

N1427 (WRST-RM)

July 6, 1991

Memorandum

To:Chisana Caribou File, WRST

From:Resource Management Specialist (Wildlife), WRST

Subject:Chisana Caribou Herd, summer composition survey

On June 20, 1991 myself and pilot/ranger Jim Hannah participated in the annual composition survey of the Chisana Caribou Herd with ADF&G. The NPS team surveyed about half of the Chisana Herds' range and the ADF&G team surveyed the other half. We flew the Parks' Arctic Tern and ADF&G, with Chris Smith Region 2 Supervisor as observer, flew with Harley McMann in his supercub.

Hannah and I left Gulkana about 0730 and flew directly to Blue Lake in Cooper Pass where we started our half of the survey. We flew at about 1200 feet AGL along contours between 6,000 feet and the valley floors. We surveyed from the northern most drainages of Notch Creek then south to the White River. The 6,000 foot contour was our western boundary and the Chisana and Geohenda Rivers formed most of our eastern boundary. Our area included Solo Flats and drainages to it. ADF&G surveyed east of the Chisana River on into Canada and south of the White River. Both teams monitored telemetry receivers for radio-collared caribou and noted collared caribou locations as well as total number of caribou counted and number of calves observed. We were unable to classify caribou by sex from fixed-wing so that recruitment estimates are based on percent calves in the herd rather than calves per 100 cows.

Hannah and I flew 9.5 hours and ADF&G flew ~3.5 hours on the 20th and ADF&G flew another ~4 hours on the 21st for a total survey effort of ~16.5 hours. The combined results were 1,343 caribou observed in 47 groups ($x = 29$ caribou/group). However, four of

these groups were large aggregations of from 147 to 372 caribou. Excluding these four groups the mean group size was five caribou (range 1 to 39). We classified a total of 1,285 caribou (96% of the total observed) for percent calves (we did not classify north of Euchre mountain, but we only noticed one calf in this area). Our combined efforts resulted in an estimate of only 1.6% calves in the herd (21 calves and 1,264 adults), the lowest on record.

We located 16 of the 21 radio-collared caribou from the Chisana Herd. The status remains unknown for the five that were not located. Of the 16 we located, three collars were in mortality mode. We circled close to one collar (151.820) and could see the orange visual marker, but could see no caribou remains. Of the 13 live caribou with radio-collars, eight were collared prior to 1987 and five (4 calves and 1 adult) were collared the fall of 1990. We can expect the eight prior collars to be nonfunctional within a year and considering natural mortality we could be without collared caribou in the Chisana Herd by the end of next year.

Out of 11 calves collared in October of 1990 (with known status as of 6/21/91) seven (64%) have died. The cause of death of these caribou calves is unknown. Danny Graangard, ADF&G biologist in Tok, feels there has been an increase in both wolves and coyotes in the area and suggests they are the primary cause of calf mortality, but there is no data to support or reject this theory. Dave Kellyhouse, previous Area Game Biologist, expressed his concerns that poor range conditions caused by two consecutive summers of drought had reduced the productivity of the Chisana Herd. He felt that this coupled with predation could be causing the poor calf recruitment. Again no data are available to support or reject this theory.

There is a paucity of good data available on the Chisana Herd. ADF&G has estimated the herd size since 1977 and has records on harvest from 1974 to present (see attached). However, due to the herds remote range, population estimates prior to 1987 were little more than gut feelings. Even more recent estimates lack systematic search techniques that might provide trend data for year-to-year comparisons. Kellyhouse feels that several of the summer or fall composition counts have resulted in "near total counts", but the herd has never been photocensused.

Total harvest has ranged from 13 to 65 ($x = 42$) caribou per year since 1974 and has been limited to bulls only since 1979. Hunter success for this herd remains high ($x = 78\%$ compared to 32% for the Mentasta Herd) probably because hunts are primarily guided. There are no apparent trends in the harvest data.

Recruitment to the Chisana Herd has been estimated by the percent calves in the herd during either or both spring and fall sex-age composition surveys since 1976. The percent calves in the herd has averaged 14% in spring and 16% in fall. Fall composition surveys are completed post-harvest which may account for the higher proportion of calves in the herd in fall.

This springs estimate of 1.6% calves in the herd is cause for concern. We searched the entire known range and it is doubtful large enough numbers of calves were missed to account for the low percent calves. Possibly this herd has suffered a similar fate as the Mentasta Herd.

Very little weather data is available for the Chisana area. The Park Service maintains a Remote Area Weather Station (RAWS) at the Chisana air strip, but presently it only functions during the summer fire season. The nearest NOAA weather station is Northway or Slana, but they are 70 miles distant and separated by mountain ranges. The Soil Conservation Service provides information on snow pack conditions for the winter, but the closest survey is conducted at Chair Mountain in the Yukon some 40 miles distant.

We should strongly consider keeping the RAWS station at Chisana on line for the entire year. The Soil Conservation Service may be interested in setting up an additional one or two snow courses in the Chisana area if we maintained them. Another possibility is to enlist a Chisana area resident to routinely collect weather data.

Annual composition counts for the Chisana Herd should be done in a consistent manner each year and a protocol outlining a systematic approach to conducting these surveys needs to be developed. Funding needs to be acquired to see that this monitoring is completed each year.

Both the Mentasta and the Chisana herds are experiencing recruitment and or population declines. Area Game Biologists are asking the Park Service to support research on both of these herds. Because of the accumulated data on the Mentasta herd it would be the best candidate for a more intensive examination of the dynamics of these small herds. However, we should continue to work with ADF&G to maintain and upgrade the survey techniques on the Chisana herd.

Bill Route