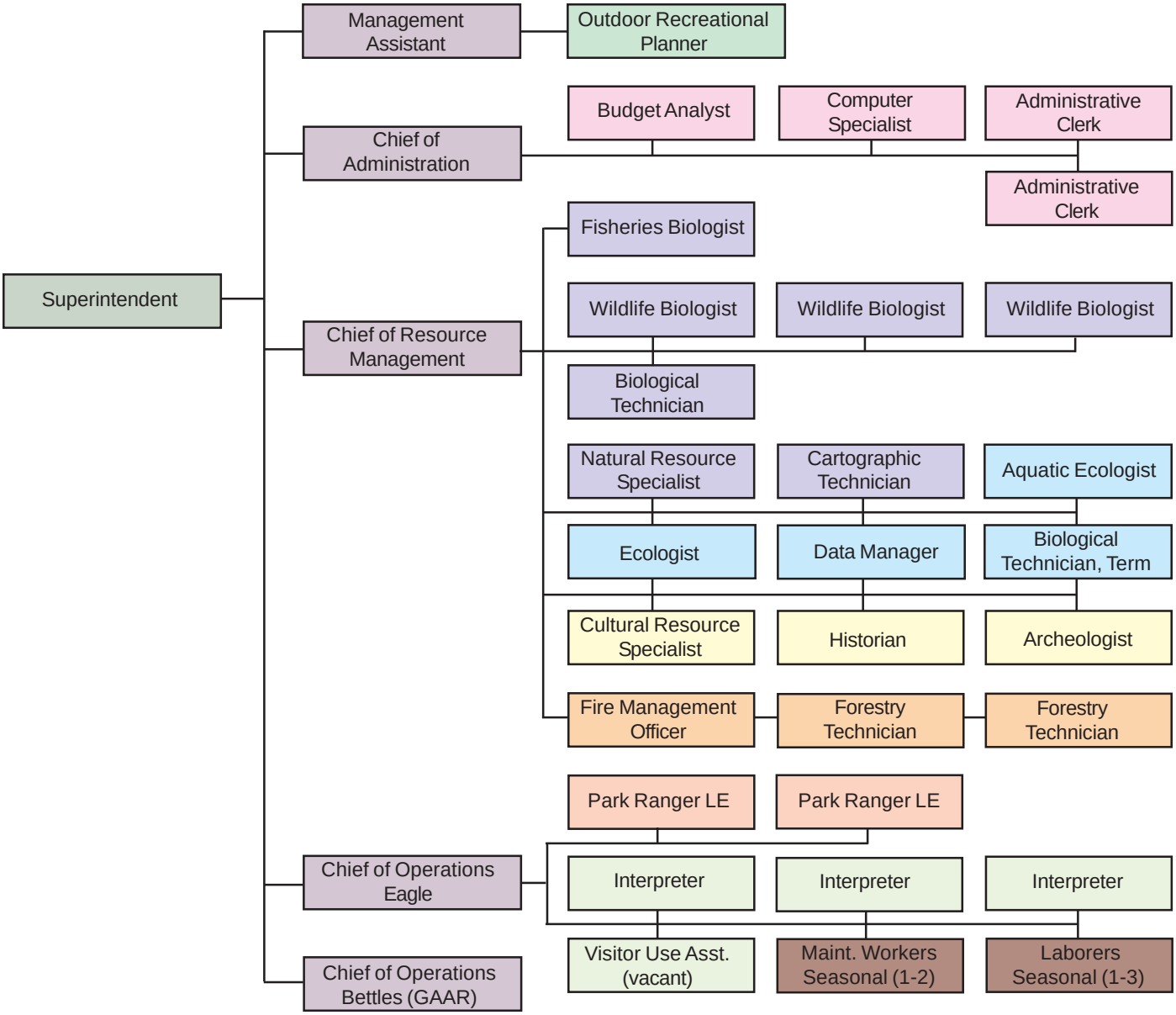
$112,000 for Facility Operations and Maintenance

Upkeep and maintenance was completed on all the Preserve's public use cabins. In addition, restoration work was completed on the historic Coal Creek Camp and a new propane generator and incinerator were purchased (and very much needed).

All Sources of Park Funding $1,695,000 total



Yukon-Charley Rivers National Preserve Organization



Note: All positions are shared with Gates of the Arctic National Park and Preserve except those under the Chief of Operations in Eagle.

Ranger Alex Burke patrols the Charley River in Yukon-Charley Rivers National Preserve.

The National Park Service cares for special places saved by the American people so that all may experience our heritage.

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