



BEAR TRACKS

A Newsletter on Grizzly Bear Studies in the
Central Arctic, NWT, Canada

No. 2

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SECOND EFFORT PAYS OFF

Research into the ecology of grizzly bears in the central Arctic continued into 1996. However, capture efforts in mid-May were compromised by reduced snow cover which hampered tracking. Several rain showers further hastened snow melt. Only 17 bears were captured by early June of which 10 were fitted with satellite radio-collars. One collar was also replaced because the VHF transmitter was malfunctioning. Another capture session was quickly planned with the help of industry sponsors to deploy the remaining radio-collars after the snow had completely melted.

The second effort proved successful as 22 more bears were captured, of which 11 received radio-collars. Therefore, 39 grizzly bears were captured - the same number as last year. Although 21 radio-collars have been deployed so far this year, we expect two or three more bears may be captured before summer's end.

Of those bears collared in 1996, 8 were adult males, 8 adult females with cubs, and 5 were lone females.

The 18 bears captured but not radio-collared were mostly young subadult bears too small to collar. However, all captured bears are eartagged and lip-tattooed.

The second effort was made possible by logistical support from industry. Canamera Geological Ltd., Echo Bay Mines Ltd., and Kennecott Canada Inc. made their field camps available and assisted with locating bears. Canamera and Monopros kindly supplied fuel at several camps which assisted our capture effort.



Ray Case adjusts a satellite radio-collar on an adult female grizzly bear. The equipment in the foreground measures bioelectrical impedance along the bear's body. This procedure, together with the bear's weight, is used to estimate the amount of body fat. The bear is placed on a tarp to avoid loss of electrical impulses to the ground.

We now have 40 satellite radio-collars reporting. This includes 20 collars still operating from last year. One collar deployed this spring has not reported although the VHF transmitter continues to function. Fortunately, this bear ranges in the Lac de Gras area where Rescan staff can relocate her regularly. We will replace this collar at a later date but because this bear is an adult female with two yearling cubs, we prefer to wait awhile before subjecting her to another capture. Two other collars are silent from last year and we will replace them when the bears are re-captured next spring.



WEST KITIKMEOT / SLAVE STUDY SOCIETY

In May, the Management Board of the West Kitikmeot/Slave Study Society (WKSS) gave their approval in principle to the Grizzly Bear Project in recognition that the population status and ecology of barren-land grizzly bears is poorly documented. WKSS approval secures the necessary funding required for the study and acknowledges community, scientific, and industry support for such work.

The WKSS is a five-year regional study focusing on a 213,000 km² area of the western arctic known to geologists as the Slave Geological Province (SGP). The SGP includes four types of host rock that contain gold, base metals, and diamonds. Exploration and development activity have increased significantly in recent years, which has led to concern over cumulative effects of such activity and the lack of baseline data needed for environmental impact statements. The WKSS will facilitate the necessary studies to address significant gaps in baseline information. The initiative brings together industry, Aboriginal groups, the territorial and federal governments, and an environmental coalition.

Naonayaotit Traditional Knowledge Study

The Department of Renewable Resources is now a partner in the Naonayaotit Traditional Knowledge Study. The Kugluktuk Angoniatit Association is project manager for this study and BHP is financial manager. This study will provide us with an unprecedented opportunity to merge traditional knowledge with scientific investigation.

PHYSICAL CONDITION AND DIET

Rob Gau and Vivian Banci continued their studies on body condition, food habits, and habitat use of grizzly bears. Bears emerged from their dens this spring in a wide range of physical condition. Rob examined nine bears this spring with results similar to last year. Body fat composition values ranged from 7 to 26% (average = 13%). Caribou and overwintered berries were the primary foods eaten this spring. So far this summer, bears have taken advantage of the caribou's early return to the Lac de Gras area from the calving grounds.



NEW PARASITE?



Fecal samples were collected by Rob Gau to help quantify important food items in the bear's diet. An analysis of parasite incidence was undertaken with the assistance of Dr. Susan Kutz at the Western College of Veterinary Medicine, University of Saskatchewan, Saskatoon. The flatworm *Diphyllobothrium ursi* and roundworm *Baylisascaris transfuga*, both common to bears, were found in many samples. However, an unidentified first stage larvae of a Protostrongylid (lungworm) was found in two of 53 scat samples analyzed. The parasite differs from the caribou and muskox lungworm found in the Coppermine River region. Therefore, this parasite may be a new lungworm species or the first time an otherwise "known" species has been reported in grizzly bears.



