

Spotlight on a Region Science And Resources Management Activities In Alaska

Fire Ecology/FIRE-PRO

During the 1982 field season, a pilot study was initiated that will contribute to a comprehensive fire management plan for Denali National Park and Preserve. Joint fire ecology research and FIRE-PRO monitoring efforts were concentrated in that portion of the park and preserve located north of the Alaska Range. The helicopter supported operation was based at Wonder Lake.

Vegetation and fuel loads were sampled in plots on a variety of burned sites and fuel types to obtain information about past occurrences of fire, fire effects on vegetation, plant succession and fuel loads. FIRE-PRO and research teams established before and after burn plots and monitored fire behavior on two lightning-caused fires that burned nearly 3,000 hours before rain extinguished them. Alaska Regional Research Ecologist Gary Ahlstrand and Denali Resources Management Specialist John Dalle-Molle directed the integrated research and resources monitoring study.

MAB Fire Ecology Project

Dr. Charles Racine, Johnson State College in Johnson, Vermont, was funded by Man and the Biosphere Program to conduct studies on the ecological role of fire in the tundra ecosystems of the Noatak River Preserve during 1981-82. Racine and his crews focused their studies in the lower Noatak about 140 km upriver from Kotzebue in an area where 1977 and 1981 fires were available for studies. The studies and investigators covered: 1) mapping of fires in the Noatak from fire records and LANDSAT photos (Racine), 2) intensive study plots in the 1977 fire and experimentally burned sites (Racine), 3) biomass and productivity studies (J. Dennis, of the National Park Service, Washington Office), 4) responses of white spruce and mountain alder to fire (W. Patterson, University of Massachusetts), and 5) vegetal implications of past fires from pollen cores in tundra ponds (W. Patterson).

Fisheries Studies in Denali National Park

The second summer of fisheries investigations in Denali NP have focused on the Kantishna Hills area in parklands that were added in the 1980 Alaska Lands Act. This area is heavily mineralized, has been extensively mined in the past, and placer mining is continuing. Studies focused on determining distribution and abundance of Arctic grayling, habitat loss documentation, fish collections, stream

gauging, temperature, turbidity and heavy metal sampling. Recently mined tributaries offered little fish habitat, apparently because of numerous alterations such as stream channelization, loss of bank coves and pools, artificial barriers, acute periodic high turbidities, potentially toxic mine drainage from riparian landfills, and reduced aquatic invertebrate populations. Streams heavily mined many years ago, however, such as Caribou Creek, still offer fair to good aquatic habitat in unmined stream reaches. Denali fisheries studies were conducted by Alaska Regional Fishery Biologist Ross Kavanagh and Denali Fishery Biologist Scott Meyer. Heavy metals sampling and analysis of water and fish tissues were accomplished through a reimbursement agreement with the U.S. Fish and Wildlife Service.

Wildlife Research in Denali

Grizzly bear-human interactions tops the list of wildlife priorities in Denali NP. Substantial numbers of incidents in the park began occurring only about 1977. The date coincides with both total and backcountry visitation increases following greater access to the park in 1971 when the Parks Highway opened. Prior to that date, Denali Park was accessible only by railway or by the circuitous and unpaved Denali Highway. Work in 1982 directed by Kathy Joep, focused on the greatest perceived source of bear problems — inadequate storage of food. Tests were made with backpackable food containers (also being tested in Sequoia/Kings Canyon and Yosemite) and storing food in waterproof containers in tundra ponds. The treeless tundra of Denali presents almost no possibilities for hanging food away from bears.

Caribou calving was observed for the second year in relation to potential mining development on the Cantwell or Dunkle Hills calving grounds. Also, monitoring of road-wildlife relations was conducted along the Denali Park road. In particular, visitor attitudes to the shuttle bus were compared to attitudes sampled in 1972, and numbers of wildlife seen and reactions were compared to similar data collected by Dr. Fred Dean and Diane Tracy, University of Alaska, in 1974. Close attention was paid to comparisons in wildlife response between shuttlebus and private vehicular traffic.

Wildlife Surveys

Inventory work in 1982 included a raptor survey along a portion of the Noatak River and Dall sheep count in portions of Gates of

the Arctic NP. Wildlife studies are directed by Francis Singer.

Humpback Whales in Glacier Bay

In FY 1981 the NPS funded three humpback whale research contracts in Glacier Bay. The studies focused on (1) whale feed, (2) acoustics, and (3) whale behavior in relation to vessel traffic. A consortium of cruiseship companies donated additional money and a research vessel to assist in the feed study. A second and final summer of similar humpback whale research activities is underway with the National Marine Fisheries Service providing on-the-ground contract administration as in 1981. Preliminary results are due by winter 1982/1983.

A contract with the University of Alaska CPSU to conduct an expanded statistical analysis of whale behavior (primarily stressed and unstressed breath logs) will be completed in December, 1982. During winter/spring 1983 another Section 7 Endangered Species Act Consultation with the National Marine Fisheries Service is anticipated and possibly another humpback whale conference, sponsored by the Marine Mammal Commission. The results of all research activities should receive a full review at this time and may determine the extent and direction of continued restrictions (if any) on vessel traffic in Glacier Bay NP.

Future Directions of the Alaska Science Program

Regional Chief Scientist, Al Lovaas, concluded that the main resource problems facing Alaska in the future include bear-human interactions at Denali and Katmai, pressures to alter the road system in Denali, fire prediction and behavior information, mining activities, present and possible aquaculture projects, and potential stresses on both fish and wildlife populations from subsistence harvests in parks or from both subsistence and sport hunting in preserves. Many populations still are undetermined as to size or distribution. Productivity and allowable harvest of many Alaska populations, especially those in northern areas, is being understood for the first time. All the biological implications of the management goal in Preserves ("healthy populations") and in Parks ("natural and healthy populations") need to be explored. The State Subsistence Act and subsistence on National Parklands continue to be controversial subjects at the State level and will no doubt require attention.