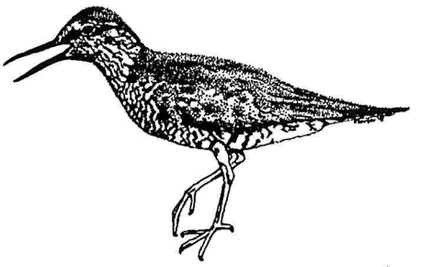
THE TATTLER



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Long Term Ecological Monitoring

In 1992, the park launched a Long Term Ecological Monitoring (LTEM) and protocol development program in the Rock Creek watershed. This program is interdisciplinary in nature with scientists and resource managers working on a wide variety of topics. During 1994, administration of the program moved to the National Biological Survey but park involvement remains substantial. Following are reports on a few of the projects associated with the LTEM program.

Establishment of Small Mammal Monitoring Protocol

Small mammals play a significant role in ecosystems as consumers of seeds, seedlings and fungi, predators of insects, hosts for parasites, and prey for furbearers and predatory birds. The abundance of these animals can vary dramatically from year to year. Little is known about microtine population dynamics in interior Alaska.

This study, started in 1992, is designed to develop baseline information and monitoring procedures for the small mammal population in the Rock Creek watershed of Denali National Park and Preserve. Live-trapping, the sampling method of choice, provides information on species richness, abundance, density, survival, and dispersion.

Live-trapping was conducted during 1992 and 1993 on four permanent grids in forest and riparian habitats. Each grid consisted of 100 Sherman traps placed at 10m. intervals. In 1994, in addition to the grids, three webs were established consisting of 166 Sherman traps placed on concentric circles at 4m. spacing with a total diameter of 128m. The new webs will aid in developing a density estimate. Traps were opened for one 5-day session in each month June through September of 1992. They were opened for six 5-day sessions on alternate weeks from 20 June through 4 September 1993. This trapping schedule was repeated in 1994. Traps are baited with irradiated sunflower seeds, supplied with bedding material and checked three times daily (6:00 AM, 1:00 PM, 8:00 PM). Species, sex, weight and reproductive condition were determined for each animal removed from traps.

Mark and recapture procedures provide important information on survival and dispersion and were employed with some animals. Passive Integrated Transponder (PIT) tags are implanted subcutaneously to permanently mark individuals. There were no deleterious effects on individuals and identification of individuals was rapid with small risk of misidentification.

Abundance estimates were calculated using program CAPTURE. There was a marked increase in Clethrionomys rutilus between 1992 and 1993. Some segregation of habitat between microtine species was seen in 1993. This could be due to differences in microhabitat selection or an outcome of interspecific territoriality. This year (1994) further analysis is being done into the microhabitat composition of these grids and webs.

Survival and recruitment are sensitive indicators of population productivity and health. Future population abundance is dictated by these parameters. Data in 1994 and future years will aid in answering the questions biologists have been trying to answer about microtine cycles and their causes.

Pamela Furtsch
UAF Graduate Student

Merlin Monitoring

Studies of the taiga merlin (Falco c. columbarius) were begun at Denali in 1983 by the Raptor Management project of the U.S. Fish and Wildlife Service, because little was known about this species within Alaska and merlin populations had been impacted by pesticides in other portions of their range. From 1990 through 1993, Scott Wilbor, from the University of Alaska Fairbanks, conducted an intensive study of a population of merlins in Denali. This study focused on nesting ecology and reproductive performance of merlins which were found along major river drainages in northeastern Denali and in the Wonder Lake tundra region. Nesting habitat use during the study was 72.5% magpie nests, 18.8% ground nests and 8.7% other elevated platforms such as parasitic tree growths, squirrel's nests, and cliff potholes. Low/medium shrub tundra was found to be the dominant habitat of prey utilized by merlins. Addled eggs were collected for contaminant analysis and nestlings were banded to provide information on migration areas, migration routes and breeding dispersal distances.

In a follow up to Scott Wilbor's project, two volunteers from the Research and Resource Preservation Division of Denali, Holly Scheyer and Dan Sidle have been surveying potential merlin nesting ranges this summer. With help from Carol McIntyre (Alaska Regional Office, NPS), Jeff Bouton (Alaska Bird Observatory) and other park personnel, 35 potential territories were surveyed as of 6/29/94. Of the 35 territories, at least 16 were occupied by a nesting pair and individual birds were either seen or heard at 13 others. When fledglings emerge,

reproductive success will be examined. In 1993, reproductive success (nests with young produced to potential fledgling) for known pairs was 75%. We're hoping this year it will be at least that high if not better!

Holly Scheyer
Biological Technician-Wildlife

Monitoring Avian Productivity and Survivorship (MAPS) Stations

The Institute for Bird Populations (IBP) in Point Reyes, California has been monitoring birds in Denali National Park since 1992. IBP coordinates the only nationwide research program dealing with passerine productivity and survivorship. MAPS was established because of a drastic decline in songbird populations in recent years. Using the MAPS protocol, trends in passerine populations can be monitored and evaluated. The results will be used to initiate further research and management that will prevent continued songbird population decline.

The research is ongoing at five sites that characterize Denali's major habitats. Each site is sampled once every ten days using two methods. The first method involves a ten minute auditory and visual census at nine points. The second involves capturing birds in mist nets, placing bands on their legs, recording the band number and various other morphological data. Ten mist nets are set up at each study site.

In 1993, 1181 birds of 28 species were banded. 1994 is the third year MAPS research has been conducted in Denali National Park. The program started June 10 and will end August 28.

Sean Farrell & Pariss Garramone
Technicians-Institute for Bird Populations

Development of Landbird Monitoring Protocols for Alaskan National Parks

This is the third year that the Alaska Bird Observatory, in cooperation with the National Biological Survey, has been censusing birds in Denali National Park and Preserve. The primary objective of this research is to determine the distribution and abundance of all species of birds breeding in the park, and to develop protocols to monitor their population trends over time. During 1992 and 1993, the work focused primarily on the avian community using the spruce forests at the east end, middle, and west ends of the park road corridor (i.e., the Rock Creek drainage, Sanctuary River drainage, and the Wonder Lake area). In 1994, the study was enlarged to include the entire 95-mile park road corridor, extending from the Park entrance to areas west of the Kantishna airstrip. Fieldwork took place from June 5-25, during the peak of the breeding season for most migratory birds breeding in the Park. Three biologists conducted the surveys.

A number of techniques are used on this project. One of the primary ones involves stopping along the park road every half mile, and counting the number of singing individuals for a 3-minute period. Fifty census points were surveyed per morning from approximately 3:30-9:30 AM. Because most of the work involves counting birds based on their vocalizations, all three observers had to be familiar with all the songs and call notes of birds potentially breeding in the park. After the morning's systematic surveys were completed, the crew returned to various locations to follow up on interesting observations. The research will hopefully continue for the next four years.

Peter Paton
Biologist-Alaska Bird Observatory

For Further Information

Contact Joe Van Horn at Denali Park Headquarters for further information on these projects or other activities connected with the Long Term Ecological Montioring Program at Denali.