DENALI NATIONAL PARK AND PRESERVE

SUPERINTENDENTS ANNUAL REPORT
FISCAL YEAR 2006

EXECUTIVE SUMMARY

PLANNING DOCUMENTS

Backcountry Management Plan
Two long-term planning projects were finalized in 2006. The Final Backcountry Management Plan and Environmental Assessment, the result of nearly seven years of planning for the backcountry of the park, was released to the public in January. It amends the 1986 *General Management Plan* and will guide park management for the next 15-20 years on topics such as airplane landings, snowmachine use, and commercial activities.

South Denali Inplementation Plan
The second of the two planning projects is the South Denali Implementation Plan and Environmental Impact Statement. released in late April. It represents the culmination of more than ten years of cooperative planning by the National Park Service, State of Alaska and the Matanuska-Susitna Borough. In addition to a new visitor center on Curry Ridge in Denali State Park, the plan provides for new recreational opportunities in the South Denali region, including mountain and wildlife viewing, hiking, boating, and camping.

Cantwell ORV
Significant progress was made in planning for the management of the use of off road vehicles (ORVs) by federally qualified subsistence users in the new park additions near Cantwell. The preliminary alternatives were made available for public comment, and a series of community meetings were held for additional input. The draft plan is expected to be out for public comment in early 2007.

Park Road Capacity Study
Denali Park's General Management Plan, completed in 1986, set a limit of 10,512 vehicle trips annually on the Denali Park Road. This limit was based on 1984 traffic levels, allowing a 20% increase in bus travel and 45% decrease in private vehicles. Visitation to the park continues to increase and so does pressure to reevaluate traffic limits and provide a scientific rationale for those limits. Previous park road studies have suggested negative effects on wildlife from traffic on the park road; however, most of these studies were inconclusive and did not consider visitor experience or logistical constraints of traffic on the road.

CORE Operations Analysis
In fiscal year 2006 the park embarked on the Core Operations Analysis (CORE) process and integrated supervisors and employees into the process to analyze tasks and activities, and to create an awareness of new operating realities. The park hired a facilitator to train park staff in position management and assist with carrying out the CORE process. Park staff identified operational efficiencies, determined attrition rates and program elements that will be discontinued and identified potential revenue stream enhancements. The Budget Cost Projection (BCP) contains the organizational and operational efficiencies that could be implemented immediately.

The BCP reflects the budget shortfall that the park would be faced with if any of the out-year efficiencies or new revenue streams identified in the CORE process are not implemented. The collective findings and recommendations that the park staff feel can be implemented within the time frame of the plan as the needs and opportunities arise exceed the shortfall by approximately $780,000. This will give the park some flexibility, as many of the identified efficiencies cannot be implemented until a position is vacant.

Alaska Park Science Symposium
More than 150 scientists, park managers, community members, students, and educators gathered at the Denali Visitor Center and the Murie Science and Learning Center (MSLC) for the 2006 Alaska Park Science Symposium that took place September 12-14. The Symposium is a bi-annual event, hosted by a different park each time. The theme of this year's Symposium, *"Park Science in Central Alaska: Crossing Boundaries in a Changing Environment"* focused on presentations given by scientists from a variety of disciplines who conducted research in Denali, Wrangell-St. Elias National Park, Yukon-Charley Rivers National Preserve and the adjacent lands and waters of Central Alaska and the Western Yukon.

Denali park staff played a key role, along with other Central Alaska Network parks and the Regional Science Advisor, in organizing the Symposium, park logistics, and audiovisual needs (videotaping for later educational purposes, live streaming to the web).

The schedule included 50 presentations and 35 posters on topics including geology, monitoring a changing environment, landscape ecology, vertebrate ecology, profiles in history, educational strategies, evaluating the visitor experience and subsistence management. Symposium highlights included two plenary talks, "Alaskan National Parks in a Warming Climate" by Terry Chapin and "The Yukon Ice Patch Research Project" by Greg Hare. There was also a discussion by 5 panelists about "Landscape Change in Central Alaska", and a synthesis talk entitled "What Do We Know and Where Do We Go From Here?" The conference was broadcast live over the internet, allowing people from all over the country to view sessions in real time. A published Symposium Proceedings is planned in the coming year.

The symposium was the starting point for Denali's Resource Stewardship Plan planning process. A workshop to gather input was attended by over 30 people on the Friday after

the conference. Denali will be the Alaska Region's prototype park for developing these plans.

SUPERINTENDENT'S OFFICE

Staffing Changes
The Superintendent's Executive Assistant, Stacey Walker, left in the spring to take an administrative support position in the Anchorage Regional Office. Joanne Blankenship, who had worked in Denali as a seasonal interpreter for two summers, was hired on a Student Career Experience Program (SCEP) appointment to fill in, and she departed in August for her final year of law school. Meg Cicciarella from Estes Park, Colorado arrived in September to fill one of the two vacant secretary positions.

Park Road
Park road use limits and bus allocations continue to be a high priority issue, as portions of the park's bus system will likely reach capacity within the next few years. Increasing the number of buses to meet the increased needs of the tourism industry could adversely impact the quality of the park road experience and the resources that the park is tasked with protecting. A series of studies to examine the impacts of road traffic volume and patterns on vegetation, wildlife, physical resources, and the visitor experience were initiated this summer and will continue through next year. Park managers are working with other interested parties to address the issue.

Artist-in-Residence Program
2006 was the fifth year for the Artist-in-Residence at Denali. Four artists using very different mediums participated in this year's program. The artists were Eric Meyer, from Arlington Heights, Illinois; Ree Nancarrow of Denali Park, Alaska; Anna Marie Pavlik from Austin, Texas and Sandy Stolle from Seward, Alaska. They were selected from over fifty applicants by a six-person panel comprised of artists, art supporters and National Park Service staff.

Meyer is a wildlife artist who works with oils. He has painted mostly fall landscapes on his previous trips to Denali, and looked forward to expanding his work to include the lush, green landscapes of summer. He also hoped to see and paint wolves, a species that he has not depicted on canvas.

Nancarrow is a quilt artist who has lived in the Denali Park area for over forty years. She chose quilting as her medium of choice in the early 1990's because it provided an enormous variety of scale, color and texture. She dyes or paints most of her fabrics, but also stamps, stencils, silk-screens and elaborately quilts them. She was looking forward to reacquainting herself with the park and getting a feel for how to best represent it.

Pavlik creates prints by using foam plates that have been indented with pens, pointed tools or textured objects. She uses her commitment to print making to encourage others to let nature be a presence in their lives. Her residency allowed her to experience a landscape with a minimum amount of human impact and a range of terrain for the first

time. She is also interested in exploring the plant and animal adaptations that aid survival during the severe winters and short summers of Interior Alaska.

Stolle is a wood sculptor who lived in the bush of the Northwest Alaska for twelve years before relocating to the rainforest, mountains and waters of Seward a decade and a half ago. She gains inspiration from the power and beauty of Alaskan environments, and spending time in Denali offered her new vistas, experiences and a much needed time for reflection.

VIP Visits
This year's distinguished visitors included Johnnie Burton, Acting Assistant Secretary, Land and Minerals Management; University of Alaska Fairbanks Chancellor Steve Jones; Matt Hite, Congressman Don Young's Legislative Assistant; Rob Kaiser and Mark Pfundstein on Congressman Mark Souder's staff; Jarrod Thompson with the Senate Commerce committee and Michelle Cangelosi, the Executive Director for Take Pride in America.

Commercial Filming Permits
A total of 14 permits were issued this summer. The projects included two live broadcasts by Australian early news shows (similar to the Today Show or Good Morning America), scenes for a motion picture being made from the book "Into the Wild", documentaries by National Geographic, the Discovery Channel and PBS, and the ongoing large-scale project on the national parks by award-winning director Ken Burns. Most of the projects were of short, i.e. less than two days, duration, but at least one group, National Geographic, filmed for almost two weeks over the summer.

Alaska Park Science
Many Denali staff members and researchers contributed articles for the most recent volume of Alaska Park Science, which highlighted "Scientific Studies in Denali." An accompanying DVD included data sets, photos, reports and other resources.

New Facility Construction
Work began on the new Eielson Visitor Center in May. It is scheduled to be completed in 2008.

CENTER FOR RESOURCES, SCIENCE AND LEARNING

MURIE SCIENCE AND LEARNING CENTER & INTERPRETATION DIVISION

VISITOR CENTERS AND CONTACT STATIONS

Denali Visitor Center (DVC)
The first full season of operation for the new Denali Visitor Center began on May 15, 2006, and ended on September 20th with hours of 8am to 6pm. On average during peak season uniformed staff contacted over 1000 visitors daily inside the center with another 500 to 1000 exploring the displays on their own. Outside businesses seem to be realizing the opportunities available at the DVC campus and continued marketing will help to fully realize this building's potential.

Informal interpretation at the DVC took the form of talks from the Talk Box, a tool kit of ready-made programs with props that can be quickly pressed into service. Over 100 Talk Box talks were delivered to approximately 280 visitors. Visitor center staff also roved the exhibit area and campus contacting an average of 40 visitors per stroll for around 1280 contacts over the course of the summer.

The award winning film *Heartbeats of Denali* shown in the DVC auditorium on the half-hour received upwards of 75-100 visitors per showing during peak operating hours. Some showings had over 150 visitors, and the theater was maxed at 280 visitors at least once during the summer. For many visitors the film is a highlight of their stay, and they buy the retail copy offered by the Alaska Natural History Association to take home to family and friends.

Toklat River Contact Station
The temporary Toklat River Contact Station opened to the public May 27 and closed after Road Lottery on September 18. Approximately 2000 people visited daily arriving mostly on VTS or tour busses. From July to early September, West District staff sold park passes at the contact station, a first for offering this service at this location.

At Toklat, interpreters gathered visitors around the information desk or on the porch for a short talk about horns, antlers, skins and skulls. The 370 short programs offered reached 3806 visitors enjoying their short rest break off the buses.

Talkeetna Ranger Station
Though not a visitor center per se, the Talkeetna Ranger Station is a major draw to visitors exploring downtown Talkeetna. The ranger station serves as the venue for the ranger program offered by Interpretive staff nightly throughout the 2007 season. It is also a popular place for special groups to include in their visitor to the area. In Talkeetna, staff made 1149 informal contacts with visitors, who were just stopping by to learn all about Denali.

Savage Checkstation
The Savage Checkstation ran smoothly with five staff. Over the course of the season they welcomed visitors on 4474 tour buses, 3195 visitor transportation buses, 619 lodge buses and 2824 private vehicles. Staff also gave Savage Campground programs two nights per week.

Winter Visitor Center
It was the second season of operation for the winter visitor center, located at the Murie Science and Learning Center. Initial hours of 10 a.m. to 4 p.m. were extended to 8 a.m. to 4 p.m.

Murie Science and Learning Center
Throughout FY06, the park continued to work with park partners to grow the capacity of the MSLC. This year saw the further development and refinement of operations, including facility coordination, IT systems, policies, dining room menus, and facility use by researchers. Researchers associated with the park road study and avian flu monitoring were based out of the MSLC building and used the field camp at times. Two geology interns used office space throughout the summer.

Staff from the Alaska Natural History Institutes, who operate under the MSLC name, staffed the information desk throughout the summer season, provided educational programming and display development. The park partnered with the Denali Borough School District to share an MSLC IT person, who facilitated a myriad of IT needs for educators and researchers.

Volunteer Program
Each year the park receives funding to facilitate volunteer projects that help Denali protect resources and improve the visitor's experience. Last year 357 volunteers donated over 35,000 hours park wide. Examples of successful volunteer projects include Talkeetna Mountaineer Patrols, Denali Borough School to Work Program, Vegetation Management and the Kennels Program. Volunteers also donated their time to staff information desks, host at campgrounds perform trail maintenance and conduct backcountry patrols.

INTERPRETIVE PROGRAMING

Campground Programs
Compared to recent summers past, it was cool and wet throughout the season, which challenged folks to leave the comfort of their tents and RVs to join the ranger for an outdoor evening program. Despite a consistent nightly schedule in most campgrounds, overall attendance numbers were down from 2005.

East District staff offered campground programs nightly at the Riley Creek and Savage Campgrounds. The Riley Creek program drew an average of 20 visitors per night with

95 programs offered throughout the season. The 86 programs offered at Savage drew an average of 19 visitors.

West District staff provided campground programs on alternating nights at the Teklanika and Wonder Lake Campgrounds from June 9 – September 12. This amounted to 1274 visitors attending the 40 programs offered at Teklanika and 1155 campers braving the mosquitoes to attend the 41 programs offered at Wonder Lake.

Talkeetna Evening Talks
Nightly throughout the summer, interpretive staff offered programs on winter adaptations and wildlife sleuthing skills to Talkeetna area visitors. Regularly scheduled offerings increased attendance of FY05 with 1142 visitors choosing to take advantage of these free programs.

Talkeetna Museum Program
Memorial Day through Labor Day, park interpreters offered programs daily at the Talkeetna Historical Society Museum. Using the impressive Bradford Washburn model of Mt. McKinley and its surrounding environs, the talks focused mostly on mountaineering and glaciers. Attendance: 3646

Ranger-led Walks
East District staff offered three ranger-led walks daily from June through August, with two hikes daily during the shoulder season. We offered 103 hikes to Horseshoe Lake with an average of 15 visitors per hike. Interpretive rangers guided 102 walks (average of 10 visitors/hike) along the new Meadow View trail, which provides a nice loop walk from the visitor center. The evening hike to Mount Healy was offered 55 times with an average of 8 visitors, who wished to gain some elevation and take in the view of the entrance area.

Winter Ranger-led Hikes
From mid-February to mid-April, visitor center staff offered weekend snowshoe hikes using various entrance area trails. Of the 123 hike participants, numerous said that they came to the park specifically for that event.

Discovery Hikes
Interpretative staff in the East and West Districts offered 100 Discovery Hikes this season. With no more than 11 visitors plus the ranger, these off-trail hikes provide visitors the opportunity to get up close and personal with Denali's landscapes, while in the company of a knowledgeable park interpreter. Hikes become available for sign-up 48 hours in advance; hikes are most always full. For most visitors this is the first time they have hiked off-trail and/or hiked in bear country. Facilitating these experiences for visitors creates an environment that can foster deeper understanding and a greater appreciation for the park and its mission. A dedicated VTS bus for hike participants helped smooth logistics, especially for hikes offered beyond Toklat.

Dog Sled Demonstrations
Interpretive staff continued to work closely with kennels staff to offer dog sled demonstrations, a perennial favorite. Offering one program during the spring and fall shoulder seasons, the schedule grew to three programs daily June through August. With programs at 10 a.m., 2 p.m. and 4 p.m. the programs drew an average of 94, 110 and 116 visitors respectively.

This program underwent analysis by interpretive researcher Dough Knapp in 2005. The study calls for immediate interviews with audience members right after the demonstration, and periodically over the course of the next year. Preliminary data seems to indicate audiences retain a strong memory as to the purpose behind the use of dog sleds and their importance to the park, and that the demonstration actually changes the attitudes toward dog sledding in general. The full study should be published early in 2007.

EDUCATION PROGRAMS

ALISON Project
For the fourth year in a row, students from Denali Borough School District in partnership with University of Alaska, Fairbanks Professor Dr. Martin Jeffries, visited Horseshoe Lake monthly to measure and record lake ice and snow. Twenty-four fourth and fifth grade students braved snow and cold temperatures to make the 1.5 mile hike to the lake and back twice per month. The Horseshoe Lake site is one of 16 sites across the state that make up the Alaska Lake Ice and Snow Observatory Network (ALISON). Through this citizen science program students provide data that may help detect changes in the ice and snow levels throughout the state over time.

Denali Days
A newly revamped Denali Days made its debut this spring, reaching 461 elementary students from Talkeetna, Trapper Creek, Willow, Cantwell, Healy, Anderson, Nenana, McGrath and Tanana. The Denali Days curriculum now explores current research being done in the park and how curiosity leads scientists and students into a greater understanding of the world. As an extension, students from Cantwell, Healy, Anderson and Nenana followed up with visits to the park, where they spent a day with the park staff in the Teklanika and Savage areas. For students living in the Susitna Valley who are unable to visit the park, the education specialist assisted Talkeetna teachers with a field trip to Denali State Park where 39 students were guided in engaging activities to connect them to the wonders of the greater Denali ecosystem. Denali National Park concessioner Doyon/Aramark Joint Venture provided buses and drivers for the in-park portion of Denali Days.

Denali Discovery Camp
This was the sixth season for Denali Discovery Camp, the five-day, hands-on science camp offered in partnership with the Denali Foundation. Over the week, 37 kids learned

about sub-arctic ecology, the national park mission, and preservation and protection of park resources. Park resources and ranger staff taught multidisciplinary aspects of park resource protection and fieldwork. The camp includes an overnight component and students camped at Savage River, Sanctuary, Wonder Lake campgrounds and the Murie Science and Learning Center field camp for one to three nights, depending on their ages.

E-field Trips
The park teamed with Distance Learning Integrators to offer two virtual field trips to 13,486 students across 49 states. Public school, private school and home schooled students, elementary through high-school level, heard wolves howl in "Mammals of Denali: Amazing Animals of Adaptation" and saw the view atop Mt. McKinley in "Climbing Denali: The Highest Challenge.". Students take the e-field trip on-line at their classes' convenience. They are also given the opportunity to submit questions to park staff and participate in a live web chat. They also asked hundreds of questions via email, learning about such things as wildlife is wild at Denali, fences don't bind our borders, and the difference between a national park and a zoo! For the live chat, resources staff and the Talkeetna ranger staff joined the park education staff to try to answer all the kids' questions.

Terrific Tuesdays
Talkeetna education staff offered programs to local children on seven Tuesdays over the summer. Weekly offerings included a sensory scavenger hunt and bug-finding walk. A total of 52 kids turned out for these terrific days.

Denali Borough School District In-service Days and Teacher Training
Several times throughout the year, Denali's education staff showcased resources, kits and programs to 73 faculty and staff members, reaching kindergarten through twelve grade teachers from three school sites. Teachers borrowed Mammal, Water and Bird kits, and began the GeoBear outreach program as a result of this in-service presentation.

