

STATE OF ALASKA

DEPARTMENT OF FISH AND GAME

DIVISION OF WILDLIFE CONSERVATION

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MEMORANDUM

TO: David James
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DATE: 2000-10-16

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FROM: Craig Gardner
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SUBJECT: Chisana Composition Survey

On 30 September 2000 Rod Boertje and I completed the Chisana caribou herd composition and radiocollared 8 5-month female calves. Rod located 25/26 active collars. Most of the herd was distributed along Beaver Creek primarily in Alaska. We found 2 groups (9 and 35 caribou) in Yukon within 5 miles of the Alaska/Yukon border. We located 17 groups and compositioned 412 caribou. Group size ranged from 2-54 caribou ($\bar{x}$ =24.8, s.d.=15.59).

The calf:cow ratio 6.1:100 cows. The calf:cow estimate using the radiocollar sample was 5.9:100 (1/17). The Chisana herd has suffered from poor calf recruitment since 1989 (0-14; $\bar{x}$ =5.9:100). The bull:cow ratio was 19.5:100. The bull:cow ratio has declined from 41:100 in 1991.

Between 1 October 1999 and 30 September 2000, 4 of 27 radiocollared cows (2 adults and 2 yearlings) died (14.8%). Sample sizes are small but these data indicate the mortality rate for cows 1 year and older was 11% (2/19) and for calves it was 38% (3/8). Using composition and modeling data, the bull mortality rate was estimated to be 21%.

Using Patrick's model, the fall 2000 estimated herd size was 421 caribou down from about 1,900 in fall 1989 (78% decline). This year the herd was more concentrated and easier to find. Increasing the radiocollar sample during the past year aided our survey efforts. This year, we located only 2 groups that a radiocollared animal was not present. In addition, 8 - 12" of snow covered the herd's range and helped sightability. I ran Patrick Valkenburg's model using this year's data and it reflected a better survival rate for cows and bulls 1 year and older during the past 3 years than we estimated using survey results (model attached). The key for monitoring a small herd with large amounts of habitat is a high radiocollar sample.

Similar to last 2 years, the few remaining calves in late September-early October were very healthy. We compositioned 20 calves of which 14 were females. We captured 8 of these to radiocollar and to weigh. The average condition index was 3.3 on a scale of 1 to 5 (5 being the highest rank) and the average weight was 137.1 pounds (s.d.=8.983). In 1998 and 1999, the average weights were 147 and 140 pounds. As a comparison, this year the average weight for Fortymile female calves was 127.2 pounds.

Between the Yukon Dept. of Renewable Resources and the National Park Service, the herd will be monitored 4-5 times over the winter. I will again conduct surveys during calving and postcalving to document pregnancy and birth rates and early calf mortality.

cc Rod Boertje, ADF&G
 Rick Farnell, YDRR
 Bob Hayes, YDRR
 Carl Mitchell, NPS
 Patrick Valkenburg, ADF&G
 Buddy Johnson, USFWS