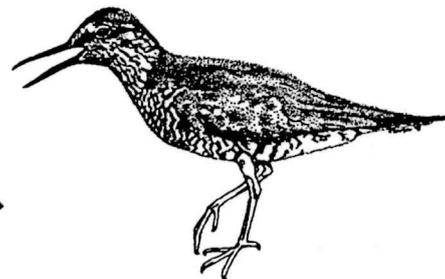


THE TATTLER



The Science Newsletter for
Denali National Park and Preserve

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From Gordon's Desk

Just over three months ago, my family and I drove up to the front of park headquarters for the first time. We were tired (we had just finished three weeks on the road), very anxious to get settled in, and quietly excited about the prospects of a new living situation and an opportunity to work with fabulous park resources. We received a warm welcome for which we are very appreciative. While our transfer was not completely without flaw, it was generally a positive experience.

The initial excitement has now worn off and we are beginning to face reality head-on. We have moved on to the transitional phase of being overwhelmed. I have found that to be particularly true with regard to my work. My last transfer was not so long ago that I have forgotten it's circumstances. It is amazing the similarities between the experiences (initial excitement, a feeling of being overwhelmed, and, fortunately, an eventual feeling of control).

I hope I have set the stage for success here at Denali and am determined to work in that direction.

Most of you are probably not aware of the fact that the Division of Research and Resource Preservation is involved in an important strategic planning effort. This is an effort which I am pushing in order to bring about organizational renewal. We are fundamentally examining how we do business. Included in this effort are reviews of organizational structure, programs and

planning, infrastructure and logistics, funding, administrative concerns, and communications. All aspects of divisional operations are under scrutiny including the research function.

The planning will generate a document which should provide direction for the next 5 to 10 years. This is not to be confused with the Resources Management Plan which directs what resource issues we need to be dealing with. Instead, this document will facilitate our assuring that we have the organization, procedures, and facilities in place to implement the Resources Management Plan.

Some of you will recall the recent "Target Parks" initiative.

The Office of Management and Budget asked the Service to include in the agency's budget request, funding for a select group of parks with the intention of fully funding their resources management programs. Under a very short deadline, those parks had to develop proposals which outlined what they needed. It was a scramble for all involved. The last I heard was that funding had been cut in half for those parks. My point is not that the work was folly but that I want to see us in a proactive position. We need to be prepared should the golden opportunity come our way. Even if it doesn't ever come we will have ideas which can be implemented as circumstances allow.

It is my hope that tackling this need for renewal in an organized fashion will improve acceptance of change, reduce stress and employee uncertain-

ty, improve efficiency, and place the park in a better situation to compete for funds.

The prospects for improving research and resource preservation at Denali are excellent. I am excited about the opportunity to participate in making those improvements and look forward to working with you in this direction.

Gordon Olson
Chief, R&RP

LETS GET GEOPHYSICAL !

Glacier monitoring began this spring with re-survey of the existing index stakes in the Kahiltna and Traleika Glaciers, and control surveys that were brought into the fixed monuments using both GPS and conventional survey techniques. Larry Mayo of the USGS and Keith Echelmeyer of the Geophysical Institute have designed a north-south survey transect across the range at Kahitna Pass that will allow us to compare the geoidal and ellipsoidal effects on the survey of these monuments. Large vertical masses, like Mt. McKinley, exert a sideways gravitational attraction on other nearby objects which can bend or warp conventional survey results. GPS survey techniques are not affected by this type of attraction so the data can be used to "correct" conventional survey data. To further confuse the issue, the GPS techniques are affected by another problem related to the ellipsoidal orbit of the satellites, but we'll get into that in another issue of the Tattler.....Have a nice nap!

In more down to earth glacier matters, we are continuing to establish glacier termini photo/survey stations at numerous northside glaciers. These stations will provide a baseline for periodic photos and surveys to monitor glacier termini changes over the long term. The efforts will involve 3 or 4 day outings into different glacial termini. Volunteer help in the form of strong backs and assailable minds are requested for these outings. See Phil Brease or Greg Probst for details.

