Chilkoot Bear Education and Research Station
Haines, Alaska
March 2005

BROWN BEAR RESEARCH AND HUMAN ACTIVITY MONITORING AT CHILKOOT RIVER

2003-2004

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M.S. WILDLIFE ECOLOGY

Research Performance Report
1 July 2004 – 30 June 2005
Document # AA18249210011

This progress report is from a five year research project. The data may be refined and published in the future.

Citation: Crupi, A. P. 2005. Brown Bear Research and Human Activity Monitoring at Chilkoot River, 2003-2004. Unpublished manuscript. 64 pp. [online] URL: http://www.geocities.com/chilkootbear/adfgreport05.html

PROJECT TITLE: Brown Bear Research and Human Activity Monitoring at Chilkoot River.

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SEGMENT PERIOD: 1 July 2004 – 30 June 2005

WORK LOCATION: Chilkoot River, Haines

STATE: Alaska

SUMMARY

The Chilkoot River, near Haines, experienced 40% growth in visitation and vehicle traffic between 2000 and 2004, predominantly wildlife viewers and anglers. Along with greater recreational use of the area has come increased conflict between people and bears. In an effort to ameliorate the impacts, the Alaska Department of Fish and Game and Alaska State Parks, through a collaborative agreement, sponsored a new monitor program to assist with public education and interpretation of natural and cultural history. The bear monitor program began in 2002 and, in addition to public outreach, collected visitor use statistics. Human activity monitoring along the Chilkoot River estimated over 83,000 visitors use days in 2004, while brief visitor interviews found that over 62% of the visitors from the United States. The largest visitor constituencies came from Yukon Territories (21%), Haines (20%), and Europe (10%). The majority of visitors interviewed were involved in wildlife viewing (74%) and fishing (22%). Several relationships useful for monitoring future activity patterns were determined and we provide recommendations for improving human safety and recreation.

The second component of this report highlights 2003-2004 research data from the Chilkoot Bear Education and Research Station (CBEARS). Throughout the systematic 5-y study, our research technicians investigated the ecological interactions between people, brown bears, and salmon, and we now focus on evaluating the effectiveness of the monitor program.

Through our bear habitat use assessment, we found that on average bears spent 70% of their time foraging on the far side of the river, and 30% on the roaded-side of the river. Despite a record return of pink salmon in 2004, the number of independent bears observed (7) was the lowest in 5 years, in contrast to the highest number observed (15) in 2003. I evaluated the influence of recreation, salmon abundance, and environmental attributes such as weather and river level on the seasonal timing of bear activity. Overwhelming in each of the analyses, high rates of bear activity consistently occurred when angler and vehicle numbers were lowest, irrespective of fluctuations in salmon abundance. Conversely, decreased bear activity was most significantly correlated with high numbers of anglers and vehicle traffic, at both the daytime and seasonal level. Therefore, it was apparent that bears were displaced by high levels of human activity during the weeks when maximum numbers of live salmon were available to bears. This resulted in bears capturing fewer lipid-rich, live salmon (38%), while post-spawned carcasses containing 76-86% less fat, constituted 60% of their catch. As salmon intake is important to bear reproductive success, this could potentially impact population productivity.

One objective of CBEARS' research project highlighted in this report is an evaluation of the bear monitor program. Some obvious program achievements were:

(1) Decreased bear consumption of angler caught fish and entrails, providing better human safety for sport fishermen.

(2) Increased distance between people and bears, with fewer instances of people approaching bears within 50 meters.

(3) Two fold increase in bear use of an access corridor set aside for bear crossings.

(4) Dramatic decline in the number of vehicles camping along Chilkoot Lake Road.

(5) Improved human behavior and more compact distribution of people viewing bears.

Program inadequacies included:

(1) Lack of manpower. With only one monitor and many close bear-human encounters (10% of all activity within 50m) occurring simultaneously in different locations, only one situation could be handled by the monitor at a time.

(2) Appropriate human behavior was often contingent upon monitor presence, and the lack of monitor enforcement authority potentially affected effectiveness.

(3) Comparisons of monitor-collected information to more detailed CBEARS research data, did not adequately reflect the seasonal patterns of bear and human activity. It also was not possible for the monitor to reliably determine bear numbers or individual bear identities without the assistance of research technicians.

This study provides the scientific foundation for improving management of the recreational uses and natural resources of the Chilkoot River. If managers work to facilitate coexistence between bears and people, future generations may continue to rely on this region for cultural history, recreation, sport-fishing, subsistence, tourism, and wilderness values. This report will serve to improve future bear monitor programs and development of necessary recreational facilities. We encourage continued research and monitoring as a means to adapt management strategies to the needs of the community and natural resources.

Key Words: bear-human interaction, bear monitor program, brown bear, Chilkoot River, Haines, pink salmon, sport-fishing, *Ursus arctos,* visitor use, wildlife viewing.