In September, park education staff and the park soundscape researcher worked with teachers to offer a weekend teacher training on soundscape monitoring and natural sound recording. Five teachers participated in the program, which included instruction by renowned natural sound recording artist, Kathy Turco. The topics of preserving natural soundscapes and how to capture high-quality natural sounds complemented one another in this well-balanced program.

Matanuska Susitna School District In-service
In the fall of 2005, Denali education staff presented park education program opportunities to 26 elementary teachers at the Matanuska Susitna School District Professional Development Day. Two teachers who attended the workshop brought students to Denali in the 2006 season.

Education Group requests
Responding to special requests from groups and teachers, park staff offered special programs to over 240 students at Talkeetna Ranger Station. Topics explored with groups

included mountaineering and glaciers, as well as programs given at the local museum. Students traveled to the ranger station from local schools in Talkeetna, Palmer, and Wasilla. Participants ran the gamut of grades elementary through high school.

More than 500 students received programmatic support during their classroom or school visit to Denali. Schools from Pennsylvania, Maryland, Minnesota, and Oregon arranged education programs at Denali as a centerpiece to studying the subarctic. Nineteen classes from Alaskan schools participated in Denali education programs. Students represented private, parochial, homeschool and public education, various rural and road system communities, and a range of ages (nine years through twenty).

FACILITATED INDEPENDENT LEARNING OPPORTUNITIES:

Denali Discovery Pack Program

The Denali Discovery Pack program features durable backpacks families can check out at no cost during their visit to Denali. Inside the backpack are numerous learning tools and activities, which are explained in the Activity Guide, also included. Over the course of the summer, families checked out 242 packs to serve 426 children. Discovery pack users represent 35 states, two US territories and nine countries. Over 25 percent of the packs were distributed to Alaskan children. A new display about the program at the Denali Visitor Center captured the attention of families and increased the demand for packs dramatically. This is the fifth season for the packs, which were initially funded through a Parks As Classroom grant.

Junior Ranger Program

More than 3000 children became Denali Junior Rangers this year. The program consists of two free activity guides aimed at ages 4-8 and 9-14. Future rangers work through the activity guides at their own pace and attend a ranger program. Once they have completed the work, candidates present their books to a staff ranger and earn a nifty badge. The world can always use another Junior Ranger!

Denali Visitor Center Scavenger Hunt

To help families explore the new Denali Visitor Center, park education staff developed two self-paced scavenger hunts for children ages 4-8 and 9-14. These ages mirror the Junior Ranger Activity Guides. The Scavenger Hunt allows families to explore the exhibits and make connections for kids. The Denali Visitor Center staff has an Answer Key that indicates where to go to find an answer in case the child (or parent) gets stumped.

PARTNERSHIP PROGRAMS

Murie Science and Learning Center (MSLC) Seminars and Teacher Trainings

The MSLC offered 17 field seminars in the 2006 season. The seminars are active learning experiences that cover a range of topics including geology, wildflowers, bird

ecology, fly-fishing, wildlife research, wolves, bears, art design and field journaling. Most courses are based out of the MSLC field camp, located within the park at Igloo Canyon at mile 34 of the park road. Many park research staff members serve as leads and content experts for the seminars. University credit is available to participants through the University of Alaska Anchorage.

The MSLC offered a teacher training in using I-Movie that was well received. But the paleoecology teacher workshop was an exciting experience.

Working with the park geologist, Denali's northside education specialists created a weekend teacher training on dinosaurs. The class, which included four teachers from around the state, was joined by paleoecologist Tony Fiorillo in their investigation of rocks of the Cantwell Formation in search of dinosaur and paleoecological evidence. Their efforts discovered the tracks of three separate dinosaur species within the park – brand new data for a story that has never been told about Interior Alaska. This important find will help piece together the story of dinosaurs in Alaska and Asia. The area of discovery has since become known as the "dinosaur dance floor". Teachers received professional development credit in addition to great bragging rights.

Experience Denali – Wildlife Tracker at Savage River
The MSLC piloted a new program this year that is designed to help visitors explore wildlife and wildlife research in Denali through science activities and radio telemetry. Participants learn about different habitats as they travel out the park road by bus to the Savage River area, where they take a short walk and participate in hands-on activities. Princess Tours chose to include this activity in a select number of their itineraries. Group size varied between 20 and 50 participants. It was offered once per week from mid-July through early September. Next year it will likely be offered four times per week.

Princess/Holland-America Tours Lobby Programs
This season the park signed agreements with both Princess and Holland-America Tours to offer ranger programs on their respective properties for park guests. Though the venues are challenging, busy places, park staff have become adept at gathering an audience. The 93 morning programs offered at the McKinley Chalets averaged 20 guests. The 93 afternoon programs offered at the Princess Hotel averaged 15 guests. Park staff will continue to work with these industry partners to improve the venue and the types of programs park staff can offer their guests.

Discover Denali
This was the second season for Discover Denali, a program developed in partnership with the Denali Foundation and offered twice weekly in the park entrance area, including the Murie Science and Learning Center. The program consists of a talk in the MSLC classroom, skins and skulls session, walk to the site of Morino's roadhouse and a ranger-introduced viewing of the new park film. Denali Foundation instructors also use historic photographs as teaching tools. Passengers receive postcards of the photos to keep. This year the program doubled in size and was offered to 3000 participants. A portion of the proceeds will go toward supporting the MSLC research program.

Discover Denali Research Fellowship Program
Using funds raised in 2005 through the Discover Denali program, the park teamed with the Denali Foundation through the Murie Science and Learning Center to develop this fellowship program that could award grants of up to $5000. In its first year, the program awarded three research grants totaling $10,997. The grants helped facilitate three new park research projects that will assist park managers in making decisions about critical issues. New studies include the following: "Detecting a deadly amphibian disease: are park visitors inadvertent vectors?"; "Water quality and the fate of antimony and arsenic in the historic Kantishna Hills Mining District, Denali National Park"; and "Effects of invasive white sweetclover on floodplain plant communities in Alaska."

As demand for the Discovery Denali program doubled in 2006, the capacity to award these grants will greatly increase for the 2007 awards. This program is extraordinary in that it facilitates both education and research; thus, achieving the two goals of the MSLC mission.

Alaska Summer Research Academy (ASRA)
Teaming with the University of Alaska Fairbanks and the Denali Foundation, park education staff worked with the Alaska Natural History Institutes to offer two ASRA modules in the park. The modules last two weeks and are designed to give high school students from around the state an opportunity to learn professional skills. Twelve students participated. Those studying seismology buried seismometers throughout the area and collected data generated. Film students created two short films. The efforts of both groups of students will be on display at the Murie Science and Learning Center. This program was made possible by a Challenge Cost Share grant.

Denali Susitna Exploration Camp
The Denali Susitna Exploration Camp had a successful second year, engaging 18 local pre-teens and teens from Willow, Trapper Creek, and Talkeetna over the course of two weeks to learn more about the local natural and cultural history. In continued partnership with Kigluait Educational Adventures, and the Upper Susitna Soil and Water Conservation District, the park education specialist helped students learn about park science and local cultural history and how it connects to the participants' roles in the responsible use and stewardship of resources. Park scientists (including the soundscape technician, fire technician, wildlife biologist and climatologist) spoke with the group in person and via video-teleconferencing equipment. Embracing the unique opportunity to use new technologies to learn and share information about the natural and cultural landscape, students spent the week collating information into a brochure that provides the community with a quest that helps the seekers to learn more about how they can live in balance with the natural world. The local youth participants' enthusiasm for learning and sharing their knowledge through the educational brochure has increases community interest in the camp, ensuring it will continue to grow in the years to come.

COMMUNITY OUTREACH

Earth Day

During the Earth Day 2006 festivities, over 270 attendees came together to share solutions for a sustainable world. Park staff, 18 volunteers, and a number of local businesses, non-profit groups, and agencies joined together to offer participants the chance to recycle, and learn more about topics such as sustainable living, water quality, and forest stewardship.

Winterfest

Interpretive staff led the park in the coordination and execution of Winterfest, held the last weekend of February. The bulk of the effort was coordinated by winter VIP Cass Ray.

Again, the park teamed with the park concessioner to use the Wilderness Access Center as a base of operations. A variety of activities radiated out from there, including ice sculpture, snow sculpture, cross-country skiing, dog sledding, winter biking, and snowshoeing.

Indoor activities featured presentations and hands-on activities. Staff from the Talkeetna Ranger Station offered a mountaineering corner for visitors. Participants could explore a mountaineering camp, see the orientation presentation given to climbers before trips on Denali, and learn about rope ascending/descending techniques. Approximately 30 children and adults participated in these interactive activities.

Denali education hosted a Kid's Corner with hands-on arts and craft activities focused on nature. Thirty children made fish prints, collages, and played games.

The Denali Foundation offered a Friday night lecture and dessert contest. The Healy Chamber of Commerce offered activities at Otto Lake and a pancake breakfast over the weekend. The big Saturday night event at the Healy Community Center featured a chili feed, home-brew contest, craft sale, contra dance and a really good time!

Science Fair

Again, the park was invited to participate in the Denali Borough School District (DBSD) Science Fair. Park education staff created a Denali National Park certificate of achievement award for a science fair entry that represented park research, park history, and park mission or management issue. Denali National Park Center for Resources, Science and Learning staff reviewed the award rubric and judged the projects for the award winner. Kindergarten through eighth grade students entered over sixty projects in the Science Fair; the Park Award went to the "Invertebrates in Local Streams" display.

Water Safety Day

It was a rainy, cool July day when more than 60 Denali Borough youngsters heard a park message about wilderness values on the shores of Otto Lake. Park education staff

worked with the Denali Borough Water Safety Program for the Second Annual Kids Water Safety Day, part of the Nenana River Wildwater Festival. Through activities, props and role playing, a gaggle of preschool through middle school kids learned how to keep a clean camp, respect wildlife, leave artifacts, and other Leave No Trace principles.

Leave No Trace (LNT) Training
The South District education specialist provided Leave No Trace training to 42 Susitna Valley High School seventh and eighth grade students before they headed to the state park for an overnight camping trip.

Intergenerational Elderhostel
Working with the Denali Foundation, Denali education staff presented a family seminar to grandparents, parents and children their first day of a week long adventure learning about the subarctic. Animal families units and survival in Denali were two of the themes of the afternoon. The nine kids acted and taught their parents and grandparents what they learned while the adults rotated through stations. The group explored subarctic geography and climate, reviewed map skills, played an interactive game representing park research and a keepsake was made.

SPECIAL PROJECTS

Depot Display Panels
In May, 2006, the park installed 24 interpretive panels at the Denali railroad dept. Developed over the past two years, the panels describe the history of the railroad and its close connection to the park over the last fifty years. This was a partnership program with the Alaska Railroad.

Denali Education Plan
In August, after several months of planning, the Interpretive staff began work on the new Denali Education Plan. The facilitator/writer team visited Denali for eight days to meet individually with stakeholders on existing conditions and get a sense of what sort of visitor experiences are offered by park and concession staff. During the team's visit, the Steering Committee/Work Group convened to work out basic structure of the document, with additional meetings held with the Visioning Group (made up of a broader circle of stakeholders) and focus group meetings in local communities. The first draft circulated for comment in early October. This plan should be completed by the 2007 summer season.

New Park Guide Series
Interpretive staff worked with the Alaska Natural History Association on a new guide series for the park. Topics include a new road guide, trail guide, backcountry guide and general interpretive guide. The new road guide was completed in time for the 2006 summer season.

Visitor Services Surveys
Interpretive staff worked with personnel from the University of Idaho to conduct a customized visitor services survey during the first week of August. The park employed two volunteers to distribute the survey to random visitors. This indepth survey will provide important feedback on everything from trail use, building amenities, interpretive information, to signage to help the park serve the public better and meet their needs. Results are expected in early 2007.

Park staff also administered the annual Visitor Service Card (VSC) survey during the month of July with a total of 400 surveys distributed. Approximately 120 surveys were returned and results indicate visitor satisfaction with park facilities and visitor services grew from 95 – 98 percent, up three percent over 2005 survey results.

Park Bulletin Boards
Division staff produced bulletin board displays at 24 sites throughout the park and in Denali State Park. Information is updated annually. Design, layout and printing is handled in-house. The large single piece displays are mounted on foam core before posting. This approach is helping to solve the issue of piecemeal postings, which are hard to maintain and amateur in appearance. On-going efforts and attention to our public displays, and a more coordinated approach to communication among divisions will lead to greater improvements in this area.

STAFF DEVELOPMENT

Program Audits
GS-07 lead interpreters conducted over 60 staff program audits over the course of the season, providing meaningful feedback to interpreters for program improvement.

Because of their high level of interpretive experience, East District staff assisted the Concessions Division by conducting audits of Tundra Wilderness Tours and Denali Natural History Tours. Interpreters gave written feedback on all aspects of the tour and offered suggestions for improvement when necessary. It was an excellent opportunity for the staff to understand more fully the role the drivers play in the visitor experience, as well as to become more familiar with aspects of the park.

Alaska Natural Resource Outdoor Education (ANROE) Conference
Together with the Alaska Natural History Institutes, the northside education specialist presented a special program to educators at the ANROE annual conference in Anchorage. The presentation highlighted Denali's education outreach, programs, strategies and focus.

Alaska Natural History Association Conference
For the first time in several years, the Acting Chief of Interpretation attended the annual ANHA conference in Anchorage. This event allows for greater communication between parks and the Alaska Region's cooperating association, and helps with planning efforts.

Interpretive Development Program Submissions
Approximately 75 percent of the division's seasonal staff submitted products for evaluation in the NPS Interpretive Development Program. This program was developed to establish national standards and provide certification for professional interpreters who meet those standards. Submissions require working closely with supervisors, video-taping programs and completing associated documentation.

STAFFING

Chief of Interpretation
The Chief position became vacant in December 2006. Through a temporary promotion, Marisa James filled the chief's shoes until August when the new chief entered on duty. Ingrid Nixon, the new chief, was the Education Coordinator at the MSLC; thus, came into the position with a bank of knowledge about the park, its players and operations.

New Hiring Tactic
For 2006 hiring, supervisory staff worked with Denali's Human Resources staff to post positions on the USAJobs website. Though this requires additional effort to rank candidates, the effort resulted in a pool of highly-motivated candidates. The hiring authority allowed flexibility that made it possible to reach individuals with experience and/or a great interest in interpretation, and was judged by all supervisors to be a vast improvement over using the SEP website.

This season seemed to reach a high water mark in terms of staff cooperation and morale. Everyone from supervisors to staff to partners were commenting on how positive and supportive the staff members were toward one another and towards those with whom they came in contact.

RESOURCES

Park Road Capacity Study
Denali Park's General Management Plan, completed in 1986, set a limit of 10,512 vehicle trips annually on the Denali Park Road. This limit was based on 1984 traffic levels, allowing a 20% increase in bus travel and 45% decrease in private vehicles. Visitation to the park continues to increase and so does pressure to reevaluate traffic limits and provide a scientific rationale for those limits. Previous park road studies have suggested negative effects on wildlife from traffic on the park road; however, most of these studies were inconclusive and did not consider visitor experience or logistical constraints of traffic on the road.

The current study is designed to allow park managers to make informed decisions about managing traffic on the road by determining the carrying capacity of the road based on traffic flow, visitor experience and wildlife movements and observations. The Denali Park Road Capacity study will continue through 2007. Depending upon the results of the

road capacity study (whether the road is found to be at-, under-, or over- capacity), two more phases of the study may occur. If the road is found to be under-capacity (can accommodate increased traffic levels and not break any traffic "rules" established to protect wildlife and visitor experience), an EIS will be written. If the selected alternative from the EIS involves an experimental increase in road traffic, a Before-After-Control-Impact study will be created. This study will experimentally increase traffic on alternating days to determine adverse impacts.

In May 2006, twenty GPS collars were successfully deployed on grizzly bears. These collars are programmed to determine the location of the bear every two hours, to store the data in the collar, and to automatically fall off the animals on September 20, 2006. Park staff will then collect the units and download the data. This winter, grizzly bear movements will be mapped in relation to the park road, habitat, the presence of other bears, season of the year, time of day, and other variables. In 2006, NPS personnel also made preliminary vehicle/wildlife observations along road, and re-deployed a system of traffic counters spaced along the road.

All VTS and tour buses have been outfitted with GPS units and two LCD touch screen panels have been installed in all buses. These panels will allow drivers to log the reason for all complete stops along the park road in order for researchers to more accurately model park road traffic. Additional information input into the panels at wildlife stops will help to create a model of wildlife encounters along the park road and potentially will help to monitor wildlife populations along the road over time. Information gathered from panels this summer is experimental and will be used to refine the software for next summer. GPS units have also been installed in ~40 NPS vehicles, including heavy equipment, ranger patrol vehicles and other NPS vehicles that spend a lot of time on the road.

Collaborators from the University of Vermont conducted 120 half-hour qualitative interviews this summer. Campers and other visitors using the VTS, Tour, and Kantishna bus systems were interviewed about their experience on the park road. These interviews will be evaluated to design a quantitative survey that will be conducted next summer.

During the summer of 2007 twenty GPS collars will be deployed on Dall sheep to look at the effects of the park road on movements, habitat use and migration. NPS personnel will conduct more vehicle/wildlife observations on the road.

Park staff will collect traffic counter, vehicle GPS and LCD panel data throughout the summer. Sunday "Quiet Night' will still be in effect, where traffic is minimized between 10 PM on Sundays and 6 AM on Mondays. We will distribute hand-held and some portable GPS units to vehicles that are not fitted with built –in units.

Quantitative visitor surveys will be administered to a representative sample of park visitors.