Coordination with Bradford Washburn is planned in July for re-measurement of the Muldrow Glacier target that Brad installed in 1976. Average movement calculated from various surveys since 1976 indicate the glacier is flowing at a relatively steady rate of 1/2 foot per day (at the target vicinity) during all seasons of the year.

Soils mapping and soils instrumentation will be ongoing in the Rock Creek Drainage under the Inventory & Monitoring program. Personnel from the USDA Soil Conservation Service will assist us in the baseline mapping and the University of Alaska will advise us on monitoring possibilities. Monitoring parameters for soils include; Ph, exchangeable ions, and carbon, nitrogen, and phosphate cycling.

Phil Brease
Geologist

GLEN CREEK CAMP

Glen Creek Camp is a remote field camp located at the confluence of Glen Creek and Moose Creek, five miles upstream from mile 89 of the Denali Park Road. Access is by helicopter or four-wheel drive vehicle.

The camp is a cooperative effort between the Alaska Regional Office and Denali Park. Regional operations support the Kantishna Mining Claims Acquisition Program. These include: Hazardous Waste Inventories; Reclamation Inventories; Mineral and Surface Appraisals; Mineral Validity Examinations; Abandoned Mine Land Surveys; Land Surveys and; Mining Operations Management.

Denali researchers Roseann Densmore and Ken Karle are studying revegetation of mine tailings and recontouring stream beds in a way that increases silt deposition.

The camp houses up to 35 people. 8 X 10 wall tents and weatherports are used as quarters, larger

weatherports serve as offices and work areas. A kitchen and dining area are housed in a 24 X 40 weatherport.

In 1991, the camp experimented with solar energy for pressurizing water and charging batteries. This season a solar water pumping station will be added.

Visits to Glen Creek Camp are encouraged. Please contact Jim Trumbull - the camp manager, in advance. Camp can be accessed by hiking or biking (along the unimproved road that parallels Moose Creek). Visitors on volunteer status may be flown in if the helicopter work schedule allows. See Carmen Bubar for volunteer information.

Meal service has changed from last year. Visitors will either have to pay for a meal or bring their own food and cooking supplies. The price per meal has not yet been established - Jim Trumbull will have more information on food service in the near future.

One last research project worth mentioning - the Culicidae Tolerance Aptitude Index Study, needs help. Anyone wishing to participate as a subject, see Joe Van Horn.

Jim Trumbull
Camp Manager

NRMTTP

The NPS's sixth class of the Natural Resources Management Trainee Program began this Spring on March 16. Two staff members from each region in the United States and one staff member each from the Washington office and the Denver Service Center are in the class.

As a member of this class I will be attending a total of 25 weeks of classroom, laboratory, and field training exercises over a span of 18 months. This program is designed to provide each participant with experience and training in natural

resources management, monitoring, and research administration. These structured courses will be held in such locations as employee development centers, universities, and parks or regional offices as well as through tailored assignments designed for on the job training projects.

Hubert J. Chakuchin
Assistant Res. Mgt. Specialist

BE ON THE LOOKOUT FOR FUGITIVE ROAD DUST

Travelers on the Denali Park road have been alerted that derelict dust particles are escaping the road surface and banding together as dust clouds. These roving gangs of dust particles, technically known as "fugitive road dust," have been identified by the Denali Access Task Force as serious threats to public well-being. They actively block the view of wildlife from the road, sneak into the respiratory passages of unsuspecting bus-riders, suffocate innocent roadside plants, and are generally considered to be a nuisance. According to air quality researchers at park headquarters, the dust particles are the only consistent air pollutants in Denali. Occasionally they join with reactionary clouds of wildfire smoke or temperamental plumes of volcanic ash to take over the view entirely.

While contending with convicted air pollutants such as dust, smoke and ash, air quality biologists are also charged with keeping an eye on potential offenders like ozone and sulfur dioxide. Since 1986, ozone levels and meteorological parameters have been observed around the clock in an NPS stakeout at the air quality shed (secretly located behind the dispatch supervisor's cabin). Twice a week, in what has been called the molecular equivalent to random border searches, air is pumped through filters to see if it is harboring criminal pollution molecules such as sulfur dioxide or ammonium nitrate. Even precipitation is checked on a weekly basis for lurking atmospheric pollutants. So far, the air has come up

with an incredibly clean record: all sampled pollutant concentrations are well within state and federal air quality standards. These characters can be shifty, though, so biologists will continue to keep a close watch on them.