DEN SITES

We monitored 21 radio-collared bears until denning. We lost contact once the bears entered their dens because the ground blocks radio-collar transmissions to the satellite. General densite locations were determined by locations received immediately prior to the loss of signal or at the time bears emerged from the den in spring. Actual locations of dens were obtained by searching these areas in spring by aircraft and on the ground once bears had left the area. Dens in the Lac de Gras area were located by Vivian Banci in the fall by tracking the VHF beacon on the collar.



The first collared bear to avoid the arctic winter denned on September 29th. The other bears followed by mid-October (average date was October 19th). Generally, females with cubs denned before males and bears around the Kugluktuk (Coppermine) area denned before those in the Lac de Gras region. A few males remained active until early November but they were preoccupied with feeding on last-minute caribou kills. One female (without cubs) had her den collapse a few days after entering. With no other den site and 100% snow cover on the ground her situation probably seemed grim, but she found a place under an overhanging rock and spent the winter there under the snow.



An adult female grizzly bear stands to get a better look at a passing helicopter.



Phil McLoughlin, a graduate student at the University of Saskatchewan in Saskatoon records site information at a grizzly bear den. Phil hopes to characterize important habitats for denning by bears and determine an individual's fidelity to denning areas. He also will examine the importance of esker habitat for bear dens.



The first collared bear to emerge from its den did so on April 18th and the others followed soon after. Generally, those bears collared in the Kugluktuk area remained in their den later than those further south in the Lac de Gras region. By May 21st, all bears had emerged from their winter sleep.

Not all den sites could be confirmed given the uncertainties in some of the satellite radio-locations at the time of denning. Tracking the VHF signal facilitated actual den site location and we hope to make greater use of the collar's VHF beacon this fall.



THE NWT GRIZZLY BEAR PROJECT

PROJECT LEADERS

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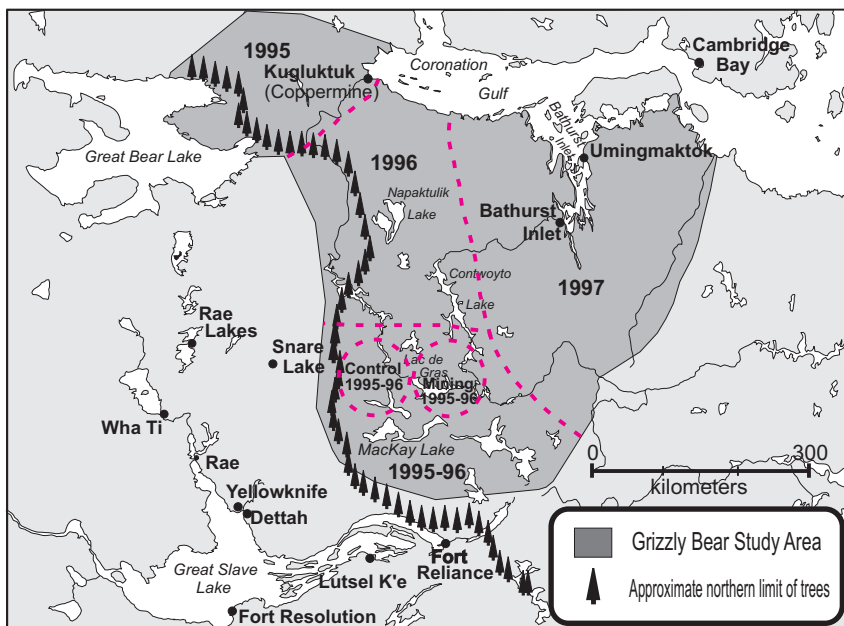
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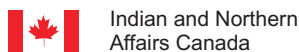
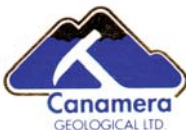
The Study Area

Description of the search zones for capturing barren-ground grizzly bears in the Slave and Bear Geological Provinces, 1995-1997. Also depicted are the control and mining sites used to assess potential impacts of mining activities on bear movements.

Acknowledgements

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PROJECT SPONSORS



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