

2009 Clearwater Area Sheep

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Bighorn sheep are one of the most prized of Alberta's wild ungulates because of their appearance, size, large horns, and social behaviour. With continued growth of the human population and activities, public interest regarding sheep has become numerous and diversified (Fish & Wildlife Division 1993). Bighorn sheep are highly valued for the hunting and viewing opportunities they provide.

Sheep populations in Alberta experienced a historically strong decline at the beginning of the 1900s, followed by a successful increase due to management actions such as more restrictive hunting regulations. The foothill and montane habitats of the Clearwater area provide moderately productive habitat for bighorns compared with other areas in the province. In 1986, a systematic winter range aerial trend survey for bighorn sheep was initiated in the Clearwater area. Since this time, surveys have been conducted every 2 years over the same winter ranges in order to monitor the spatial distribution, post-hunt herd composition and trends in population size. The purpose of this report is to summarize the results, such as minimum count, population trends, herd composition, and spatial distribution, obtained for the 2009 bighorn sheep winter survey.

Study Area

Bighorn sheep winter ranges in the Southwest Region 2 are located on the west portion of the Clearwater area, bordered to the west by Banff and Jasper National Parks, to the North by the Yellowhead and Brazeau Counties and to the South by the Panther and the Dormer-Sheep FLUZ. There are 17 sheep winter ranges identified within this area (WMUs 328, 416, 417, 420, 422, 426, 428, 429, 430, 432, and 434); the 2009 survey covered 16 of these winter ranges with the exception of range # 6 (Obstruction Mountain). The area consists predominantly of upper foothills, montane, and subalpine habitats (from east to west respectively), with several large river valleys characterized by riparian habitats and

meadows. The area includes some unique habitat: fescue grassland (Ya-Ha Tinda) in the most SW portion, a plain characterized by mild winters (Kootenay Plains), and an extensive forested area (R11) with no timber allocations. In the R11 Forest Management Unit, several prescribed burn plans have been approved with the intent of using prescribed fires to bring the age classes closer to natural ranges and enhance wildlife habitat particularly for sheep and elk. There is very little agriculture or human settlement, and forestry and energy extraction activities are limited, although the level of human pressure related to recreational activities in the area is steadily increasing.