The proposed Healy Clean Coal Project has thrown air quality researchers into a flurry of activity this summer, since it would border Denali's Class I airshed. Suspecting a possible visibility-diminishing tendency well-documented in power plants elsewhere, NPS and the Alaska Industrial Development and Export Authority began a visibility study in January. Automatic movie cameras are pointed toward the existing coal-fired power plant in Healy, documenting minute by minute activities of the air. Closer to park headquarters, 35 mm cameras photograph the air hourly both toward and away from Healy. No significant effects have been captured on film yet, but certain well-traveled road dust particles have reportedly tried to moon the cameras.

How can we protect ourselves from these mischievous dust particles? If funding allows, maintenance personnel will try to imprison them with various organic particle binders on test sections of the road, then see which ones work best. USDA surplus peanut butter has been suggested as the ideal binding agent, but unfortunately cannot be used in this park due to concerns that bears might become habituated to human sources of food. Until these measures can be tested and implemented, people traveling on the park road are advised to take extreme caution when crossing the Savage River into the fugitive road dust zone.

Andrea Blakesley
Bio Tech

WHY ARE MOOSE BORN IN THE WOODS?

Where do moose give birth? What are the characteristics of birth sites? Why do moose choose such sites and not others? These are questions that moose researchers Vic Van Ballen-

berghe (U.S. Forest Service) and Terry Bowyer (University of Alaska, Fairbanks) are trying to answer this summer in a study that will continue 3 to 4 years.

Calving sites are located by following radio-collared cow moose and by random observations of uncollared cows. Sites are visited and data are recorded on a number of variables related to site location, forage abundance, cover, distance to roads and human activity, etc. These data will be compared to those collected at a set of 30 randomly selected sites not used by moose. The basic hypothesis being tested is that cows select calving sites that are optimal for predator avoidance or forage abundance. We also hope to learn additional things about calving including the general distribution of birth sites in relation to human activity and development, annual changes in birth sites as a result of weather and plant phenology, and survival of calves in relation to the kinds of sites selected by their mothers. During the past 15 years, calf survival at Denali between the Park entrance and Teklanika has been very low--of every 100 calves born only 10-15 survive to autumn. It is reasonable to think there are explainable patterns why some survive while most do not. Perhaps the survivors get a good start in life by having mothers that select favorable sites.

Vic Van Ballenberghe
U.S. Forest Service Biologist

RECLAMATION 'R' US

Placer mining for gold has severely disturbed many riparian ecosystems in northern regions. Placer mining involves removing riparian vegetation and topsoil, excavating gravel from the floodplain, old terraces, and the active stream channel, and processing the gravel to remove the gold. Processing also removes most of the fines from the gravel. Until recently, topsoil and fines were usually buried under tailing piles or washed down the stream, and processed rock and gravel

were left in large tailings piles. These tailing piles often revegetated very slowly; some tailing piles over 50 years old have little or no vegetative cover.

Glen Creek is typical of many placer-mined streams in the Kantishna area. It is characterized by significant stream channel adjustment and poor riparian zone vegetation. Unstable or excessively confined streambeds, as well as over-steep floodplains are evident along many reaches of the six mile length. Mining tailings have replaced much of the native streambed material. As a result, Glen Creek has not established a proper flow capacity, floodplain function, or natural slope and pattern. Additionally, populations of many of the macro and microinvertebrates, as well as slimy sculpin and grayling, have been severely impacted.

Understanding the interrelationships between riparian systems and the hydrologic and geomorphic processes at work in those systems is crucial to developing a reclamation scheme for disturbed stream channels. Riparian zones act as floodplains, and function to dissipate stream energies associated with high flows. In return, sediments are deposited in the floodplain, which permits the continued development of the alluvial valley floor. Therefore, the hydrologic and geomorphic components of a riparian zone not only determine such features as pools, riffles, bed material, and streambank formation, but also determine the basic biological habitat characteristics.

