

2004 Dall's Sheep Survey

At

Sheep Mountain,

Kluane National Park & Reserve

Prepared By:

Richard Greer on June 17/04

Warden Service, Box 5495

Haines Jct., Yukon, Y1A 1L0

Introduction

The 2004 Dall Sheep (*Ovis dalli dalli*) survey took place on June 17 and took one hour to complete. The temperature was +17° C at 5000 feet with partial cloud cover. There was very little wind gusting to approximately five km/hr from the southwest. Using a Bell Jet Ranger, the survey crew included the pilot, Doug Makkonen (of Trans North Air), Grace Coho of the Kluane First Nation, Rick Staley Park Warden, and myself, Richard Greer.

Methods

This is a total count survey that classifies adults as rams, and nursery sheep. Juveniles are classed as young of the year (YOY). The exact number of males and females is not known because immature males (<2.5 years old) travel with the nursery band and cannot easily be distinguished from other females in the group. The nursery sheep are classed by age, rather than by sex. The numbers are used to give us some insight about the future recruitment for this herd.

Population ratios (table 1) such as young of the year (YOY) to adult, yearling to adult, and young of the year to yearlings are indications of fecundity, recruitment, and early survival respectively. Trends in productivity can be shown with these types of data.

The survey area and methodology were as described by Skjonsberg (1994). Because all sheep were well inside the study area, there were no questions about the contentious northern boundary at Congdon Creek. As there is no physical barrier at the northern boundary (Congdon Creek), animals could move across and out of the study area, but this wasn't a problem in 2004. See map

Table 1

Summary of Sheep Mountain Dall Sheep surveys from 1974-2001.

Year	Rams	Nursery sheep *	YOY	Total	YOY/total ratio	YOY/nursery ratio
1974	123	187	27	337		14.8%
1975	97	190	11	298		5.8%
1976	146	114	13	273		11.4%
1977	165	113	28	306	9.2%	24.8%
1978	142	104	38	284	13.4%	36.5%
1979	100	185	77	362	21.3%	41.6%
1980	154	143	41	338	12.1%	25.2%
1981	100	226	49	375	13.1%	21.7%
1982	112	221	11	344	3.2%	4.9%
1983	89	172	22	283	7.8%	12.8%
1984	92	185	69	346	19.9%	37.3%
1985	140	205	46	391	11.7%	22.4%
1986	100	228	36	328	10.9%	15.8%
1987	71	201	47	319	14.7%	23.4%
1988	158	142	88	388	22.7%	61.9%
1989	104	189	51	344	14.8%	26.9%
1990	76	187	67	330	20.3%	35.3%
1991	69	210	44	323	13.6%	21.0%
1992	63	184	20	267	7.5%	10.9%
1993	123	201	62	386	16.6%	30.8%
1994	79	182	33	294	11.2%	18.2%
1995	113	170	41	324	12.7%	24.1%
1996	97	193	42	332	12.6%	21.8%
1997	103	172	66	347	19.0%	38.4%
1998	91	232	55	378		23.7%
1999	87	208	21	316		10.1%
2000	119	178	12	309		6.7%
2001	113	147	19	279		12.9%
2004	105	139	58	302		41.7%
29yr. long term average						
	108	180	41	328		22.7%
2004 sheep number deviations, above or below 29yr. average						
	-3	-41	+17	-26		+19%

*-Immature males may be included, as they are indistinguishable from the air.

Results

Since the 2001 survey, the total number of sheep has increased to 302 animals from 279. A healthy lamb crop is responsible for this increase as the herd produced 58 lambs compared to 19 in 2001. The ram and nursery classes were both down slightly with 105 and 139 animals from 113 and 147 in 2001. Table 1 shows 29 years of data with long-term averages for each classification with the resulting 2004 deviations and lamb to nursery sheep ratios (as a percentage).

Discussion

In 2001, John Wilmshurst, a statistician for Parks Canada (Western Canada Service Centre, Winnipeg, MB.) conducted linear regressions of changes in animal density and compared them to the current density. The point at which the two lines intercept represents the carrying capacity (K). This data produced a K-value of 329.6, and the lower/upper confidence intervals (95%) are 319.9 and 340.4 respectively (Greer, 2001).

The 2004 total count for this population is 302, which is still below the K-value of 329.6. This suggests that there should be room for continuing growth, and there should be enough food to see the sheep through another winter.

Another indication of a growing population is shown by the YOY/Nursery ratio (2004-42%). Percentages below 25 are negative while those falling between 25 and 35 show stability, and any observations over 35% illustrate a growing population.

Thanks to the rising numbers of Snowshoe Hare (*Lepus americanus*), the 2005 lamb crop should be similar to, or above those of this year. A growing hare population should continue to 'reduce' predator pressure, as they are the favored source of food for coyotes, Golden Eagles, and the lynx (Gray, 1987). And, although coyote and lynx populations

should be on the rise, it is doubtful that sheep or lambs will be significantly affected. They (coyotes and lynx) should continue to focus on the Snowshoe Hare. Unfortunately for the sheep, the Snowshoe Hare won't help too much with their main predators (wolves, bears, and wolverine).

Recommendations

- Sheep surveys should continue to be exercised with consistent timing and methods.
- In years (the year of and the two following) when the Snowshoe hare cycle is in the crash phase, our reconnaissance should be upgraded to assess the mortality among the young sheep of the year.
- Annual predator and vegetation surveys would help us in determining predator pressure and give us an indication of the net primary production for the area.
- A weather station at elevations of importance (lambing areas) would be beneficial to the continued monitoring of this population.
- Sheep Mountain should remain a special preservation area to protect plant species and to serve as a scientific control for other sheep populations.

References

Gray, B.J. ed. 1987. Chapter 9, Wildlife *in* Kluane National Park Reserve Resource Description and Analysis. 2 vols. 2nd ed. Parks Canada, Prairie Region, Natural Resource Conservation. Vol.2, pp.9-74.

Skjonsberg, T. 1994. Dall Sheep Survey Methodology for Sheep Mountain. Kluane National Park Reserve, Canadian Parks Service. Haines Jct. Y.T. 4 pp.

Greer, R. 2001. 2001 Dall's Sheep Survey at Sheep Mountain. Kluane National Park & Reserve, Canadian Parks Service. Haines Jct. Y.T. 6 pp.