Research Stewardship Strategy
Denali National Park and Preserve is one of the few parks that have embarked on the process of developing a Research Stewardship Strategy (RSS). A team has been formed to organize the process of developing a RSS. Park staff provided feedback (from the perspective of a large resource park) on the RSS template document, the RSS Handbook, and the prototype Herbert Hoover National Historic Site RSS document (Midwest Region) to those who created these documents. Denali held its first public input session (a workshop for Subject Matter Experts) following the Alaska Park Science Symposium on September 15, 2006. At this workshop, researchers brainstormed what indicators and research are needed to serve as strategies to maintain or achieve Denali's desired conditions for resources.

Discover Denali Research Fellowship Program
The Discover Denali Research Fellowship Program was inaugurated in 2006. This fellowship program is made possible through proceeds from Discover Denali, an MSLC program developed in partnership between the Denali Foundation and the National Park Service. The Discover Denali program helps Royal Celebrity Tour participants learn about Denali's natural and human history.

In 2006, three Discover Denali fellowships were awarded totaling approximately $10,000. Funded projects gathered research information on the effects of white sweet clover (an exotic plant) on floodplain plant communities; whether a deadly amphibian disease was detected on wood frogs in Denali; and how water quality downstream from Kantishna Hills Mining District has been impacted by the movement of antimony and arsenic from mining activities. Fellows will complete final reports and develop an educational product within 6 months of completing fieldwork. With approximately twice as much funding available in 2007 as in 2006, it is projected that twice as many projects can be funded.

RESEARCH ADMINISTRATION

Research Permits
Twenty-two research permits were issued or renewed in 2006 using the Research Permit Reporting System (RPRS) website, after appropriate park review and compliance (PEPC). There were a total of 60 research permits active in 2006 (for a total of 782 research projects documented since the 1900's). Research topics in the park continue to be extremely diverse, including projects that are biological (e.g., arctic warbler sampling for Avian Influenza, wolves and prey, moose, vegetation monitoring, small mammal survey, neurological deficits during ascent of Denali); physical (e.g., paleontological survey focusing on dinosaur tracks in the Cantwell Formation, monitoring glaciers, a survey of shallow lakes, limnology of Wonder Lake); and cultural (e.g., park-wide archeology survey, oral history interviews).

Two documents "Information for Researchers" and "Curatorial Responsibilities of Researchers" were uploaded to the Denali website, as an interim measure until more research content could be added to the website.

Fact Sheets
Several new fact sheets about Denali's resources were created this year (Moose Survey, Alaska Park Science Symposium, Large Mammals, Central Alaska Network, and Integrated Study of Park Road Capacity, bringing to 11 the total number of fact sheets produced to share information about Denali resource topics. Regional support ($1000) enabled reprinting of several of the most popular fact sheets and the printing of the most recent fact sheet.

BIOLOGICAL RESOURCES

MAMMALS AND BIRDS

Moose
Staff conducted a moose survey in the Cantwell and Yentna areas of the park in November/December 2005. Every counting unit in the area was surveyed, so the counts represent total moose counts subject to sightability of moose from the air. 257 moose were observed in the Cantwell area. Moose density for the Cantwell area was 0.25 moose per square kilometer (0.65 moose per square mile). 41 moose were counted in the Yentna area. Moose density for the Yentna area was 0.02 moose per square kilometer (0.06 moose per square mile).

Grizzly Bears
The park continued monitoring grizzly bears on the north side of the Alaska range. Eight bears were captured in the study area in May 2006 to change or attach radio collars. Collared bears were radio-tracked from the air twice per month to determine locations and cub production and survival. Cub mortality remains high at 65% while that for yearlings is 40%. Mortality rate for adult females averages 4% per year.

As part of the Denali Park Road capacity study, 20 grizzly bears in the park road corridor were captured in May and fitted with GPS collars that determined hourly locations of the bears. The collars fell off and were retrieved in September, yielding more than 50,000 location points that will be analyzed for evidence of road and traffic effects on bear behavior. This data is also likely to provide a wealth of information on habitat use by bears in the park.

Wolves
From February through April 2006, 22 wolves from 12 packs were captured and radio-collared to maintain monitoring of packs. All wolf packs in the park and preserve north of the Alaska Range are thought to have been radio-collared for at least part of the year. During FY06, 554 locations of radio-collared wolves were obtained from aircraft, and daily locations were obtained via satellite upload from 9 wolves that wore GPS collars. In April 2006, parkwide wolf density was estimated at 6.7 wolves per 1000 square kilometers. This represents a 50% increase from the previous year. Two collared wolves were killed by humans outside of the park/preserve in FY 2006.

Monitoring – Central Alaska Network (CAKN)
DENA personnel worked with the Central Alaska Network on the design and implementation of vital signs monitoring protocols.

Passerine Birds
Data collected by the CAKN passerine monitoring project is compatible with the statewide Alaska Landbird Monitoring Program and other national passerine monitoring programs. The data from NPS Vital Signs monitoring will contribute to regional and national bird monitoring programs. The CAKN program is one of the first to rigorously test the feasibility of sampling and monitoring passerines birds on a landscape scale in large, remote areas in Alaska and is providing guidance to others who are developing similar programs and for the Alaska Landbird Monitoring System.

Golden Eagles
The protocol for monitoring reproductive success of Golden Eagles in CAKN was completed and submitted for peer review in 2004. This protocol contains a series of standard operating procedures for the project that are applicable to other NPS areas. Data from the CAKN Golden Eagle monitoring protocol is compatible with other long-term data sets on this species and is valuable for monitoring Golden Eagles across a diversity of habitats in North America. Additionally, the CAKN Golden Eagle monitoring project is currently the only long-term monitoring program for a migratory population of this species in North America. This project generates an important dataset for monitoring populations of Golden Eagles in North America.

Studies in Denali are providing some of the first estimates of survival of juveniles during critical stages of their lives, the post-fledging dependence period and the first year of independence. This information is essential for understanding population dynamics of Golden Eagles. Seventy-five golden eagle nesting territories were monitored in 2006. Of these, 85% were occupied by territorial pairs and 94% of the territorial pairs produced clutches. Reproductive success in 2006 was higher than the long-term mean; nest success was 84%, overall population productivity was 1.17, and mean brood size was 1.50.

Peregrine Falcons
Two new Peregrine Falcon nesting territories were documented in Denali in 2006, bringing the total number of documented nesting territories to seven. Reproductive success of Peregrine Falcons was documented at six territories, and eight fledglings were produced.

Caribou
Under contract, Layne Adams (USGS/BRD) began preparation of a caribou monitoring plan for the CAKN. Park staff assisted Dr. Adams with monitoring of the Denali Caribou Herd. In recent years, the herd has remained relatively stable at about 2000 animals. DENA staff also assisted CAKN staff in small mammal monitoring in the Rock Creek drainage.

Bear Management Program
The park completed another season of successfully implementing Denali's Bear Management Program. There were some incidents of property damage by bears in FY 2006, but no visitors were injured by bears.

Educational Outreach and Professional Presentations
Biological staff participated in the Denali Science Symposium, presenting papers on Grizzly bear and golden eagle ecology, a poster on the Denali Park road capacity study, and a poster on the use of GPS collars on wolves. DENA biologists also presented a paper on golden eagle biology and a poster on the road capacity study at the Wildlife Society annual meeting in Anchorage.

Staff taught "Bears of Denali" teacher training, “Wolves of Denali” and "Birds of Denali" seminars for the Denali Institute, and presented information on bear, wolf and bird research programs to park staff, bus drivers, Elderhostel, local lodge guests, and the general public. Also provided bear safety and general wildlife safety training to employees, contractors, work groups, Discovery Camp participants, concessions and local business staff.

Through a cooperative agreement with the Alaska Bird Observatory, an extensive two week field course on identifying passerine birds and using distance sampling was developed and implemented as part of the CAKN passerine monitoring project. This training course was developed to train and calibrate all observers involved in the CAKN passerine monitoring program with the goal of maintaining the highest standards when collecting data in the field. This training program is applicable across Alaska. CAKN and the Alaska Bird Observatory are providing strong leadership and guidance for ensuring high quality data collect during long-term passerine monitoring programs throughout NPS.

Results from the CAKN passerine monitoring program were presented at the annual Boreal Partners in Flight meeting.

Results from long-term Golden Eagles monitoring in Denali were presented at the annual meetings of the Raptor Research Foundation, The Wildlife Society national conference, the Alaska Park Science Symposium, and in Alaska Park Science (Volume 5, Issue 1). Additionally, presentations for the public were presented at the Anchorage Museum of History and Art and for students at the University of Alaska-Fairbanks and the Osher Lifelong Learning Institute. Three peer-reviewed papers on Golden Eagle ecology in Denali were published in the Journal of Raptor Research, Auk, and Journal of Wildlife Management.

PHYSICAL RESOURCES

BOTANY PROGRAM

Aspen Phenology Study
2006 marked the second year of the vegetation crew making detailed observation of the phenology of aspen trees in two plots located on "Government Hill" above the Park Road. Staff also analyzed the two years of observations, which showed striking variation in the timing of green up and other important phenological events in the Aspen trees in these two plots over the (quite short) span of this project. Botany staff believe that these simple observations made in the local area may yield significant information, if they are done consistently over a long period of time.

Dust Palliative Monitoring
A report detailing a complete analysis of the Dust Palliative monitoring data was finished in cooperation with ABR, Inc. an environmental consulting firm in Fairbanks. This report describes the results of the lysimeter sampling that was completed in the Fall of 2005, with methods, results and discussion of this program. The final draft of the Dust Palliative monitoring protocol was also finished and implemented in 2006. DENA staff performed a full set of lysimeter samples in accordance with the Dust Palliative monitoring protocol. These samples were successfully drawn, transported to the Lab in Fairbanks and analyzed at Analytica, Inc, laboratory for chloride concentrations. The data will be described in a new report to be prepared during FY2007.

Ecological Monitoring
2006 was the first year of "implementation" of the landscape-scale vegetation monitoring program in Denali. This work is part of the Central Alaska Network monitoring program, and was accomplished by two Denali-based crews who sampled seven mini-grid areas, installing and measuring 165 permanent vegetation plots across the Park, from the lowlands west of the Kantishna Hill to the alpine ridges around Mt. Healy. New this year was the use of Tablet PC's for entering of data directly into databases in the field. The 2006 field season was a highly successful one in Denali, with talented and hard-working staff that likely represents the largest single-season effort in vegetation sampling in the history of Denali National Park.

ORV Impact Assessment and Management:
DENA staff completed a comprehensive document describing the results of the ORV inventory project for which field work was completed in summer 2005, including GIS maps and analysis of the entire data set. In addition, park staff wrote and prepared all vegetation and wetlands sections for the Cantwell Traditional Use Area ORV Environmental Assessment document, including affected environment, impacts analysis and related sections.

Vegetation Management and Revegetation Accomplishments

Revegetation:
The revegetation program at Denali was very active again this year. Using park-collected seeds and annual rye various locations in the park were revegetated including the Denali Visitor Center Complex, hill behind the Barn, Miles 5-13 (culvert replacements) and Mile 72 of the park road and the Primrose bus turn-around..

Exotic Plant Eradication Accomplishments
We recorded twenty-four exotic plant species in 2006, out of the thirty-one exotic plant species now known to occur in the park. Two species, *Linaria vulgaris* and *Leucanthemum vulgare*, were absent from the records of exotic plants found in Denali National Park, although Roseanne Densmore (USGS/BRD) has been aware of and treated the *L. vulgare* infestation prior to this year.

Wendy Mahovlic leads the annual "Dandelion Deveg," consisting of an east-end component from Primrose to Sable Pass, and a west-end component. She has noticed that although the Deveg must start deeper into the park every year, the density of *T. officinale* in previously controlled areas has decreased considerably. The Dandelion Deveg began in early June, so it remains to be seen how much the later summer contributed to the decreased density.

Volunteers helped a great deal in controlling exotic plants, both along the Park Road and in areas with dense infestations. All together, volunteers working either in groups or individually collected 890 pounds of exotics, consisting mostly of *Taraxacum officinale*, *Crepis tectorum*, and *Melilotus alba*. During the East and West End Dandelion Deveg events, volunteers contributed to collect 225 pounds of Taraxacum officinale. In the previous year, volunteers during the same events collected 310 pounds of exotics. Wendy Mahovlic attributes the lower yields this year to both the cooler season and an overall decreased density of exotics along the Park Road. Groups of volunteers with their own leaders and vehicles were an immense help this EPMT season as they facilitated in controlling many pounds of invasive plants. This practice should be expanded to more groups over the entire summer.

Parkwide patterns of plant communities, bird communities and factors of the physical environment are being measured using a random sampling method to establish baseline data and long-term trends. In summer 2006, 131 permanent vegetation plots were installed and surveyed. Standardized 10-minute point counts for passerine birds were conducted at 211 sampling points in June 2006. Preliminary analyses of survey data suggest that the abundance of most species of passerines was similar to the last four years. Two new species of birds were added to the Denali bird checklist this year, Ruddy Duck and Mourning Dove.

Educational Outreach and Professional Presentations
Staff instructed SCA, SAGA, and TCCC (Park volunteer groups) on invasive plant identification and eradication. In addition, staff worked with and instructed local school groups and Denali Borough teachers on invasive plant identification and eradication, as well as native seed harvesting in Educational Outreach programs.

We designed, created, and presented a poster at the Denali Science Symposium describing our program of collecting and processing native seeds in Denali and instructed Camp Denali staff on how to collect, process native plant seeds for revegetation purposes.

GEOLOGY PROGRAM

Mining Claim Litigation - Administration – Restoration
Monitoring continued on mining status and mining litigation on Denali mining claims. Staff evaluated the court ordered sampling plan on the Comstock claim (US vs. Martinek) and contributed to an EA on the Comstock (Martinek) sampling plan. A bond on activities related to sampling at Comstock was estimated and developed and park staff accompanied the claimant, the claimant's mineral examiner, and the NPS mineral examiner on the excavation, opening and sampling of the Comstock claim.

Restoration work on upper Caribou Creek continued and completed the hazardous waste removal project on Glen Creek. Water sampling occurred on Slate and Caribou Creeks to evaluate stream impairment.

Field work to assess geomorphic change to the Toklat River plain was completed this year. This project will allow the park to evaluate the affect of gravel removal on river channels and morphology

Paleontology
Staff developed and refined a project field plan and initiated field methods and search tasks with paleontological interns for the Cantwell Paleontological project, as well as coordinating a field investigation of paleontologists (Fiorillo and Brandelen) for 2 week period. These two efforts resulted in the documentation of more than 70 paleontological or stratified sites, 24 theropod and 7 hadrosaur footprints found, as well as numerous bird tracks, several suspected small mammal trackways, some possible claw marks, and numerous probable plant impressions or fossil replacements. Several thousand feet of stratigraphy was measured, described and documented and. Latex molds were made of several footprints and 1 "float" footprint was removed.

Earth Science Education – Outreach & Public Relations
Geology staff prepared and presented 3 courses at the MSLC. The course topics included Nenana River Geology, General Denali Geology, and Denali Paleontology. Two multi-day high school courses on geology ad mapping were taught at Tri-Valley & Cordova High Schools.

Several staff led field trips took place over the summer including 60 participants from the Geologic Society of America (GSA) on roadside geology from Anchorage to Denali. In addition park staff sponsored a "paleontogical media day" for three TV stations from Anchorage and Fairbanks that involved a hike into the dinosaur "dance floor" on Tattler Creek.

Numerous press releases and articles were prepared on dinosaur footprint finds for National Public Radio, National Geographic, National Parks Conservation Association, and local news media.

CLIMATE AND SNOWPACK

Central Alaska Network

Annual maintenance and sensor calibrations were conducted for all of the Central Alaska Network (CAKN) climate stations during the FY2006 field season. There are 13 sites in Denali (and 7 other sites in WRST and YUCH). All data were downloaded from the data loggers on site and transferred to the Western Regional Climate Center for archiving. All of the new climate stations that have been added to the network are transmitting data via satellite and are available on the web at http://www.wrcc.dri.edu/NPS.html. Data products available on the web include daily and monthly summaries, time series graphs, wind rose graphs, data inventories, and station metadata for all automated climate stations in the park.

The Environmental Specialist at Denali worked closely with the Alaska Region National Weather Service and the NPS Fire weather RAWS program to ensure that existing stations under the two programs within the CAKN parks were operational.

In FY2006, the comments from the climate monitoring protocol and the snowpack monitoring protocol peer review were addressed, and the protocols were finalized. The climate and snowpack monitoring programs for the CAKN are now in the operational phase.

Through an interagency agreement with the Natural Resources Conservation Service (NRCS) a snow telemetry site was installed at Tokositna Valley that will record year-round precipitation and transmit real-time data on snow depth and density, as well as temperature and solar radiation. This complements the Kantishna SNOTEL site installed in 2005 on the north side of the Alaska Range.

Snow depth and density data were collected at the thirteen NRCS snow course and aerial marker sites in Denali. These data are available on the web at www.ambcs.org. A summary report for the 2005-2006 season was compiled.

Staff worked closely with the Washington office on the Climate Inventory Program. The reports generated from this partnership can be accessed at http://www.wrcc.dri.edu/nps/reports.php.

Education and Outreach
The winter of 2005 – 2006 was the fourth year for the Horseshoe Lake –Lake Ice and Snow Study by students from Tri-Valley School in Healy. Park staff work with the students to monitor and collect data.

Climate and snowpack monitoring presentations were provided for the Denali-Susitna Exploration Camp - Sunshine Creek, AK and for the CAKN vegetation crew. In addition, Fact Sheets was prepared and distributed on Climate Change and the CAKN Climate Monitoring Program.

Interagency Agreements
Much of the climate and snowpack studies in Denali are accomplished through Interagency Agreements and other partnership arrangements with California Institute of Technology, University of Alaska Fairbanks, Alaska Natural Resources Conservation Service, Western Regional Climate Center, and the University of Colorado.

SOUNDSCAPE

Monitoring
Park staff collected data from six sound stations throughout the park. The stations located on Healy Ridge, Muldrow Glacier, Caribou Creek, toe of the Ruth Glacier, West Fork of the Yentna River and Foggy Pass, collect sound level data every second and takes audio recordings for five seconds every five minutes. Loud sounds also trigger audio recordings. The sound stations were modified this year to utlilize less power and run more reliably.