How do we repair damaged stream channels and floodplains? Using predictive hydrology, we can estimate the size of the annual floods which carry the sediments needed for floodplain/vegetation development. By using hydraulic equations, we can design the shape of the channel and floodplain to help facilitate the deposition of the sediments, as occurs in an undisturbed stream. And by instituting a rigorous monitoring program, we can tell how our experiments, as well as natural processes, are encouraging a riparian restoration.

Work continues this summer at Glen Creek to develop and test these reclamation techniques.

Ken Karle
Hydrologist

WOLVES NEAR AND FAR

For a number of years, there have been one or two wolves along the park road who acted totally unafraid of people and buses, and hunted and travelled along the road regularly. These wolves have provided hundreds of people with their first and probably only view of a wild wolf. Until this year, we have been lucky in that none of the wolves that acted this way were radio-collared. That may have changed, however, with the capture of a 105-pound female wolf on the Thorofare Bar in May. Since her capture, this nonbreeding wolf has travelled back and forth between the Toklat River and Wonder Lake, probably spending considerable time on the road. She has been seen at Toklat and on the porch of Tom Chisdock's cabin.

There is no evidence that the capture of an animal tends to cause habituation to humans. In fact, capture is an important part of the park's highly successful program to de-habituate bears that have become too bold. Wolves and bears are completely unconscious when they are handled, and the capture experience is probably unpleasant enough to make most animals shy away from humans. It was apparently not enough to scare the Thorofare wolf, however, and for better or worse her collar and red ear tags may be seen by many park visitors.

One possibility would be to re-capture the wolf and remove the collar and eartags, but she is a particularly valuable wolf to have collared because she may provide a link to a new pack that has split off from the East Fork Pack. Learning about such a new group is valuable both for research and for back-country closure management. It is unfortunate that some people's

only view of a wolf may be of one that has obviously been handled by humans, but her half hour of captivity shouldn't have compromised her worth as a wild wolf. Eartags are put on some captured wolves (those we think we may not be able to recognize later) because wolves sometimes lose their collars prematurely.

Farther afield, eleven members of the Little Bear wolf pack that normally live in the Kantishna Hills left their territory in mid-May and headed southwest along the Alaska Range. They travelled over one hundred miles along the range, then probably cut through Rainy Pass and were last seen near Pontilla Lake in the Squentna River drainage. We are beginning to wonder if they will ever come back, and hope to be able to monitor them until they do or until they settle somewhere else.

Tom Meier
Wildlife Biologist

WILDLIFE INVENTORY AND MONITORING NEWS

There are three wildlife projects being conducted as part of the large I & M program that has been geared up this summer. The work on each of these projects is being coordinated by the Research branch of our division and conducted by researchers from outside the Park.

A small mammal monitoring project is being conducted within the Rock Creek watershed right near HQ. The work is being done by two researchers from the University of Alaska, Fairbanks. They have set up permanent plots and sample these plots for one week out of each month of the summer season.

There are two other projects, both aimed at monitoring birds. One of these includes a series of point counts performed in Rock Creek where the researcher goes to each of a number of previously marked points and counts all the birds he sees and hears within a specified time period. This work is being conducted by a researcher

from the Alaska Bird Observatory in Fairbanks.

The third and probably the most visible of these projects is called MAPS, which stands for Monitoring Avian Productivity and Survivorship. This project consists of a number of stations along the Park road where birds are captured in nets and banded before being released. Each station includes some point count work as well, and these locations must be clearly marked so that they can be easily found for subsequent visits. A lot of you have noticed some flagging on the north side of the road along Igloo Creek. That flagging is essential for accurate location of points for the MAPS station there. This station happens to be the most productive of the five stations in operation and will give us much valuable information on avian populations in that area over the years to come.

If you have questions about any of these projects, contact Jeff Key or Gordon Olson. There is some opportunity to visit the project sites but we ask that you only do so after making previous arrangements.

Pat Owen
Bio Tech