

**Quantifying bear numbers and bear-human conflicts in the Kennicott Valley of Wrangell  
St. Elias National Park and Preserve, Alaska**

**Research Summary**

James Wilder\*

R. Gerald Wright\*\*

\*conducted as a graduate student, Department of Fish and Wildlife Resources, University of Idaho; currently, Wildlife Biologist, NPS Regional Office, Anchorage, AK

\*\*Research Scientist and Professor, Idaho Cooperative Fish and Wildlife Research Unit, University of Idaho, Moscow, ID

**Introduction**

The 5.4 million ha Wrangell St. Elias National Park and Preserve (WRST) was established in 1980 as part of the ANILCA legislation. It currently is one of four National Park Service (NPS) units in Alaska accessible by the state road system. A major access route into WRST is via the McCarthy Road, an approximately 100 km route connecting Chitina and McCarthy in the Chitina River Valley. The road follows the historical route of the Copper River and North Western Railroad built in the early 1900s to haul rich copper ore from the Kennicott mines near McCarthy.

The gravel road is a state owned right-of-way and passes through state, private, Native Corporation owned, and NPS lands. The road serves rural residents along the road corridor and provides the gateway for increasing numbers of visitors to the historic communities of McCarthy and Kennicott and the interior of the park. Visitor numbers are growing as a consequence of greater publicity, the opening of a Princess Tours hotel in Cooper Center near park headquarters,

and NPS acquisition of the lands and buildings along with initial interpretive efforts at the Kennicott mill site. At present the road is narrow and in many places overgrown with vegetation - limiting off-road views and reducing sight-distances to unsafe levels. Visitor services and interpretive facilities are limited and maintenance problems abound. As a result the State of Alaska in conjunction with the NPS has developed a Scenic Corridor Plan that outlines the facilities and road improvements necessary to increase the safety of the road and to better accommodate visitors.

Data on the number of visitors to WRST prior to this study are lacking, however most observers agree that more and more visitors have been coming each year. The developments above combined with the eventual enactment of a corridor plan will only increase visitor use levels.

### **Background for this Study**

A major concern associated with increasing visitor use and the attendant development of campgrounds and other visitor-use facilities along the McCarthy Road and in the McCarthy Kennicott area has been the potentially adverse interactions with certain species of wildlife. It should be noted that the McCarthy Road is not similar to the road corridor through Denali National Park and Preserve where the type of access and visitor activities are carefully controlled, resulting in minimal disturbance to wildlife (see Yost and Wright 2001). In contrast, resident and visitor access and activities on the McCarthy Road are largely unrestricted. Only about 8% of the lands bordering the road corridor are owned by the NPS. Of particular concern were the problems and conflicts associated with black and brown bears; a concern compounded by the fact that there was no information available on bear numbers, distribution, species

composition, and the number of conflicts in the area.

We designed this study to address two major objectives. The first was to gain an understanding of the type of bear/human conflicts that currently existed or that might develop in the McCarthy-Kennicott area as a consequence of increased visitor use, home-site development on privately owned lands in the area,, and NPS facility development. We hoped that our findings would allow us to explore various means to mitigate existing and/or avoid potential human/bear conflicts.

Secondly, we sought to document the general biological and behavioral characteristics of the black and brown bear population in the area and contrast those with the specific characteristics of bears involved in conflicts with humans. We obtained the data on biological characteristics and other population parameters through non-invasive genetic (DNA) sampling and analysis using a network of hair traps combined with remotely triggered cameras, hair samples taken from rub trees, bear/human conflict sites, and hair or tissue samples taken from problem bears killed in the area during the study.

## **Findings**

During the course of the study (summers of 2000, 2001), a total of 78 hair traps were built of which 85% produced samples. Hair samples were also obtained from rub trees identified in the study area and samples taken from bears that were killed during the study. A total of 572 useable hair samples with roots were obtained during the study. Almost 86% of all samples came from hair traps. Based on genetic analyses conducted at the University of Idaho, the specific species could be identified on 491 of the 572 samples; 30 were brown and 461 were black bears. From these samples a total of 92 individual bears were genetically identified; 84 black and 8

brown. This is a large population of bears for a relatively small area and the proportion of black bears was far larger than anticipated.

There were 157 reported bear-human conflicts in the McCarthy area during the two years of which 132 could be attributed to a specific species. McCarthy area residents were involved in 80% of these conflicts. Garbage is a major attractant for bears in the area and the major reason bears come into conflict with humans is due to their efforts to acquire human food. Conflicts with problem bears resulted in the confirmed deaths of 13 black bears and 6 brown bears during the two summers. However, total actual bear deaths may have been double these figures. Residents are permitted to kill bears when in “defense of life and property”. Overall, brown bears were involved in a disproportional amount of the conflicts. While brown bears accounted for only eight of 92 (8.7%) individual bears identified, they were involved in 49 of 132 (37.1%) of the reported bear-human conflicts attributable to a specific species as has been found in other areas. Males of both species were disproportionately involved in the conflicts.

We concluded from habitat surveys that there is an abundance of high quality natural food in the study area for bears, particularly the berries from the soapberry plant (*Shepherdia canadensis*) which ripen in July and August. The abundance and high nutritive value of this plant combined with the availability of human foods is a powerful draw luring bears into the area in the summer months, the same time period that visitor use peaks. This is a factor the NPS needs to take into consideration as visitor-use increases. Because many bears are subsequently killed when they get into trouble with humans, we concluded that at present, the McCarthy-Kennicott area may serve as a population sink for local bear populations meaning that mortality exceeds reproduction and/or immigration. To alter this trend, the NPS needs to encourage better methods

of food storage among residents and visitors, develop a garbage collection system for the residents, and carefully plan the placement of any new NPS visitor-use developments.

Reference cited:

Yost, A. and R. G. Wright. 2001. Moose, caribou, and grizzly bear distribution in relation to road traffic in Denali National Park, Alaska. *Arctic* 54-41-48,