2006 was the first year of a regionally funded project to develop an effective sample design for monitoring soundscapes in large Alaskan parks. The project, coupled with a concession franchise fee project form the core of the sound monitoring program at Denali.

Education/Public Outreach
Presentations about the Denali Soundscape Study were provided to the Denali-Susitna Exploration Camp, Denali Borough School District teachers, and the Alaska Science Symposium.

HYDROLOGU/GLACIERS/PERMAFROST

Hydrology
Several studies and reports were completed by resource staff in 2006. The draft *Water Resources Stewardship Report* is a plan that will directly inform park management and the forthcoming Resource Stewardship Strategy. Phase II of the *Water Resources Assessment of the Toklat Basin in the Vicinity of the Stampede Road Alignment* is a study assessing the surficial hydrology in an area which has the potential for increased development. The third report, *Potential Impacts to Water Resources from Development*

of a North Access Route through Denali National Park and Preserve, was also completed by park staff.

The park, in cooperation with USGS, began a 3-year study of the limnology and water quality of Wonder Lake. Trace amounts of mercury, dieldrin, and PCBs have been found near Wonder Lake as a result of global-scale atmospheric transport. Data from this study will help park staff to better understand the extent of this global transport.

CAKN
2006 was the 14th consecutive year of CAKN glacier monitoring on the Traleika and Kahiltna Glaciers. It was also the first year of the lake change study in northwest Denali. This included baseline water quality studies and remote sensing detection of change in lake size.

Glaciers
In addition to the glacier monitoring program, the Park acquired Laser Imaging and Detection Ranging (LIDAR) elevation data on Muldrow Glacier to assess glacier volume change.

Permafrost
This year the park established a contract through the CESU to for protocols to monitor change in permafrost over time. This includes developing techniques to detect change in carbon cycling in relation to thermokarsts. in National Parks and Preserves. The project is in the Eightmile Lake vicinity.

Seismology
Physical Resource staff assisted the UAF Geophysical Institute on permanent installation of a seismometer and associated telemetry equipment at Castle Rocks. The objective of this monitoring is to better understand the earthquake occurrence in Denali and the tectonic relationships between the Denali Fault system, the deep seduction earthquakes, and the Kantishna Cluster.

AIR QULITY

Natural resource staff conducted year-round air quality monitoring at the station near park headquarters, in collaboration with the NPS Air Resources Division and the following nationwide air quality monitoring networks: National Atmospheric Deposition Program (NADP), Interagency Monitoring of Protected Visual Environments (IMPROVE), NPS Gaseous Pollutant Monitoring Network, and the Clean Air Status and Trends Network (CASTNet). Park staff also oversaw operation and maintenance of the park-affiliated air quality monitoring station in Trapper Creek.

The park visibility web camera was relocated to Wonder Lake in June, where it will remain while the new Eielson Visitor Center is under construction. The web camera operated successfully throughout the summer, collecting high-resolution visibility data as well as contributing toward air quality outreach and education.

Two passive air samplers were deployed in the park for 12 months as part of the Western Airborne Contaminants Assessment Project (WACAP). Park staff assisted principal investigators with planning and development of the WACAP final report, which is due at the end of next fiscal year.

CULTURAL RESOURCES

Oral History

The staff Anthropologist completed final wrap-up of Thayer McKinley Expedition 50th Reunion. A DVD recording was made of the oral histories and program presentations gathered at the reunion.

Historic Photograph Collection

Staff assisted customers of the Museum Collection to fill their historic photograph needs during absence of Museum Curator position. These customers included local historians and Florentine Films (Dayton Duncan & Ken Burns), as well as, the Division of Interpretation and the Historic Building Restoration Crew.

Acquisition and development of a working historic photographs collection is an ongoing project. This year cultural resource staff collected and processed historic photograph collections from J.C. Reed (USGS Geologist, 1931), Pearl Adams (NPS employee, 1950s), Frances Erickson (MT&TCo. Savage Camp, 1920s & 1930s), George Lingo Collection (Savage Camp employee 1920s/30s), University of Alaska Anchorage photographs (Vic Rivers Collection, Engineer on the Park Hotel), and William Weber (1956 botanist).

This year marked the start of a very large project to identify and accurately update database for Museum Collection historic photographs. Once complete, searching for and locating specific photographs will be much easier.

All members of the staff spent several days with Karstens Family to identify Karstens historic photographs and shared National Archives and Records Administration (NARA) historic photos.

Administrative History

Another large project for the staff Anthropologist involved assisting with research, writing, and photographs selection for *Crown Jewel of the North: An Administrative History of Denali National Park and Preserve, Volume 1.* The author, Farnk Norris, had many specific history questions that required research to answer. Three months of work was required to select, caption, credit, and prepare illustrative historic photographs for the publication.

List of Classified Structures (LCS)
LCS program involved researching structure information, conducting site visits, and preparing reports of sites visited. Staff did condition assessments on 48 historic structures, updated Cultural Site Files, and managed of photographs for those files.

Inter-Divisional Assistance
Staff Anthropologist assisted DENA Wildlife Branch doing a week of moose surveys and 10 days of bear capture. Also helped out WEAR by doing a week of bear surveys on Seward Peninsula.

Working with the Concessions Division, we were able to produce six large, framed historic photographs to hang in the Quigley House as interpretive material for visitors. The Concessions Division provided the funding for the enlarged photographic prints and frames.

National Register Program
With plans underway to build a new rest stop at Savage River it was necessary to write a Determination of Eligibility (DOE) for Savage Camp. The DOE was sent to the State Historic Preservation Officer (SHPO) review. The SHPO agreed that the site of Savage Camp is significant and eligible for listing on the National Register of Historic Places.

Work was begun on a DOE for the non-Mission 66 houses in the HQ housing area. These were previously thought to be Mission 66, but predate that program by ten years.

Museum Program
The park hired a new Museum Curator, Jane Lakeman, who began work in August of 2006. The position had been vacant since June of 2005. Among her first tasks was to organize the collection storage room, the two collection processing rooms, and the curatorial office space. A routine schedule for maintenance was established for the climate control system and the air cleaner.

The Curator completed all required inventories in a timely manner and began updating the ANCS+ records based on the 100% inventory completed in 2005. A catalog number log was reestablished by the creation of an Excel spreadsheet to track all numbers and determine where problems exist.

A review of the Accession files revealed missing paperwork and/or signatures of authorized officials. A list was generated of all the outdated loan paperwork to various institutions.

Use of the Museum Collection has increased dramatically since August. The Curator assisted 37 researcher/information requests pertaining to archival and collections information. Most research requests (57%) originated from DENA staff.

The Cultural Resource Manager continues to represent the park and the region on the Museum Management Program Council (MMPC).

Section 106 Compliance
Section 106 compliance involved several consultations with the SHPO for rehabilitation projects on the Administration Building, non-Mission 66 housing units, and the completion of the compliance process for Building 103 (Ranger Cache) and Building 101 (Interpretation). SHPO consultation was also required for the installation of air conditioning units in Building 102 as well as rectifying a safety hazard by putting "snow stops" on the roof of Building 102.

Compliance archeology was conducted in the vicinity of the McKinley Station Trail, though no more cultural material was discovered than what was known to be there. Staff monitored several projects that involved ground disturbance.

The Cultural Resource Manager continues work on the National Programmatic Agreement (PA) Task Force to write a new PA between the NPS and the National Council of State Historic Preservation Officers. In 2006 a series of Tribal consultation meetings were held nationwide to gather and share information with all Tribal entities.

Cultural Landscape
Olmstead Center staff met with park staff in August to get input on the work that had been done on the Headquarters Cultural Landscape Report to date. The park received the draft Cultural Landscape Report from the Olmstead Center for review.

Archeology
The park hired a 4 year term Archeologist, Brian Wygal, to conduct surveys in park areas considered to have a high potential for archeology sites. Aerial survey work took place in August to give the Archeologist a better understanding of the park topography to better plan the pedestrian surveys that will take place over the next few years.

Educational Outreach
The park Anthropologist produced two new powerpoint history programs. "Toklat - Heart of the Park," highlights Charles Sheldon's 1906 trip to the Toklat area and covered significant history of the Toklat Forks area for the last 100 years, to 2006. This program was presented at four bus driver trainings, as well as other NPS employees, and NPS Interpretive staff. The second presentation details the history of the Eielson area from aboriginal times, to mining claims on Copper Mountain, through the removal of Eielson Visitor Center. The program was presented to Camp Denali & North Face Lodge staff.

Other history presentations provided by the staff Anthropologist included McKinley Park Station and Savage Camp history training talks and interpretive hikes for Denali Foundation staff, MSLC staff and NPS interpretive staff.

The park Cultural Resource Manager wrote two articles for *Alaska Park Science,* and presented a paper at the Alaska Park Science Symposium.

SUBSISTENCE

Once again this was a busy and active year in subsistence management at Denali National Park and Preserve. Subsistence Resource Commission chair Florence Collins retired from her position, and Ray Collins was elected as the new SRC chair. Miki Collins was elected to replace Ray Collins as vice chair. Subsistence coordinator Hollis Twitchell and his assistant Scott Hayden both left their positions in the park early in the year, and for the remainder of the year assistant superintendant Philip Hooge handled subsistence coordination for the park, assisted by wildlife biologists Tom Meier and Pat Owen, resources clerk Kim Kapalka, and others. The subsistence coordinator position was advertised as a GS-11 position focused entirely on subsistence issues and successfully attracted a large list of highly qualified applicants. A final selection is expected early in FY07.

The Environmental Assessment of management alternatives for ORV use for subsistence purposes by the Cantwell community was begun, and will be completed in 2007. A temporary closure of the Traditional Use Area to ORV use, with three exempted routes, was continued during the fall 2006 hunting season. Following is a brief summary of some of the programs and projects we have been involved with in FY2006.

Denali Subsistence Resource Commission

The Denali Subsistence Resource Commission met at Denali Park Headquarters in February and in Cantwell in August of this year. The Commission reviewed and commented on federal subsistence hunting and fishing regulatory proposals that could affect the areas resources or subsistence users. The Commission received public testimony and discussed several controversial issues such as the Cantwell traditional subsistence ORV review, the status of traditional ORV use in the Kantishna area, north access to Denali Park, the use of herbicides by the Alaska Railroad, subsistence hunting and harvest reporting procedures, and the revised Backcountry Management Plan.

Other Advisory Councils and Tribal Participation

Denali staff represented Denali National Park's and the Subsistence Resource Commission's issues at Federal Regional Advisory Council meetings, two NPS Subsistence Advisory Council meetings, and the statewide SRC Chairs Workshop.

Federal Subsistence Registration Permit Hunts

Park staff was responsible for managing the Federal Registration Permits for subsistence hunting of moose and caribou on park lands in Wildlife Management Unit 13E near Cantwell. A day was spent in Cantwell issuing a majority of the registration permits, with the assistance of Lori Nelson and Kari Rogers of the Bureau of Land Management Glennallen office. A total of 37 individuals were issued hunting permits.

Cantwell Subsistence ORV Use

In 2006, the park determined that ORVs are a traditional means of access in the study area near Cantwell, a finding that opened that area to subsistence ORV use by qualified Denali Park subsistence users. To limit damage to Park resources during the 2005 fall hunting season, the Superintendent enacted a temporary closure to ORV use in the entire

study area, with the exception of three routes that were considered stable enough that they would not exhibit adverse impacts. This closure and designated routes were again implemented in 2006, with one additional route near Pyramid Peak opened to use for subsistence hunting. The Park is currently engaged in writing an Environmental Assessment, which will examine a range of alternatives for allowing traditional ORV use while limiting adverse impacts to Park Resources.

Kantishna River Fall Chum Salmon Stock Assessment

Denali continued to participate in a cooperative study with the Alaska Department of Fish and Game to assess the Tanana and Kantishna Rivers fall chum and coho salmon runs. The project utilizes salmon fish wheels with live capture boxes on the Tanana and lower Kantishna Rivers to capture and mark salmon with Floy tags before being released back into the rivers. Two recapture fish wheels with live capture boxes are operated on the Toklat River by ADF&G staff and two recapture fish wheels with a live capture box are operated on the Kantishna River below the Bearpaw River by local resident Mike Turner under contract with the NPS. Data is used to determine fall chum and coho salmon run abundance and timing for the Toklat and upper Kantishna Rivers. This information is used for in-season Federal and State management decisions to ensure biological escapement goals for the Yukon River system.

ALASKA WESTERN AREA FIRE MANAGEMENT (AWAFM)

The Alaska Western Area Fire Management program, hosted at Denali National Park and Preserve, has fire management responsibilities for Denali National Park and Preserve, Lake Clark National Park and Preserve and Western Arctic Parklands (Kobuk Valley National Park, Cape Krusenstern National Monument, Noatak National Monument, and Bering Land Bridge National Preserve).

Fire Season

In 2006, Alaska saw significantly less fire activity than the previous two years. There were a total of 280 fires and 268,805 acres burned statewide. No fires were detected in Denali National Park and Preserve.

Alaska Interagency Support

On June 16th, Alaska Western Area Fire Management staffed and mobilized their Type VI engine to the Parks Highway Fire, north of Anderson, AK. Fire Management supplied an engine crew which assisted with mop-up and home assessment operations as well as a helicopter crewmember. The Parks Highway Fire totaled at 115,500 acres burned.

National Fire Plan Support

Alaska Western Area Fire Management facilitated the deployment of 5 Alaska interagency Type II hand crews to the lower 48 in support of the 2006 wildland fire campaign. The Fire Management staff coordinated the deployment of 17 employees in response to 15 different wildland fire incidents. Fire Management Staff mobilized employees from the Roads and Trails Division, Ranger Division, and Buildings and

Utilities Division at Denali as well as other Alaska NPS employees throughout the 2006 season. Employees were dispatched to wildland fire incidents in Oregon, South Dakota, Wyoming, Nevada, California, Utah, Montana and Nebraska. Their capacities ranged from Firefighter Type 2 to Public Information Officer to Helicopter Manager. In addition, members of the Fire Management staff acted as Crew Boss, Squad Leaders and Helicopter Crew Members. During 2006, Alaska Western Area Fire Management mobilized more personnel than ever before to the lower 48 states.

National Park Service Fire Management Support –Wildland Fire Use
The Bybee Complex at Crater Lake National Park in Oregon was comprised of two lightning ignited fires, the Bybee and Bybee 2 that started July 23 and August 7 respectively. These fires were managed by the National Park Service to allow fire to fulfill its natural role in the ecosystem. Five staff members of Alaska Western Area Fire Management participated in the management of these fires in multiple capacities. They provided Fire Use Management expertise to the Incident Command Team (Fire Use Manager Type I {trainee} as well as a Situation Unit Leader. They also fielded a Division Supervisor, Fire Use Monitors, and Field Observers during their combined 30 days on the assignment. During the assignment, they provided information and education to the public on multiple occasions. The fires burned close to 3000 acres.

Fuels Reduction
Front Country
The Alaska Western Area Fire Management Program continued the implementation of the Front Country Hazard Fuels Treatment Project by treating fuels in the vicinity of buildings at the Toklat Field Station of Denali National Park and Preserve. Biomass that was within very close proximity to park infrastructure was removed to create defensible space in order to reduce the risk of property damage and improve safety for employees, visitors and fire suppression crews during the event of a wildland fire.

Four members of the Fire Management staff spent one week at Lake Clark National Park headquarters conducting hazard fuels treatment operations in the front country. They treated a total of 2.5 acres around park infrastructure.

Back Country
As part of the ongoing Hazard Fuels Treatment program, a total of 1.5 acres of fuels were treated adjacent to backcountry cabin sites within Denali National Park and Preserve boundaries in preparation for and in response to wildland fire events. The Fire Management crew completed the primary fuels treatment at Sushana Cabin by treating .75 acres. Secondary treatment was completed at Upper Windy Creek Patrol cabin.

Fire Protection Point Identification
During the 2006 season, Fire Management staff worked with the Denali National Park and Preserve cultural resources staff to identify and assess sites within the park that needed to be given appropriate fire protection status. A total of 24 sites were assessed and labeled with the appropriate fire management response. The Park's cabin database was updated for these 24 sites.

Denali National Park and Preserve Helicopter Support
Alaska Western Area Fire Management's contract with Temsco Helicopters Inc. began on May 15, 2006 and concluded September 1, 2006. The Fire Management staff administered this contract and provided training, oversight and assistance during many projects that involved the helicopter at Denali National Park and Preserve.

The Hughes 500 D Type III helicopter was used to accomplish variety of projects within the Center for Resources, Science and Learning Division. Fire Management accomplished backcountry fuels treatment projects at Sushana and Riley Creek Cabins. The helicopter was used to accomplish the installation and maintenance of sound monitoring stations as well as Remote Automated Weather Stations. It was also used during glacier monitoring, seismic installations, plant ecology projects and cultural resource surveys.

Alaska Western Area Fire Management also assisted other divisions with their use of the helicopter. The staff provided oversight, support and equipment to the Building and Utilities Division during a cabin restoration project at Lower East Fork Patrol Cabin. The staff also provided support to the Ranger Division during 3 Search and Rescue Incidents.

Training Coordination
Alaska Western Area Fire Management (AWAFM) hosted a number of training courses in 2006. The Annual Fire Refresher Course was put on at the Denali National Park Recreation Hall on June 1. 22 DENA employees participated in the refresher as a step toward receiving their 2006 Incident Qualification Card.
Hazard Communications Program Orientation and Training was completed by the AWAFM staff on May 25. In addition, Staff members successfully participated and completed supervisory, On-the-Job, National Wildfire Coordinating Group, and fuels management training sessions as a part of their individual development programs.

AWAFM staff assisted teaching aviation training at Denali NP&P. Staff helped teach Helicopter Crewmember (S-271) to educate users about safe operations around helicopters as well as how to safely participate in missions as a helicopter crewmember. S-271 consisted of one day in the classroom and 1 day of field exercises.