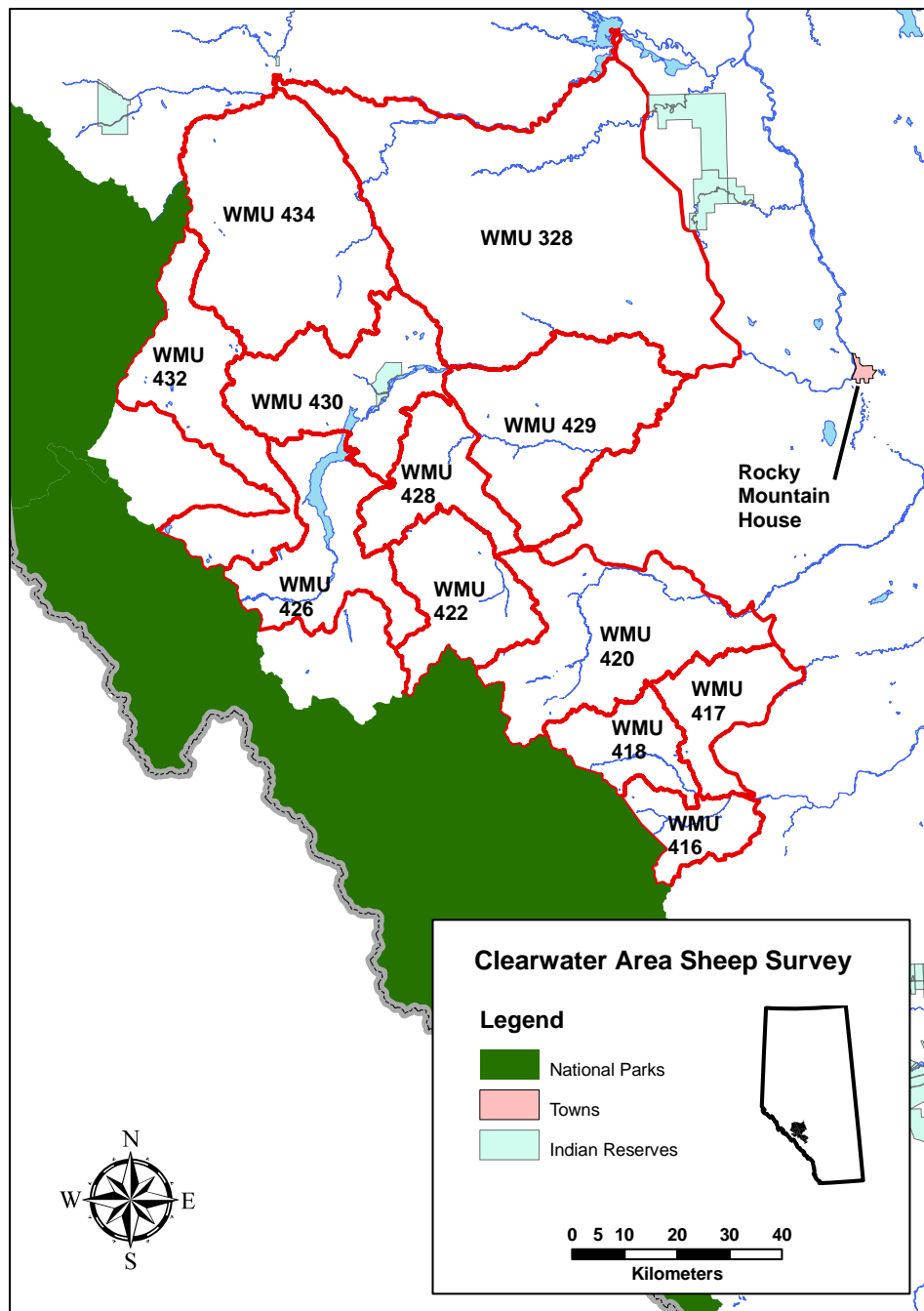


Figure 5.2.1. Location of the Clearwater Area Sheep Survey in Alberta.

Survey Methods

We flew surveys in known sheep winter ranges with a Bell 206 Jet Ranger and counted all sheep present, and searched more intensely in areas where tracks were observed. The location for each sheep was logged with a GPS, and males were identified, where possible, following the classification used as the provincial standard: $\frac{1}{4}$ curl, $\frac{1}{2}$ curl, $\frac{3}{4}$ curl, $\frac{4}{5}$ curl, and full curl. Lambs were identified by their smaller size. All encountered ungulates (i.e., elk, moose, deer, and feral horses) were identified by a GPS location and classified by sex and age, wherever possible. Air speed during flights was approximately 80 km/h. The flight crew consisted of a pilot and three passengers: a navigator/observer in front, and two experienced observers in the back. Sixteen of the known bighorn sheep winter ranges were surveyed within the region. Ranges within Jasper and Banff National Parks were not surveyed at this time. During the survey, flying and observing conditions were fair because of the bright light and moderate snow coverage; winds were light. We did not correct for sightability; therefore, overall counts should be considered as minimum estimates and direct comparisons of survey results among years may be difficult.

Results

The sheep winter trend survey was flown from January 19 – 21, 2009. We observed 1,491 sheep on 14 winter ranges (Figure 5.2.1). Some observations were outside the known winter ranges ($n = 8$ groups totaling 156 sheep), particularly in WMU 414, 420 and 426, suggesting that winter ranges should be re-adjusted over time. The population structure identified during the survey on known winter ranges was 732 ewes, 175 lambs, 339 rams, and 245 unclassified sheep. Rams were classified as 107 $\frac{1}{4}$ curl, 131 $\frac{1}{2}$ curl, 41 $\frac{3}{4}$ curl, 15 $\frac{4}{5}$ curl, 9 full curl, and 36 unclassified males. The herd composition was 23.9 lambs/100 ewes and 46.3 rams/100 ewes, with 1.6% of the total sheep that were classified as $\frac{4}{5}$ or full curl. Results from this survey are similar to the results from previous surveys: in 2005 a grand total of 1482 sheep were counted and the composition was 45 rams/100 ewes/32 lambs. In 2007, a grand total of 1072 animals were counted and ratios were 36 rams/100 ewes/30 lambs.

Table 5.2.1. Total numbers and age/sex classification of bighorn sheep by WMU during aerial surveys in January 2009.

WMU	Rams	Ewe/Lamb Herds			Total Sheep
		Ewes	Lambs	Unclassified	
328	3	9	3	0	15
414	24	22	9	0	55
416	0	1	1	0	2
417	0	6	2	0	8
418	28	79	23	27	157
420	87	135	31	22	285
422	78	244	69	165	556
426	18	107	7	2	134
428	7	0	0	0	7
429	0	9	3	19	31
430	17	53	2	0	72
432	21	15	7	0	43
434	41	51	18	10	120
738	5	1	0	0	6
Total	339	732	175	245	1491



Photo: Mike Jokinen