Fire Ecology
Alaska Western Area Fire Management finalized the Front Country Hazard Fuels Treatment post-treatment plots and included information into the Denali Science Symposium poster presentation. The poster was developed jointly between NPS Alaska Regional Information and Educational Specialist Morgan Miller and NPS Alaska Region Fire Ecologist, Jennifer Allen. AWAFM provided information to Jennifer Allen for a presentation at the Denali Science Symposium. In 2005 43 plots were established in previously burned areas with the project seeking to establish succession patterns for the fuels spatial database and moose browse architecture availability post fire. Ten of the plots were later burned in 2005. In 2006 these 10 plots were revisited.

Fire Technology
Alaska Western Area Fire Management in conjunction with University of Montana's National Center for Landscape Fire Analysis and Denali's formerly known "Wireless Cloud" Project embarked on a new, ambitious program designed to create better (fire) technology transfer. As identified by a program After Action review in 2005, Western Area Fire Management began the 2006 season seeking a means to transfer field information to managers at the incident command post in a timely manner. Typically, fire field information at Denali has not been assimilated with other intelligence until field crews return to the command post in the evening. This posed a problem with weather information, digital photography and other technologies used in making fire assessments. Fire Management also recognized the struggles that the "Wireless Cloud" endured over the course of the previous three years and sought to bring that project on board with their parallel desire to have more timely technological information flow. Park leadership drafted a Memorandum of Understanding to establish a long-term relationship with the U of Montana's Center to deploy and maintain their network while providing training to local staff in hopes of assuming ownership at the end of agreement.

The Center brought a sophisticated body of technology that could provide minute-to-minute remote sensing data to assist in wildland fire management decision-making. The Center worked with fire management and park staff to rig up relay stations to transmit weather and fuel data to incident commanders via broadband wireless. Concurrently, the park established better communications with Toklat Road Camp, and set up a remote sensing data and communications network "backbone" that has future administrative and educational applications. Though the network was not tested by a fire incident, the system remained functionally in place at the close of 2006 to test the equipment's viability through harsh winter conditions. More technological applications will be investigated in 2007.

CONCESSIONS DIVISION

Contracts and Guidelines
The park awarded four glacier landing contracts in FY06: Hudson Air Service, K-2 Aviation, Fly Denali, and Talkeetna Air Taxi. Implementation of the Backcountry management plan began this year by integrating the new limits and guidelines, primarily for air taxis, hiking and hunting guides, into concession contracts and commercial use authorizations.

Guided Interpretive Hiking Prospectus
The Kantishna guided interpretive hiking prospectus was released this year. The prospectus is advertising the business opportunity for guided interpretive hiking services and represents the last of the concession permits that were awarded under the 1965 law. The award of these contracts will successfully complete the contract back log for the Alaska Region. As part of this process the park and the one Kantishna business owner who is a historical operator, as defined by ANILCA, came to agreement on the scope and

level of services allowed to the historic operator for guided interpretive hiking in Kantishna.

Awards
The park concessionaire, Doyon/ARAMARK Joint Venture received two Environmental Achievement Awards this year. Their Environmental Management Program: *Planet EVERgreen: Protecting and Preserving The Last Frontier*, received a 2006 Department of the Interior Environmental Achievement Award and, the Environmental Management program was an Honorable Mention recipient of the 2006 NPS Environmental Achievement Award, partner category.

Concessionaire Assets
The park completed condition assessments of concession-managed assets using the contractor Black and Veatch. The condition assessment aids in the oversight of concession-managed assets by identifying recurring maintenance and deferred maintenance required to maintain the appropriate facility condition index. Fire condition assessments were also completed for these facilities.

Doyon/ARAMARK also undertook a remodel of the Wilderness Access center, adding new interpretive panels and a centrally located information desk to better serve visitors.

Bus System
22 upgraded tour buses were put into service this year. These buses are equipped with video capability that allows the driver to focus and zoom in on wildlife, assisting passengers with spotting of wildlife, and also bringing wildlife into better view. The new buses are also designed to provide more comfortable seating and better viewing capabilities. By reconfiguring buses used for the Visitor Transportation System (VTS) with bucket seats allowed for increased capacity by four additional seats per bus.

Transportation services into the park was provided for approximately 287,000 visitors. This includes 74,537 on VTS, 120,032 on Tundra Wilderness Tour (TWT), and 76,256 on Denali Natural History Tour (DNHT) for a total of 287,415 visitors served on the bus system. This is about a 2% increase over FY05. While VTS use declined about 9% since 2005, the TWT and DNHT grew by 1% and 17% respectively.
For the first time the bus transportation system was adjusted to meet the needs of the Artist-in-Residence participants.to use the VTS while in the park. This was a new approach this season and seemed to meet the needs of the artists as well as utilized VTS within the intended purpose for shuttle buses.

The Chief of Concessions was selected to represent the Alaska Region on the NPS Concessions Program Asset Management Advisory Group which advises WASO Concessions on matters related to facility (asset) management in the National Park System.

Concession Division employee Martha Armington completed the training and practical experience requirements to received Certification of appointment as a conflict resolution specialist, as a resource available to the Alaska Region.

MAINTENANCE DIVISION

Staff and Budget
Maintenance staff secured funding, planned, and implemented a $ 9.5 million budget. This included 25 FLREA accounts, 10 CFF in addition to ONPS funds.

During the CORE analysis exercise maintenance work and all maintenance staff participated in the development of strategies for effective operations in the face of shrinking base budgets. Additional maintenance restructuring was accomplished in the MESS. The Assistant Chief of Maintenance position was eliminated and funding from this position will be used to fill a STF, B/U Maintenance Mechanic position instead. Special project crews have been put under the direct supervision of the park Engineer who now reports directly to the Assistant Superintendent of Operations. Also established an Auto Shop workgroup tasked with improving operational efficiency and communication methods.

A new Facility Management Specialist, Nancy Pearson, and a Maintenance clerk, Phil Sauvy, were hired and two positions, a Budget Tech and B/U Maintenance Mechanic were advertised.

The 5 year spreadsheet was refined to include all fund sources, applicable FMSS API and FCI information, funding criteria scores and project lead for each project. This resulted in improvements in planning, evaluation of workloads, and prediction of funding levels for out years and compliance needs.

Staff completed second year of Bio-Diesel testing. This effort included; meetings with UAF and AIDEA, testing and treatment of the oxidized fuel, installation of fuel specific filtration units, collecting fuel samples and development of testing regime for UAF during winter of FY 07.

Staff were actively involved in C-Camp master planning, Auto shop roof replacement and efforts to meet the Compliance Order with ADEC for our out of compliance Lagoon and associated solid waste handling facilities.

Chief of Maintenance continues to represent the Park and Region in the WASO and the Regional Office as a Maintenance Advisory group member.

FMSS
During FY06, the park continued to fully implement the Facility Management Software System (FMSS) by performing extensive data validation. Two seasonal employees were

hired to provide administrative support to complete all of the FY06 WASO directives. In FY06 all service wide goals for the implementation of the FMSS were met by park personnel and beyond the minimum standards new objectives were identified to move ahead in managing our assets more effectively and more efficiently.

Recording of Operational Data

137 employees in maintenance completed daily work reports which were entered into FMSS by our seasonal and full time clerks. Throughout the course of the summer, data was validated and corrected by running reports in the Asset Management Reporting System. Regular training and meetings were conducted by the full time staff to ensure that all COR duties were completed while at the same time exceeding the FMSS goals. In all, almost twelve million dollars of actual costs were entered into FMSS. This is made up of over 180,000 labor hours at $5.5 million, $3 million in materials purchased, $0.7 million in equipment/tool costs, and $2.7 million in service contract costs. To record this data, 300 work orders were created to track work performed and an additional 233 preventative maintenance work orders were created to maintain critical features of buildings and utility systems.

Mobile Maximo Pilot

Denali has been selected as a pilot park for implementing the Mobile Maximo (FMSS) software program. Using PDA's, Tough Book lap tops, GPS units, and digital cameras we gathered over 340 Trails features. During this effort 100 percent of Trails and Roads feature data was collected and their specification template fields were completely filled out. This data along with the new CRV tool will help us correct low replacement values for our trails and at the same time will bring the FCI into the normal range when compared with deferred maintenance. In order to accomplish this, Regional FMSS coordinator and a team of three students from ARO were brought in to assist us. We educated the Roads and Trails Foremen in the new requirements and then they provided personnel and information for all the necessary data to be collected. Two trails crew leaders were provided training in FMSS/Mobile Maximo and they continued gathering data after the team from ARO departed. The team from ARO also assisted us in creating CESS estimates for future projects for all divisions in maintenance based on foreman and engineers scopes of work.

Data Quality Assurance (QA/QC)

At the same time, WASO sent out a QA/QC report asking all parks to validate their deferred maintenance costs in relation to standardized costs per unit of measure. While validating this data, we were able to identify low current replacement values (CRV's) for all of our historic buildings and these were corrected based on recent actual costs of rehabbing these buildings. It was also discovered that key elements that contribute to the value of an asset were being left out of CRV's calculations and skewed the Facility Condition Indexes (FCI's) of assets in a negative way. With the help of our seasonal employees we have been reviewing all of the work types in work orders to verify that the work being performed is being classified correctly. At the same time, data is being compared with PMIS and FMSS to ensure that work is not being identified twice, eliminating another negative hit against the FCI. With over 3,000 total work orders, and

hundreds of PMIS projects this is a huge task that will continue into FY07. Already we are seeing an improvement in the FCI of our assets as the standard deferred maintenance work type is validated and corrected when needed. Many times we are finding that the work is indeed deferred maintenance but needs to be updated to reflect component renewal and recurring maintenance that has been deferred. Many other areas of data clean-up continue in the specification templates of assets, CRV's, parent/child work order relationships with PMIS, and data entry.

Federal Highways Pilot
Denali is also a pilot park for the road inventory program (RIP) road alignment and bridge alignment process. During this effort we have fully matched our assets with the Federal Highways data.

Quarters Management Information System (QMIS) Data Alignment
We have also implemented the new QMIS alignment with housing apartments updating over 100 housing units entries.

NPS Focus Photo Records
Another new effort the park is implementing is the gathering of photos for upload into the NPS Focus web site. This interactive, web based, program will be used to attach photos to PMIS projects to show progress throughout the life of a project. Initially, this will enable WASO to see the deficiency, the progress made in correcting that deficiency, and the final outcome of the completed project.

Condition Assessments
This summer the park created 484 condition assessment work orders. The final year of the first five year cycle of comprehensive condition assessments was completed and hundreds of new deficiencies were input into FMSS work orders. The park also had three teams of contractors which performed comprehensive condition assessments. The contracted Fire Protection Condition Assessment created 160 deficiency work orders, all Concessions managed assets were inspected and 194 deficiency work orders were created in cooperation with our concessionaire, and our fuel dispensing systems and boiler plant were inspected and nine deficiencies were noted by the contractor.

Operations and Maintenance
In FY06, maintenance implemented a new work order hierarchy to be able to identify maintenance and operational costs in all work performed on park assets. In this way staff can justify our ability to competitively maintain park assets with park personnel.

Identifying Contracting Officers Representative (COR) Activities
Also, based on the COR exercises of FY05 staff identified the need to better track the time of supervisors and clerks to give objective data about how their time is being spent in performing their job. Fifteen new operation codes were created to show time spent hiring, planning the budget, overseeing projects, doing administrative work, purchasing, etc. They were designed to identify key components of information that the COR exercise requested so that very accurate data could be collected for future COR exercises.

These new op codes were put into the job plan for all new work orders and will go into effect on October 1, 2006.

Install Fuel Tanker Secondary Containment
Changes in the Park fueling protocols eliminated the anticipated need for secondary containment pad at Toklat. The containment pad at Headquarters was doubled in size and materials for a frame building were purchased with project funding. Tentative plans are to use half of the structure for housing the Park's new glass crusher.

Toklat Road Camp Heating
Staff installed all piping and system components have been installed except for the heat exchanger and the exhaust pipes that will connect to the heat exchanger. The project is scheduled for completion by early June FY07.

The focus in B/U has shifted from major Repair Rehab projects to simpler cyclic projects, PM's and operations. Further effort is needed to mitigate the impact the special projects crews need for assistance has on the operational staffs ability to effectively perform the minimum routine maintenance and operations. Work crews remodeled the kitchen in Apartment 51E and also did some remodeling in housing unit P252B.

School to Work (STW) Program
Two new winterized versions of the school to work cabins were constructed last winter by the Building Trades class at Tri-Valley School and relocated to C-Camp. Two cabins were demolished and sites prepared for next year's round of cabins. Construction activity on highway bridges outside the park hampered efforts to move the cabins from the school to the park and necessitated relocating them twice at the school before they could be brought into the park.

Environmental Stewardship
In FY06 the park recycled 129,158 pounds (64.5 tons) of material not headed to the landfill. The amounts recycled included 65,000 lbs. of metal (scrap, aluminum, copper, and brass): 48,000 lbs. of paper (cardboard, office paper); 1,000 lbs. of plastic; 2,364 lbs. if electronics (computers, printers, fax machines); 196 lbs. of used toner cartridges; and batteries, oil and fluorescent tubes.

The park operated all fleet engines using 100% recycled engine oils and all eligible hydraulic systems on heavy equipment and trucks were operated using bio-based hydraulic oils.

The auto shop recovered and reused 990 gallons of used engine oil as heating fuel for fleet maintenance shops.

The park continues ongoing tests of the bio-based fish oil. In partnership with UAF and DEC, park staff provide labor, parts, shipping and expertise during the years experiment with this product.

This was the first year of a multi-year test program using particulate scrubber exhaust catalysts. These scrubbers were funded by the EPA and installed by NPS mechanics on heavy trucks and equipment. DEC will be providing the performance monitoring.

SPECIAL PROJECTS CREW

B101, Interp Building
The Special Projects Crew performed a complete interior and minor exterior rehab on this historic building. Work included restoring windows and doors to the original configuration and a complete gutting of the building interior. The existing first floor structural system was retained and reinforced. All new interior walls, a new second floor and second floor interior partition walls were installed. All new mechanical, including mechanical cooling were installed. A fire protection sprinkler system and fire detection system were installed and brought on line. With the exception of the restroom, this building is fully ADA accessible. For improved energy efficiency, this building is no longer on central steam heat during the winter

P13 Apartment Building
Renovation was completed on this historic housing unit and it is now ADA accessible. For improved energy efficiency, this building is no longer on central steam heat during the winter. A fire protection sprinkler system and fire detection system were installed.

P34 Navaille House
A complete interior rehab of this historic residence began in FY06. Interior walls were taken down to the studs and new insulation and wall finishes are planned. Floor revisions will provide better circulation and more efficient use of kitchen and living room space. All new mechanical systems will be installed. Once completed, this building will have a fire protection sprinkler system and fire detection system installed. For improved energy efficiency, this building is no longer on central steam heat during the winter.

B103 Ranger Cache
Work began on a complete renovation of this historic building. Work included lifting the building to construct a new concrete foundation and floor, replacement of rotted sill logs and log column ends. Unforeseen and unbudgeted work included replacement of all log rafter tails due to rot and then complete replacement of the entire roof. Interior rehab includes installation of restroom facilities and new office space. Furring out of interior walls and installation of thermally efficient windows will improve the energy performance of the building when completed. Once completed, this building will be fully ADA compliant and have a fire protection sprinkler system and fire detection system installed. For improved energy efficiency, this building is no longer on central steam heat during the winter.

Lower East Fork Patrol Cabin
This historic cabin was raised, rotted sill logs replaced, a new foundation constructed and a new floor system installed. Site grading for improved drainage was accomplished to minimize future problems. A new insulated roof was installed. This work was

accomplished in part using local logs previously felled and peeled at the site. A new outhouse was constructed.

Front Country Water System Improvements
This emergency funded project involved providing a new water treatment facility for the entrance area water system. Work included working with B&U and R&T crews to relocate an ATCO trailer formerly used as office space, and rehab that trailer into a new space suitable for relocation of the existing water treatment system. The special projects crew then demolished the existing water treatment building. During demolition, approximately 40% of the lumber in the existing building was salvaged for recycling into this and other projects. A new water treatment building was constructed that is slightly more than twice the size of the existing building. This expanded facility will provide a safer work environment by separating the disinfection chemicals from the general work place as well as provide room for future hardware for treatment of disinfection byproducts. This new facility will have a fire protection sprinkler system and fire detection system.

Sanctuary/Igloo Campground SST's
Management direction redirected the priorities for this project from construction of SST restroom facility at Igloo Campground to construction of an SST restroom facility near Teklanika Campground at the new location of the MSLC field camp. The SST for the field camp was completed and the SST at Sanctuary Campground is 90% complete. Final interior finish work at the Sanctuary SST will occur in the spring prior to the summer season. In addition to the SST construction, a shallow well with pump was installed at the field camp location to provide a non-potable water supply for the camp.

Emergency Stabilization
Special Projects Crew performed emergency stabilization of the cache at the Pearson cabin near Toklat. Crews also conducted emergency stabilization and installed a temporary roof cover on the recently acquired Busia cabin in Kantishna.

PROFESSIONAL SERVICES SUPPORT GROUP

ESFMB/C-camp MP
Staff assisted with EA for C-camp MP and ESFMB. This required numerous revisions of alternatives, development of purpose and need statements, numerous reviews and editing of verbiage and graphics for alternatives. Staff also assisted with preparation of responses to EA comments.

Conceived utility phasing and need, wrote Scope of Services for utility Schematic, Design Development, and Construction Documents. Utility project is somewhat complicated consisting of 14 separate projects with 4 fund sources packaged into 6 phases covering 13 years. Assisted in administering contract for both utility design and ESFMB schematic design.

Group staff assisted with Value Analysis, VA write up and DAB presentation for both utilities and ESFMB. Additional PMIS projects were prepared for utility short falls and determined additional phasing after VA and schematic design for utilities determined there would be short falls.

Staff coordinated all preparation work for C-camp for 2007 construction season. This consisted of coordinating all maintenance divisions, resources, and interpretation to remove and relocate items in C-camp.

Lagoon/front country wastewater collection
A Scope of Services was prepared and staff administered contract for supplemental services for developing an accurate base map of utilities for the front country area. When the estimate for surveying sewer line exceeded available funds ($40,000 for survey effort), park staff, with assistance of student engineer and ARSO staff conducted the survey.

Kantishna
Staff wrote and obtained approval from ADEC for work plans for 2007 day labor remediation effort at Kantishna and coordinated Hazwoper training and refresher for all Park Staff. Field work was conducted with staff for remediation of contaminated soils at AST tank sites at downtown Kantishna sites.

Eielson Visitor Center
Park staff continued active participation the management of the Eielson Visitor Center construction project. Specific activities included site visits and working with the contractor on refinements to the stone work and general site development issues. Facilitation continued of engineering and evaluation of alternatives for the small scale hydro system. Coordination took place between the park and contract managers to address and improve accessibility within the building and site and between the contractor's activities and park operations

Assisted in the development of treatment alternatives for the historic Doty houses rehab program. Cecil Doty is a famous NPS architect who designed these houses. A revised floor plan was designed for P34 for improved circulation and a more efficient kitchen layout and developed construction documents.

The Park Engineer continued involvement in the planning and design of the Savage Rest Stops project. Progress to date includes completion of the Environmental Assessment. Soil geotechnical investigation with 9 borings was performed in late spring. Conceptual design is complete and a contract has been awarded for the next phase of design. The project has been reviewed and approved by the Development Advisory Board.

Staff continue monitoring of the Butler Building settlement. A design was developed too jack and shim the interior building columns and the contract was awarded to implement that design. The work is to be performed in November 2006.

TRAILS

McKinley Station Trail

The Trails Crew completed construction of the 1.5 mile McKinley Station Trail. Part of the construction involved design and installation of a 36' long timber-framed "pedestrian protection structure" under the Alaska Railroad trestle. A 300 foot gabion wall was also constructed to support an ADA compliant bench cut.

Triple Lakes Trail

Triple Lakes Trail reconstruction project began in FY06. Crew surveyed and designed 2 miles of trail to be reconstructed or rerouted and installed personnel rated zip-line to cross Riley Creek to access the trail. Work included significant reroutes to avoid failed sections of trail with associated resource impact due to trail braiding, re-vegetating hundreds of feet of social trail and heavy brushing for over 3 miles. Park Trails Foreman designed a 70 foot Hines Creek footbridge this year and poured three concrete abutments for this project.

ROADS

Road Design Standards

This project has been underway for several years and is now under review. When complete, the document will provide guidance on maintenance and design of the park road for the future.

Culvert Replacement

Replaced 5 critical failing culverts in Kantishna, Eielson Bluffs and 50.5 mile.
Crews replaced 19 (1156ft.) non-functional or failing culverts in Kantishna, Eielson Bluffs, 50.5 Mile, Hogan Canyon, Sanctuary flats, and Primrose. Work also included re-grading surrounding ditch lines and retrieval of lost gravel materials. Crews recycled 1500 cubic yards of lost gravels back onto the park road. Inclement weather conditions in Aug slowed progress on this project.

Replacement of these culverts has greatly improved water drainage away from the park road structure which has reduced road bed soft spot formation, reduced sub grade failures and helped solidify soft road shoulders which has significantly increased driver safety along the park road.

Replenish Gravel Road Surface

Crews hauled 6942 cys of surfacing material to re-surface Eielson Bluffs (2.5 miles) and applied surfacing binder to 70-72 Mile (2 miles) to eliminate un-ravelling and washboarding, as well as re-surfacing several short areas near 42 and 47.5 Miles.

In conjunction with the superelevation project the entire 2.5 miles of Eielson Bluffs was re-shaped and crowned, superelevations eliminated, ditches were constructed for areas without drainage and a maintainable driving surface applied for the first time since the road was constructed. Superelevation concerns were also corrected in Kantishna.

Manual on Uniform Traffic Control Devices (MUTDC)
Road crews began the replacement of 121 park road regulatory and several informational sign posts to meet current DOT FHWA MUTCD break-away standards. 121 sleeves were replaced and 89 posts were replaced. Due to inclement weather this project was delayed and will be completed in 2007

Brushing Projects
Crews hand brushed 1.5 miles of heavy brush near the Wonder Lake Campground road entrance. A 5 person crew hand brushed 39.6 lane miles of park road and service roads. In Sept this crew prepped Igloo Canyon for the pending 2007 FHWA road rehab project. Mowing operations were slowed due to equipment malfunctions, 37 lane miles of park road and 4 lane mile of service roads were mowed in the East District in 2006**. T**he Wonder Lake road was also mowed from 83 Mile to the Kantishna Airstrip and re-mowed all previously mowed areas between Sable Pass and 56 Mile.

PLANNING DIVISION

Planning Division projects during 2006 included producing and distributing a Final Backcountry Management Plan and General Management Plan Amendment and a corresponding Record of Decision, producing and distributing the Final South Denali Implementation Plan and corresponding Record of Decision, work on the transportation plan for the park entrance area, work on the consolidated general management plan, gateway community planning, environmental compliance for various projects throughout the park, and assistance with a variety of other planning projects.

Backcountry Management Planning
The Planning Division completed work on a Final Backcountry Management Plan and General Management Plan Amendment in 2006. The plan amends Denali's General Management Plan for all parts of the park and preserve not addressed in the 1997 *Entrance Area and Road Corridor Development Concept Plan* and the 1997 *South Side Denali Development Concept Plan*. The plan addresses major changes occurring in the backcountry, especially recreational uses and access that have increased significantly in the last 15 years such as mountaineering and climbing, guided activities, and snowmachine and airplane access. The intent of the plan is to manage growth so that in the long term a greater number of users can experience the park with reduced resource impacts.

Backcountry Management Plan Implementation
Planning division staff coordinated meetings to develop detailed timelines and assign responsibility and accountability for backcountry plan implementation actions. Division staff also began work on its own assigned projects, including a Kantishna Trails and Campsites plan, interim recommendations for managing social trail impacts in Kantishna,

and documents for chartering a Federal Advisory Committee for addressing aircraft overflights.

South Denali Implementation Planning
In partnership with the State of Alaska and the Matanuska-Susitna Borough, the Planning Division completed the Final South Denali Implementation Plan and Environmental Impact Statement. The purpose of the plan and environmental impact statement is to address the needs of a growing visitor population in the South Denali region for the next two decades. NPS staff continued to contact organizations and individuals to share ideas on facility development.

General Management Plan Consolidation
The division completed a draft of a consolidated 2006 General Management Plan for Denali. When completed, this document will contain the complete GMP guidance for Denali drawn from the 1986 *General Management Plan*, 1997 *Entrance Area and Road Corridor Development Concept Plan*, 1997 *South Side Denali Development Concept Plan*, and the 2006 *Backcountry Management Plan*. The document is intended to be an easy-to-use reference for park managers and interested members of the public.

North Access Proposals
The planning division continued to track and respond to State of Alaska projects related to a new northern access route to Denali. The division coordinated responses to information requests, attended meetings, and articulated the park's position regarding the proposed project. Staff reviewed and commented on the 654-page North Access Reconnaissance Study completed by the State of Alaska Department of Transportation and Public Facilities.

Compliance Program Management
Environmental Assessments and Findings of No Significant Impact were completed for the following projects: Construction of the Triple Lakes Trail and Savage Alpine Trail (Phase II), both connecting the road corridor to designated wilderness; construction of a new Savage Rest Stop; Evaluation of a Sampling Plan on the Comstock #2 Unpatented Lode Claim in the Kantishna Hills; and Construction of an Emergency Services Building and other Improvements in the C-Camp area. Reviews at the environmental assessment level were continuing for: Replacement of Two Cabins for Subsistence Uses; A Management Plan for Subsistence ORV Use in the Cantwell Traditional Use Area; Construction of a New Horseshoe Lake Trail System; Construction of New Trails at the Eielson Visitor Center Area; Gravel Extraction at Kantishna; a Federal Highways Administration Park Road Realignment and Winter Ice Mitigation at Mile 4 to 4 1/2; Temporary Telecommunications Installations in Wilderness; New Structures in the Concessioner Land Assignment; Kantishna Area Trails; a New Talkeetna Ranger Station Parking Lot; and Circulation and other Improvements in the Headquarters Area.

Forty eight projects were tracked at the categorical exclusion level of National Environmental Policy Act compliance, including projects dealing with park road rehabilitation projects; historic structure rehabilitation; permafrost, glaciation, earthquake

and climate research; global warming, shallow lake and saxifrage research; reclamation and exotic plant research; H5NI Virus research; physiology of climbers; web camera installations; archeological investigations; drilling for project geophysical data; propane tank installations; Off Road Vehicle (ORV) use closures; contaminated soil removal and remediation; monitoring wells and risk assessments; and park road design standards.

Denali National Park and Preserve was selected as a pilot park in 2004 to use the Planning and Environment Public Comment (PEPC) program to track all National Environmental Policy Act (NEPA) documentation and to use the public side of the database for public information dissemination and comment. Denali used PEPC for public comments on environmental assessments as well as for the Park Road Design Guidelines.

Gateway Community Planning
In partnership with the Matanuska-Susitna Borough, comprehensive community planning continued in the "Y" and Trapper Creek council areas throughout fiscal year 2006. This effort supported one of the goals of the South Denali Implementation Plan: to preserve the quality of life in local communities. In addition, the Denali Borough visioning workshop was conducted in October 2005.

Community Transportation Planning
The National Park Service completed a contract with HDR Alaska, Inc., to develop a Needs Assessment and Feasibility Study for a Community Transportation System. This document was developed to guide the implementation of transit service between the park entrance area and neighboring communities in order to

1) reduce vehicle traffic and congestion in the park
2) reduce the need to expand parking in the park
3) reduce confusion and increase clarity in transportation options for visitors
4) reduce duplication in service by many private establishments that provide their own visitor transportation into the park
5) create a convenient way for visitors who arrive at Denali without personal vehicles to move freely about the entrance to the park and
6) provide an incentive and means for visitors who do have personal transportation to leave their cars or recreational vehicles parked where they spend the night.

The work included an analysis and forecast of visitor trends through 2015, a short-range plan for improving transportation between the park and neighboring communities, long-range alternatives for a transit system, and identification of funding sources and organizational options.

Environmental Management System
The planning division provided the lead coordination role for the park's Environmental Management System for most of the 2006 calendar year. The EMS committee produced a booklet and slideshow highlighting the park's accomplishments regarding sustainability and environmental management, developed a green purchasing guide for use by park staff, and began work on Standard Operating Procedures for barrel fuel handling among

other projects. The EMS committee also completed the annual audit of the park's performance per NPS servicewide requirements.

Navigability
Planning staff met with BLM and State officials during 2006 about State navigability assertions on four park waters: Birch Creek and the Kantishna, Muddy and Bearpaw rivers. The Recordable Disclaimer of Interest process was used. Staff collected evidence, including sequences of air photography, old newspaper stories, and diary entries, from agency and first-person sources related to historical use and the susceptibility of commercial use on these rivers and shared that evidence with BLM and the State. The investigation and process continues, but the State has dropped its assertion of Bearpaw River navigability upstream of Diamond based in part on evidence presented by planning staff.

Other Planning Projects
The planning division assisted the research and resource management division in initiating production of a Resource Stewardship Strategy for Denali. Work this year included facilitation of a scoping workshop for visiting researchers and drafting the background section of the document.

Staff participated in a formal wetlands investigation for a proposed new facility at Brooks Camp in Katmai National Park as well as providing wetlands maps used in the C-Camp and Savage Rest Stop environmental assessments and compensation plans.

Planning staff spent time reviewing and making suggestions for improvements to the draft 2006 Management Policies, the renumbered 36 CFR Part 13 regulations, PEPC revisions, and the draft official Administrative History of Denali National Park and Preserve.

The division continued throughout 2006 to be a part of the Alaska Region team putting together the ANILCA Section 1110(b) Access Guide. Staff worked to make clear in the document what the agency authorities are and what the process is for evaluating Right-of-Way requests. Staff worked to categorize the public comment through the PEPC system for analysis and response.

Planning staff worked throughout 2006 to draft, fine-tune, and respond to public comments on the Park Road Design Guidelines. This plan is intended to provide a quantitative representation of the qualitative road management concepts given to the public in the 1986 GMP and 1997 Road Corridor DCP, so that FHWA design engineers, park staff, and the public would be clear on the types of modifications and improvements that would continue or enhance the rustic character of the park road versus those actions or proposals that would adversely affect park road character.

Staff met with Alaska Railroad Corporation officials a number of times in 2006 to review and edit proposed congressional legislation to authorize a land exchange between the Alaska Railroad and the park for the purpose of constructing a turnaround 'Y' on park

lands. This authorization would likely result in an EIS for public evaluation of the site selected and would include an addition of acreage to the Denali Wilderness.

Planning staff made on-site investigations in 2006 of proposed telecommunications sites in the Denali Wilderness. Work continues on planning for short-term placement of facilities to provide an effective communications network at the least impact to wilderness resource values.

Planning staff walked the 17b (public access) easement that the National Park Service is responsible for managing across AHTNA lands west of Cantwell and updated park management for on-site meetings that the Denali Borough had with AHTNA and BLM.

Planning staff were involved in the park's work on the draft Headquarters Cultural Landscape Report, along with a cultural resource team from FRLA. Alternatives were re-drafted that would mesh present and future improvements to headquarters area vehicle circulation, parking and infrastructure with the treatment objectives for the Historic District Landscape.

Outreach and Assistance
Staff assisted with multiple congressional staff and Department of Interior officials site visits to Denali. Planning division staff facilitated the Alaska Leadership Council meeting in May 2006 in Homer, a portion of the Science Symposium, and other park meetings. Staff also assisted the Matanauska-Susitna Borough with the Talkeetna Flood incident response. Planners educated students in the Anchorage School District, students at Alaska Pacific University, and Elderhostel guests about land management issues in Denali.

DIVISION OF RESOURCE AND VISITOR PROTECTION

CHIEF RANGER'S OFFICE

Staffing and Budget
The new staffing model for North District law enforcement and emergency services was implemented with seven commissioned rangers: a GS 11 district ranger and PFT or PSTF position at Wonder Lake (1), Toklat (1), Backcountry (1), and HQ area (3).

Staffing and human resource management issues were a principal focus of the Chief Ranger's time and energy. All seasonal law enforcement positions in the North District were eliminated and replaced with a smaller number of 10-month PSTF positions. Two rangers from the Arch in St. Louis, Robert Sloop (assigned to Toklat) and Scott Pariseau (assigned to the backcountry). Jaime Smith from Lake Roosevelt, was hired into a HQ Area position along with a new local hire, Michael O'Connor. They joined District Ranger Richard Moore, Wonder Lake Area Ranger Jeff Caulfield, and HQ Area Ranger Dan Fangen-Gritis. The build-out ranger staff of seven was finally in place by the end of June.

The park pilot position, which had been vacant for three years, was filled in September with the hiring of Colin Milone. Since he had not flown for the government before, an extensive training program was developed to enable him to meet agency policy requirements.

The Lead dispatcher position was upgraded to a GS 7 supervisory position. A PFT dispatcher position and a 4-year PFT Term dispatcher position were approved by the Position Management Review Board. Bonnie Burnell was selected for the first of these positions and a selection on the second is pending.

An Assistant Kennels Manager position was established and filled on a term PSTF (10-Month) appointment with Carmen Adamyk. Filling of this position addresses a long-standing need for professional backup capacity behind the Kennels Manager. Adamyk will supervise the bulk of day-to-day Kennels operations year-round, freeing up the Kennels Manager to also assume responsibility for supervision of the Backcountry Desk, formerly performed by Wilderness Manager Joe Van Horn. This in turn will free up the Wilderness Coordinator to focus more on management and professional level issues.

As part of the crafting this year of the park's Sustainable Budget Plan, the division was tasked with preparing justifications and proposals for three revenue enhancement projects including: charging for dog demonstration and wilderness permits, as well as increasing the Mountain Use Fee. The assignments were completed by the October 1 deadline and now await management review and action.

With the assistance of the Personnel Office, long-standing questions and controversy surrounding hazard duty and overtime pay for South District staff on mountaineering patrol were resolved. Two new criteria for hazard duty pay were identified and approved and the standard duty day while on Mount McKinley mountain patrol was increased to 12 hours. During these patrols which average 3 weeks, mountaineering staff are now paid 7 days per week, 12 hours per day. The expanded duty hours paid, more properly and fairly represent hours actually worked and required by these unique assignments.

Freedom of Information Act (FOIA)
Responsibility for the park's Freedom of Information Act program was transferred mid-year to the Chief Ranger from the Superintendent's Office. Approximately 25 FOIA requests were processed and none were left outstanding at year-end. A potentially serious hold-over FOIA dispute between the NPS, Alpine Ascents International, and the American Alpine Institute was successfully resolved.

Search and Rescue (SAR) Plan
The draft of a new park SAR Plan was completed but the final product has not been reviewed and approved. Primary responsibility for SAR record keeping and reporting was assigned to the South District and an SOP for these functions was developed and written. To enhance cross-district understand and cooperation, the division planned to assign Base Camp shifts on Mt. McKinley to each permanent ranger in the North District.

AVIATION PROGRAM

The Aviation Management Plan for the park was completed and approved.

Numerous and diverse missions were accomplished with the park planes this year including transportation of the Education Specialist to local bush communities, bear capture associated with the Park Road study, fuel tank inspections by AMD at Kantishna, aerial search around Mt. Foraker during the Nott/McNeil SAR, transportation of the vegetation crew, and extraction of a climbing patrol from the Rhone house airstrip after they completed a circumnavigation of the Kichatna Mountains. The park plane and pilot were instrumental in the detection and apprehension of two local men who poached a bull moose in the NE corner of the park.

NORTH DISTRICT

The district expanded its roster of search and rescue/EMS responders by actively recruiting employees and volunteers from other work units and division. This resulted in a much more efficient organization during SAR incidents and greatly increased our ability to respond to EMS calls with trained personnel. Permanent staff attended Managing the Lost Person Incident training and search planning classes in late winter. Staff participated in a large avalanche rescue exercise with multiple agencies at Hatcher Pass State Park. Two rangers attended the Service-wide technical rescue training in Moab, UT in April, assumed leadership positions in district SAR operations immediately afterwards, and conducted regular training sessions for park staff throughout the season. A number of permanent staff attended training in and were certified as Project Helicopter Managers.

District Ranger Richard Moore was named to the NPS National EMS Working Group as the Alaska representative in order to better ensure that Denali and Alaska-specific concerns and issues in EMS were recognized by the NPS. In addition, new national EMS protocols and policies began to be phased into district operations.

The number of backcountry patrols during snowmobile season and hunting season were greatly increased this year resulting in several poaching and ATV trespass cases. This was a direct result of the increased number of ranger staff available year-round and successful efforts to replace and improve the fleet of patrol ORV's. Staff worked to continue integrating new technology into patrol planning, operations, and documentation with the addition of state of the art GPS units, personal locator beacons and cameras in inventory as well as training in ArcGIS software applications. A protocol for basic safety training for all district staff on ATV use was established and cooperative ATV training took place with the USAF Security Forces at Clear AFS. A basic safety program for snowmachine use is being established.

Two mass-casualty incidents occurred this year in the district. In June a concessionaire bus was struck by another vehicle at the intersection of the Park Road and the Parks Hwy resulting in several victims being transported to the clinic. A second concessionaire bus was involved in an accident on the Savage River Bridge in August which again resulted in several visitors being transported to local clinics and hospitals. Post-incident critiques highlighted the need for continued staff training in mass-casualty preparedness and response.

Search and rescue incidents increased this year. Incidents included: three litter carry-outs, five helicopter evacuations, and two major searches. In one incident, State Troopers requested assistance in a search for a child missing in the community of Healy. The second search was for an adult hiking who went missing in the Moose Creek/Grassy Pass area on July Fourth weekend. Both incidents showed that improvements in training have been made since 2005 but further work needs to be done to increase the number of trained searchers and search planners in the park. Ranger staff responded outside of the park several times to assist the Tri-Valley Fire Department with rescues. Cooperative training with the TVFD and the Alaska State Troopers is ongoing.

COMMUNICATIONS CENTER

Work demands and call volume in the CommCenter continues to grow. Almost 19,000 incoming phone calls were answered and routed and about 26,000 transactions were logged and documented in the office's computer aided dispatch program as of mid-October. Dispatch staff processed over 494 Case Incident Reports and filed 151 violation notices with the Central Violations Bureau and, over 2,185 flight hours have been monitored by this office.

Stats Snapsh t	**2003**	**2004**	**2005**	**2006**
Switchboard Calls	**	15,824	▲15% 18,182	▲3% 18,774
Log Entries	16,984	▼12% 15,000	▲34% 20,100	▲28% 25,717
Calls for Service	875	▲16% 1,015	▲13% 1,145	▼12% 1,100
Reports Processed	179	▲37% 245	▲39% 340	▲45% 494
Citations Processed	79	▼34% 52	▲50% 78	▲94% 151
Flight Hours Monitored				2,185

The CommCenter continues to update the park's presence on both the internet and intranet. During most of this year, the public site received only minor updates due to the national rollout of the new Content Management System (CMS) software. The park received assistance from the regional office in transferring the park's core pages to the CMS format by Founder's Day. A CMS Refresher was coordinated for a large group of park staff members so that they could begin updating their particular sections of the website.

The 2006 Road Lottery entries were again handled solely by the CommCenter staff. 6,885 applications were processed which included processing $68,850 in application fees.

During the restricted road travel season, 686 Road Travel Permits were issued to parties heading out the Park Road.

Aircraft flight following has evolved into a primary and significant function of the office. This employee safety service is provided not only for Denali aircraft, but also routinely for flights being conducted at WEAR. GAAR and YUCH aircraft also utilized Denali's services on several occasions, as did staff from the Regional Office. Fish and Wildlife pilots from Yukon Flats have filed plans with us and a Togiak NWR pilot expressed his desire to flight follow with us. Through mid-October, CommCenter staff have monitored over 2,185 flight hours, an average of about 8 hours per day!

An Alaska Public Safety Information Network/National Crime Information Center (APSIN/NCIC) terminal was installed early this year. Previously, the park had to telephone the State troopers in Fairbanks anytime that APSIN/NCIC information was needed. Procedures were established to enable law enforcement personnel in the other Alaska parks to call in and use this service, the first such NPS service in the State. Denali rangers use this critical service now almost daily, and the park routinely receives service requests from law enforcement staff at GAAR, LACL, GLBA, KATM, WRST, YUCH, and the Regional Office. The terminal has allowed the office to provide critical law enforcement information to the requesting Rangers almost immediately.

The concept of establishing the Denali CommCenter as an NPS regional dispatch office continues to be pursued. The office is providing more and varied services to a growing number of users. Feedback from rangers in other parks suggests that such users are very pleased with the services being provided to them by the Denali CommCenter. If the new technology enabling radio traffic from remote sites to be transmitted directly into the office via phone lines comes on line and works, the services that can be provided by this office will increase substantially. If this occurs, additional staffing will be needed, especially for expanded coverage hours.

BACKCOUNTRY OPERATIONS AND WILDERNESS PROTECTION

The backcountry permit operation was staffed again this year with six seasonal employees. The return of five of the six staff members from last year provided consistency for the operation as well as a level of experience and familiarity with the park's backcountry that improved information for the visitor. Another benefit of the high level of returning staff was that additional time could be spent on more advanced training such as first aid, search and rescue, and data gathering procedures rather than on just the basic operation. The experience level of the returning staff also made it possible to investigate some of the more remote areas of the park where there has been recent visitor interest. For example, there has been an increased interest in some of the more difficult routes across the Alaska Range due to recent magazine articles, so the staff focused several hikes on that area so that we could provide more accurate information to the public. The staff continued to collect information on recreational impacts in the backcountry to add to the long term monitoring database that is being developed. They actively participated in a major ranger division initiative to increase the protection of park

wildlife and other resource values during the fall hunting season. Staff activities were focused almost exclusively on this initiative during August and September.

The park Wilderness Program Coordinator assisted in this effort by leading the development of an action plan for wildlife protection efforts for the season as well as setting up procedures and training staff on technologies such as GPS to help gather field information in a manner that could be incorporated into long term databases and the park's GIS system. He also organized a training session for the division on both general park and hunting specific regulations to help orient new staff members to the unique regulatory environment of Alaska. The Wilderness Program Coordinator actively participated in the CORE analysis process that was conducted at the park and subsequently developed an analysis for the feasibility of establishing a new backcountry permit fee. He also wrote several funding proposals for the division, one of which competed successfully at a national level and will provide support to help address Off Road Vehicle (ORV) threats to the park. The Wilderness Program Coordinator assisted other divisions on park priorities such as the backcountry management plan, an environmental assessment for subsistence ORV use, a major road traffic/wildlife research project, a consolidated GMP, a Kantishna area plan, a south side development plan, planning for a new telecommunications system, a water resources management plan, a long range interpretive management plan, a review of proposed changes in park management policies, and a revision of the design guidelines for the park road. He also provided many compliance reviews for other operational activities and research projects and worked closely with the Resource Management division to coordinate activities between the two work groups. He continued to participate in wilderness management issues on both a regional and national level as the Alaska park representative on the NPS National Wilderness Steering Committee.

KENNELS

Cabin supplies were purchased and delivered via dog team to 16 backcountry cabins. Supplies included several safety items such as replacement stoves, lanterns, water filters, headlamps, snowshoes, emergency food, and medical kits.

36,171 visitors attended the Sled Dog Demonstrations and approximately 5,500 visitors came for a visit to the kennels outside of demonstration times.

Kennels staff provided special curriculum-based programs to 11 school groups from throughout the state and country. Work was initiated between the Kennel Manager and the Education Specialist to establish a curriculum based distance learning program for schools focusing on the park's sled dogs. Focus points will be Science, Wilderness, and Teamwork.

SOUTH DISTRICT

Fee Collection and Administration

2006 was the second year in which the park collected entrance fees from visitors taking glacier landing flights provided by Talkeetna-based air taxi operators. Every two weeks in the first year of this new collection operation, Talkeetna staff would travel to the various air taxi offices to retrieve entrance fees paid by clients and collected for the park by the air taxi operators. NPs staff always contacted the operators in advance by phone, fax, or email to let them know that they were coming. Despite the advance warning, operators frequently didn't have the fee tickets ready when NPS personnel came by. Additional trips to the airport were frequently required to make the requisite pick-ups. Even after getting the tickets, Talkeetna staff then had to generate an invoice for each company and payment would then be made off that document. In all the procedure and process was time-consuming and not efficient.

Talkeetna staff developed a simplified and much more efficient practice for 2006. A "self-generating invoice" was developed for the air taxi operators to complete. The completed invoice is now mailed to or dropped off at the Talkeetna Ranger Station along woth a check to the NPS for the fees collected by the individual companies, along with copies of the entrance fee tickets sold by the companies. Numerous steps and wasted time are eliminated in this new process, and the companies now calculate the fee revenue owed to the NPS themselves instead of the park doing this work for them. The ticket copies provide for appropriate tracking and auditing.

The administrative support workload of the Talkeetna Ranger Station VUA staff continued to grow. Over 30,000 people visited the ranger station, and staff sold over $20,000 of merchandise for the Alaska Natural History Association. The lead VUA and her two-person seasonal staff processed 1338 McKinley/Foraker climber pre-registration transactions, issued 366 Special Use Permits for McKinley and Foraker expeditions, and processed voluntary registrations for 585 backcountry climbers from 168 different expeditions. Leave No Trace briefings were provided in most of these transactions. Desk staff issued 336 Clean Mountain Cans during the season.

South District Backcountry Operations

District staff conducted hunting patrols to the Kichatna Spires, the Tokositna, the Peter Hills, and one hunting patrol down Bear Creek with a float out the Tokositna to the Chulitna River. South District resources were also sent to the North District to assist with hunting season patrols on the north boundary.

Clean Mountain Can (CMC) Program

Four significant changes occurred in the CMC program this year:

1. New provisions for the disposal of solid human waste were developed and incorporated in the park Compendium. The new provisions parallel the proposals for human waste management in the recently approved Backcountry Management Plan. The new provisions provide the ranger staff with tools to manage solid human waste on the

upper West Buttress route and glacier landing strips. The program relied on voluntary compliance for the first five years of the program and now has mandatory and enforceable compliance provisions.

2. Lead Mountaineering Ranger Roger Robinson worked with the can manufacturer to identify and make design improvements in the cans, the most significant of which was incorporation of a flared opening. The new opening allows for easier cleaning and a more practical size for the toilet seat. The opening also eliminates the disposable ring which reduces cost and waste (both in and out of the Park). 500 of the new Model III CMC were purchased.

3. The outhouses at the Ruth and Kahiltna base camps were not put in place this season. This significant operational change was implemented because of late season melt at both these locations in 2005 that exposed the contents of the deeply buried latrines. Toilet privies have been in use on the Kahiltna since 1977. Roberta Sheldon, proprietor of the Mountain House required all of her guests to use CMC's instead of crevassing their solid human waste. With over 1000 CMC's available for issue to visitors, we were able to handle the additional new demand for CMC's. However, at one point in early June, less than 50 CMC's were left available to hand out. Only through careful management of can distribution and circulation were we able to avoid a gridlock in the system. Robinson worked closely with the cleaning company on methods that would speed up their turnaround time including transportation of dirty CMC's to the cleaning facility in Wasilla by Talkeetna staff members..

4. Half way through the season, instituted a new requirement that all CMC's had to be lined with 1 mil. bio-degradable bags. During an inspection of the cleaning process, it was discovered that solid human waste without extra moisture (urine, etc) required a 4-8 hour soaking period. Without such an advance soaking, the cans could not be successfully cleaned. In contrast, can lined with the plastic liners did not require a pre-soak, greatly increasing their turn-around time. The cleaning company had no problem disposing of the liner bags. Many climbers were using these lightweight liners in the CMC's all along and then crevassing them appropriately. Permanent adoption of this liner approach may eliminate the need to purchase a SCAT cleaning machine, which would simplify program execution going forward

Search and Rescue Summaries

On June 29th at 5:25 pm, the 14,200-foot Ranger Camp was notified of the collapse of a client from a guided group on the fixed lines at approximately 15,500 ft. After assessing the client the guide initiated CPR and continued for 30 minutes before ceasing efforts as he could detect no signs of life. The patient was transported to the ranger camp. No signs of life were present at this time and the patient was pronounced dead at 11:35 pm. An autopsy was performed by the State of Alaska Medical Examiner and the cause of death was determined to be natural and consistent with sudden death of cardiac origin.

On June 26th 11:00 am the Ranger Camp at 14,200ft on Mt. McKinley's West Buttress Route was notified of a problem with an assistant guide just above the 17,200-foot camp.

The assistant guide was exhibiting severe signs of AMS and breathing difficulties indicative of the onset of HAPE. Rangers advised the team to return to the 17,200-foot camp and place the patient on oxygen. Once on oxygen, the patient was able to descend with assistance from his team, to the 14,200-foot camp where he was assessed by NPS staff and volunteers. After treatment and consultation with the Park's physician sponsor, rangers decided to evacuate the patient at the earliest chance as there was an underlying problem or illness. The next day the NPS contract helicopter was able to evacuate him. The patient was diagnosed as having pneumonia after reaching a definitive care facility.

Steve Whitney and Ben Krasnow were the two mountaineering guides working for an Alpine Ascents International expedition on June 16th. Their group was on a weather delay at Base Camp while waiting to fly back to Talkeetna. The two had just completed cooking dinner for their clients when one of the two MSR Whisperlite stoves they were using experienced an O ring failure, causing the pressurized fuel bottle to explode. The two received various 2nd degree burns to their extremities and faces. Poor meteorological conditions that evening prevented two attempts (one by the NPS helicopter and the other by a DHC-2 Beaver owned by Talkeetna Air Taxi) to extract them. They were evacuated via fixed wing aircraft operated by TAT the following morning and taken to the Sunshine Clinic for definitive medical treatment.

On June 7th, an American climber reported to NPS staff at the 14,200-foot camp that he had injured his hamstring while running to first base during an in camp whiffle ball game. After seven days of rest, the patient was still unable to bear weight on the injured extremity. On June 15th, the patient was air evacuated from the mountain.

On June 5th, a Japanese climber reported to NPS staff at the 14,200-foot camp that she had frostbitten her fingers. NPS staff treated her injuries and over the next few days she was assisted down to the 7,200-foot camp and released.

On June 3rd, two members of Expedition AMS-5-Wilkinson where evacuated by the NPS Lama helicopter after receiving treatment for frostbite from NPS personal at the 17,200-foot and 14,200-foot camps the previous evening.

On May 12th, Sue Nott and Karen McNeill departed from the Kahiltna Base Camp on the Southeast Fork of the Kahiltna Glacier to begin a climb of the Infinite Spur on Mount Foraker. From interviews conducted later it is believed that the pair left base camp with fourteen days of food and eight to ten fuel canisters. The two spoke with another party of two on May 14th who later that day observed Nott and McNeill starting the route. No other contact was made with the pair. Two weeks passed during which time interest in Nott and McNeill's progress prompted at least four fixed–wing flights by the south face of Foraker by air taxi pilots and climbers on their way to or from base camp. The only sign of the pair were tracks leading to the base of the route but none indicating retreat. Based on discussions on May 31st among park staff and others, including pilot Paul Roderick, and due to mounting concern for their welfare, the National Park Service began formal search operations for the team when weather cleared on the evening of June 1st using the NPS contracted Lama Helicopter. Helicopter and fixed-wing aircraft, as well as

a ground observation team, conducted intensive search operations as weather permitted through June 6th. During the search a total of twenty-seven hours of low level aerial searching covering the route, possible fall lines and likely descent routes was accomplished. On June 2nd a pack, later confirmed to be the one carried by Nott, and several other items of gear including a sleeping bag and jacket were found in an avalanche debris cone approximately 300 feet (100 meters) to the east of the start of the route. The only other evidence of Nott and McNeill were intermittent tracks that could be reasonably confirmed to be theirs to an elevation of 16,600 feet (5060 meters) on the slopes leading to the south summit. A period of prolonged poor weather severely limited search operations from June 7th to June 15th with only one high level fixed wing flight possible on June 8th. Based on survivability assessments plans to scale back further search activities were implemented on June 11th. On June 15th the Lama helicopter conducted additional searching to an elevation of 14,500 feet but found nothing new. At that time Nott and McNeill's cache was retrieved from the east side of the '2nd Pass' area, among other items in that cache was two full fuel canisters and approximately four days of food. Prolonged stretches of poor weather and wind conditions at higher elevations made search opportunities in the remainder of June and beginning of July minimal. On July 9th the Lama helicopter made a final search of the debris cone for any new evidence that might have appeared due to snow melt but found nothing. On July 10th after discussions between the Aviation Manager Dave Kreutzer, South District Ranger Daryl Miller and Superintendent Paul Anderson the decision was made to suspend the search.

On May 28th, a team attempting Mt. McKinley's West Buttress to Muldrow Glacier traverse, contacted NPS staff and asked for assistance in handling a panic stricken member. After several phone conversations, an agreement was reached for the team to retrace their route and descend the West Buttress with no assistance from NPS. On May 29th the team called NPS staff once more for route finding assistance, they descended the West Buttress with no further incident.

On May 28th, at approximately 7:45 am, John Tatzalaff came to the 14,200-foot ranger camp suffering from signs and symptoms of high altitude pulmonary edema. Tatzalaff was treated with oxygen and altitude medications and remained under National Park Service (NPS) care until 4:05 pm on May 28th. Tatzalaff was evacuated to the 7,200ft camp, from the 14,200-foot camp, by the NPS contract "Lama" helicopter and later transferred to Lifeguard for transport to Anchorage.

On May 26th 5:00 pm, the Ranger camp at the Kahiltna base camp was notified by a member of the 2006 Korean Hunter Team of a problem with two of their climbers (Hong Sung Hyun and Whang Cheung Sik) near the top of Mt. Hunter (14,573ft). They were apparently separated, with one of them unable to move because of frostbite and the other one was stuck. The pair was near the top of a technical route on the N. Buttress of Hunter. Sik, who was stuck, had communication with the base camp party but Hyun who had frostbite on his feet had none. It was determined that as they could not ascend or descend the route they needed a rescue. However, due to extremely high winds throughout the Alaska Range this would not be possible until they abated. Throughout the

day of May 27th, the winds remained high but a decrease to flyable conditions occurred in the evening and the helicopter was able to fly in and land by each of the victims and subsequently fly them down to base camp.

On May 25th Edward Maginn of the 'Whiskey' expedition was to climb the upper West Rib route followed by a ski descent of the "Orient Express" face. Following a successful summit the team skied down to the top of the Orient. At approximately 10:45 pm, while at the 18,300' Maginn lost his balance, fell backwards and attempted to arrest unsuccessfully. He then somersaulted out of the sight of his two partners and ultimately stopped at the 15,700' elevation. The other two skiers notified Rangers at the 14,200' camp of the accident who in-turn assembled a hasty team to affect a rescue. While preparations were being made the fallen climber began moving and stumbling down the remaining slope towards the 14,200' camp; halfway down the descent he fell partway into a crevasse from which he extricated himself. The hasty team made contact with him at approx. 14,700', conducted an initial medical assessment and treatment, and transported him the remaining distance to the Ranger camp via cascade litter and backboard. The remaining skiers descended without incident and Maginn was monitored throughout the night. Maginn was evacuated from the 14,200' camp the following morning to the 7,200' via the NPS contract helicopter, where he was transferred to a Life Guard helicopter and taken to Alaska Regional Hospital for evaluation and treatment.

On May 22nd at 11:39 am, Ryan Sorsdahl the lead guide for a Rainier Mountaineering Inc. (RMI) climbing expedition, sought assistance from the rangers at the 14,200-foot camp. Despite following a gradual ascent to the 14,200' camp Sorsdahl became ill and sought assistance from the local NPS patrol. Following a medical examination he was diagnosed with acute mountain sickness, cerebral edema and an upper respiratory infection. Sorsdahl was placed on oxygen and monitored throughout the evening. The following morning another neurological examination was performed which revealed that his symptoms had not improved. Subsequently he was evacuated via the NPS contract helicopter, flown to base camp, and transferred to the Alaska Regional Hospital via Life Guard helicopter.

On May 17th at 6:00 pm, Rafael Schauwaers of the 'BME Belgium' expedition, despite following a gradual ascent to the 14,200-foot camp, became ill and sought assistance from the local NPS patrol. Following a medical examination he was diagnosed with High Altitude Pulmonary Edema (HAPE) and a possible upper respiratory infection. The individual was placed on oxygen, administered medications and continuously monitored and treated. He was eventually evacuated via the NPS contract helicopter on May 19th, flown to base camp, and transferred to the Alaska Regional Hospital via an Alaska Air National Guard helicopter.

On May 12th, Jerry Hopfe presented himself at the ranger camp at 14,200-foot on Denali requesting an evaluation of his frostbitten fingers. Dr. Jay Mathers discovered blebs (blisters) from 2nd degree frostbite on the thumb and first two fingers on the right hand and darkened toes on both feet. Hopfe rested in the medical tent that evening and was

evacuated by helicopter on May 13th. The frostbite on the toes resulted in the amputation of eight tips to the first knuckle.

On April 26th at 11:30 pm, H. Dean Barkley, Jr. of 'Team Flatlander' requested assistance from the 7,200-foot ranger camp for shortness of breath and chest pain. The patient had a history of cardiac problems and approximately 2 hours out of base camp experienced a cardiac event, the expedition was able to return to the Kahiltna Base camp. Patient was evacuated via the NPS contract SA-315B Lama and transferred to Providence Medical Center's Life Flight.

Mountaineering and Medical Training

In March, instructor Mike Gibbs, founder of the Rigging for Rescue class, provided the mountaineering staff with a very specialized course in rope rescue work. The session included participation by members of the Alaska Air National Guard's 212th PJ unit.. The training was conducted in Little Switzerland off of the Pika Glacier. The focus of the 70+ hours of training was high angle snow and ice lowerings. In preparation for the course, the South District staff hosted a two day technical rescue workshop.

Buck Tilton from the Wilderness Medical Institute conducted a Wilderness First Responder Course at the Talkeetna Ranger Station in April. Attendees included South District Staff as well as rangers from Katmai and Wrangell St. Elias National Parks. Attendees completed 24-hours of continuing education for Wilderness First Responder re-certification as well as Alaska State Emergency Medical Technician recertification. All applicable Alaska State regulations were followed. Topics covered: CPR Recertification, Patient Assessment, External Bleeding Control, Basic Shock Treatment, Spinal Immobilization, Pneumatic Anti-Shock Garment, treatment of cold injuries, treatment of HAPE and HACE, and Medical Emergencies.

Lama Helicopter Operations

The 2006 South District helicopter contract started with the arrival of the SA-315B Lama helicopter in mid-April. The contract ran through mid-July. Required short haul and step-out training was completed. Outside of search and rescue assignments, the Lama was used to place snow telemetry equipment at a site in the Ramsdyke Creek area. The project included sling four loads to the site from mile marker 131 on the Parks highway. Four people were placed in the field each morning and removed every evening. The snow telemetry crew was based out of Trapper Creek. The helicopter was also used by the South district planning personnel. The helicopter also provided support to park planners working on the South Side plan.

The helicopter slung the 14,200-foot ranger camp down to Base camp at the end of the season. It took 17 loads to move the associated equipment, with each load averaging 450 pounds.

The helicopter flew a total of 72.5 hours during the season at a flight rate of $650 per hour. 15 hours were paid out of the helicopter account for missions including: glacier clean-up, camp support (re-supply), slinging the 14,200 foot camp down to Base Camp

for removal, short-haul & step training, placement of a weatherproof box at 17,200 feet, and relocation, removal, break down, and support of the Crosson repeater. The ship flew 47.5 hours in support of SAR operations, 1.8 hours for ranger training, 2.2 hours for park planners, and 6.6 hours for Resource Management staff.

Military Helicopter Operations
Military helicopters flew 29 hours in support of the mountaineering operation, 14 for search and rescue, 10 for camp placement and removal, and 5 hours for training.

The military High Altitude Rescue Team used the Alaska Range for training from April 8 though April 15. CH-47 Chinooks were used to place a jet fuel site on the South East Fork of the Kahiltna glacier. The Chinooks also placed the ranger support camp on the West Buttress. Pavehawk helicopters from the 210th were used on two occasions. These ships transported equipment to and from Talkeetna during the Rigging for Rescue training in Little Switzerland and subsequently placed 250 gallons of jet fuel on the Kahiltna glacier during the Nott SAR on Mount Foraker. A C-130 from the 211th rescue squad was used to fuel the Pavehawks during the Kahiltna refueling operation.

Aircraft Rental Agreement (ARA), Contract Vendors, and Fleet Aircraft
Vendor aircraft flew a total of 53.3 hours of flight time in support of the mountaineering operation, projects, and SAR missions in the district. Flight hours were almost equally divided between SAR missions and flights to support patrol operations on Denali. Fixed wing flights were procured from Rust Air Service (K2), Hudson Air Service, and Talkeetna Air Taxi; ERA helicopters provided helicopter support.

Notable and First Ascents
Of the five new routes completed in 2006, three were put up by Alaska Range veterans and two were completed by climbers new to the range. It was a relatively quiet season in the mountains with lower than average numbers on Denali. The age old dilemma about what constitutes a new route continues to be an issue. Does a new line constitute a "new route" if the climber(s) do not go to the summit? Some climbers answer this question by asserting that a "route" is a path taken between two points, therefore a climbing route need not reach a summit to be valid. Others defend the opposing position, asserting that without a summit a climbing route is only an attempt. This report chronicles "notable" climbs, and of these, one on Broken Tooth and one on Grosvenor did reach the respective summits.

April climbs all occurred in the Ruth Glacier area. Yearly visitors Mark Westman and Eamonn Walsh climbed "The Warrior's Way" in a 19.5 hour push. Their route on the east face of Mt. Grosvenor marks the 4th ascent of the peak (this team also made the 2nd and 3rd ascents in 2005). A couple of weeks later the same pair found good conditions on the East Couloir of Broken Tooth. Starting on the Coffee Glacier on May 10 they climbed 12 mixed pitches and turned around after reaching the ridge but not the summit. Earlier on Broken Tooth, Fumitaka Ichimura and Katsutaka Yokoyama climbed "Before the Dawn". Their route climbs a weakness on the North Face for 23 pitches to the summit In late-May, the team of Jen Olson and Katherine Fraser visited the remote Kichatna

Spires. During a 3 week period they completed several climbs, the most noteworthy being a 14 pitch route on Sunrise Spire that rises from the Cul-de Sac glacier to the summit ridge. They coined their route "Wholesome Razor.

The coup-de-tas for the year was a route climbed on the South Face of Denali. Dubbed the "Canadian Direct", the route joins the American Direct between 16,000 feet and 17,000 feet. Climbing alpine style, Canadians Maxime Turgeon and LP Menard completed their climb in three days from the base of the south face to high camp on the west buttress. After a rest back at the 7,200-foot base camp, the duo returned to the base of the South Face in the East Fork to retrieve gear cached there prior to the climb.

Denali/Foraker Climbing Statistics
1151 climbers registered to attempt Denali in 2006; 581 reached the summit for a 50% success rate. 199 climbers reached the summit in May, 315 in June, and 67 in July. Expeditions spent on average about 18 days on the mountain. Individuals from 38 different countries and 43 states attempted the mountain this year. 28 climbers registered for Mt. Foraker, none of whom reached the summit.

ADMINISTRATION DIVISION

The Administration Division was very busy coordinating the park's Position Review and CORE Operations Analysis conducted in FY06. This exercise also involved facilitation of the park's Budget Cost Projection Analysis.

HUMAN RESOURCES

Staffing
Staff coordinated and participated in about ten Position Management Review Board meetings. The Board was established in FY05. 61 local hire announcements were issued, resulting in 58 local hire certificates. In addition, the staff produced, rated, and ranked 45 competitive hire vacancy announcements. Over 1000 Personnel Actions were processed, 120 Background Investigations conducted, and approximately 50 drug tests were administered by park staff.

The Student Temporary Employment Program (STEP) was coordinated this year to make changes to announcements, obtain certificates on time, and make sure all name requests were listed correctly. Students were also advised of various ways to apply for jobs with the Federal Government.

Parkwide Training
Several on-site training sessions were held for park managers and supervisors. Bill Wade conducted two, two-day sessions of Performance Management supervisory training. A second training, a 40-hour Position Management Workshop, was facilitated by Vikki Loufakis, a supervisory training held in conjunction with the CORE Analysis.

The park staff participated in 48 TELNPS classes. Several TEL tapes were presented to park managers and supervisors related to specific priority initiatives and activities during the year: Position Management (3 sessions), Safety for Supervisors (3 sessions), 21st Century Relevance: Increasing Visitor & Partner Participation by Reflecting the Diversity of America (one large group session with follow-up discussion).

Information Technology
This year two Central Alaskan Network kiosk machines were installed at the MSLC and the DVC. These kiosks will provide visitor information about the Cenatral Alaska Network Inventory and Monitoring Program.

Increasing security requirements place more restraints on the IT staff. This year staff improved the record-keeping processes for Annual IT Security Training among DENA employees. In addition, staff worked to comply with numerous IT Security requirements as they arose throughout the year

IT staff bought new videoconferencing equipment for the MSLC, to facilitate NPS videoconferencing between DENA and other NPS sites. New equipment was also installed at the Talkeetna Ranger Station, to enhance Denali's education program on the South side of the Alaska Range. The park conducted the first successful videoconference from Toklat to the MSLC

With the new videoconferencing equipment in place, the IT staff provided technical support for the 2006 Alaska Science Symposium that the including videoconferencing capabilities, program transmission from the DVC to the MSLC, and a streaming video program transmission on the World Wide Web.

Connectivity between the east and west ends of the park has always been problematic. This year, the IT staff assisting the Fire Management Office and the University of Montana to successfully established an experimental wireless backbone from the MSLC to Toklat, Wonder Lake Ranger Station, and Wickersham Dome.

FY06 is the first year of the Denali College of IT Knowledge to provide IT training for NPS employees. Two courses were provided Microsoft Excel and Microsoft Access training.

FY2006 Finance Overview

Fund Source	Totals
ONPS Park Base Allocation to Park	$10,660,000
Park Base Funds Obligated	$10,655,000
Non-Base Project Funds Allocated (1)	$4,970,980
Non-Base Project Funds Obligated	$4,727,800
Total Park Recreational Fees Collected	$2,718,330
Total 80% Fee Demo Funds Allocated	$2,124,290
Total 80% Fee Demo Obligated	$1,875,740
Total 80 % FY2005 Fee Demo Carryover	$506,420
Total 20% Fee Demo Funds Allocated	$148,290
Total 20% Fee Demo Funds Obligated	$101,110
Total Concession Franchise Fees Collected	$2,791,320
Total Concession Franchise Fees Available	$2,573,770
Total Concession Franchise Fees Obligated	$1,249,230
Total FY2005 Concession Franchise Fee Carryover	$1,208,700
Total 30% Parks Pass Fee Allocated	$1,010
Total 30% Parks Pass Fee Obligated	$1,000
Total Donations Collected	$50,280
Total Donations Obligated	$17,640
Total FY2005 Donations Carryover	$51,680
Total Quarters Collected	$218,900
Total Quarters Obligated	$336,440
Total FY2005 Quarters Carryover	$334,070
Total Special Use Permit Funds Collected (2)	$321,630
Total Special Use Permit Funds Obligated	$316,540
TOTAL, All funds allocated to park	**$20,747,520**
TOTAL, All funds obligated	**$19,280,500**

(1) Project Funding included Challeng Cost Share; Cyclic and Cultural Cyclic Maintenance; Hazardous Waste Program, Volunteers in Parks, Cultural Resources Preservation Program, Water Resources Program, Planning Funds, Fire Management Funds, Collections Mgmt, Subsistence Mgmt, Youth Conservation Corps, Parks as Classrooms, NRPP, WASO GIS

(2) Special Use Fees include Mountain Use Fees charged to climbers to support mountaineering education and sanitation and Professional Photography Permits; Road Lottery Use

FY2006 Human Resources Report

Promotion From	New Grade/Position	Incumbent	Comments
GS-11 EDUCATION SPEC	GS-12 CHIEF INTERP	NIXON	
GS-12 FACILITIES MGMT SPEC	GS-13 CHIEF OF MAINTENANCE	SCHOLTEN	
GS-5 BUDGET TECH	GS-6 BUDGET TECH	MILLIKEN	
GS-7 BUDGET TECH	GS-9 BUDGET ANALYST	LASELL	
GS-7 PLANNING ASS'T	GS-9 OUTDOOR REC PLANNER	LINDHOLM	

Vacancies Created	Office	Vice	
GS-11 EDUCATION COORDINATOR	INTERP	NIXON	vacant
GS-11 FACILITIES MGT SPEC	MAINT	SELIG	term
GS-11 SAFETY SPEC	SUPT	COBBOLD	vacant
GS-12 CHIEF OF CULTURAL RES	CULTURAL	TWITCHELL	vacant
GS-13 CHIEF OF INTERP	INTERP	STRANSKY	
GS-5 ADMIN ASS'T	INTERP	MOFFAT	vacant
GS-5 ADMIN ASS'T	MAINT	STRAUGHN	
GS-5 ADMIN ASS'T	RESOURCES	DEMERS	
GS-5 DISPATCHER	RANGER	PATELLA	
GS-5 OFFICE ASS'T	MAINT	SAUVEY	
GS-6 BUDGET TECH	MAINT	MILLIKEN	vacant
GS-7 BUDGET TECH	RESOURCES	LASELL	
GS-7 SUBSISTENCE TECH	CULTURAL	HAYDEN	vacant
GS-8 SECRETARY	SUPT	WALKER	
GS-9 BUDGET ANALYST	ADMIN	ANTHONY	
GS-9 PHYSICAL SCIENTIST	RESOURCES	HULTS	vacant
WG-5 MAINT WORKER	MAINT	RODWELL	vacant
WG-7 MAINT WORKER	MAINT	DEMERS	vacant

Vacancies Filled	Office	Incumbent	
GS-4 ADMIN ASS'T	ADMIN	LASELL	
GS-5 ADMIN ASS'T	MAINT	SAUVEY	
GS-5 ADMIN ASS'T	RESOURCES	KAPALKA	
GS-5 BUDGET TECH	RESOURCES	DEMERS	
GS-5 DISPATCHER	RANGERS	BURNELL	
GS-5 OFFICE ASS'T	MAINT	KEITH	
GS-5 VISITOR USE ASS'T	INTERP	LEBEL	
GS-6 SECRETARY	SUPT	CICCIARELLA	
GS-7 FACILITIES MGMT SPEC	MAINT	PEARSON	term
GS-9 ARCHEOLOGIST	RESOURCES	WYGAL	term
GS-9 CURATOR	RESOURCES	LAKEMAN	
GS-9 ECOLOGIST	RESOURCES	PHILLIPS	term
GS-9 ECOLOGIST	RESOURCES	LIEBERMAN	term
GS-9 EDUCATION SPEC	INTERP	BURR	term
GS-9 PARK RANGER	RANGERS	PARISEAU	
GS-9 PARK RANGER	RANGERS	SLOOP	
GS-9 PARK RANGER	RANGERS	SMITH	

GS-9 PARK RANGER	RANGERS	O'CONNOR	
WG-7 MAINT WORKER	MAINT	OBERG	term
WG-7 MAINT WORKER	MAINT	TRAVIS	term
WG-9 USRO	MAINT	MCCOMBS	