

2008 Foothills Area bighorn sheep

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Aerial surveys for bighorn sheep have been conducted in the Eastern Slopes of Alberta since the 1970s. Since 1978, surveys have focused on select winter ranges where concentrations of bighorn sheep have been observed during previous flights. These mountain complexes are located within WMUs 444, 442, 440, 439, 438 and 437 (Figure 8). The last survey of these complexes was conducted in 2002 (Hobson and Ficht 2002). This section summarizes observations of bighorn sheep obtained during an aerial survey of select winter ranges during winter 2008.

Survey methods

Aerial surveys were conducted on January 22, 24, 25 and 31 and on February 27 and 28, 2008. A Bell 206 helicopter was used to survey each mountain complex and associated drainages for bighorn sheep and other ungulates. Each selected winter range was flown counter-clockwise at an altitude of 5,500 – 7,000 ft above sea level in an attempt to provide complete coverage of each complex. The flight crew consisted of the pilot, navigator/observer, an observer, and a recorder/observer. The navigator was responsible for classifying each group of ungulates observed, while the observer provided a total count. The recorder/observer recorded all data and provided supplemental observations. The location of each animal or group of animals was identified using a GPS and was plotted in a geographic information system (GIS) system.

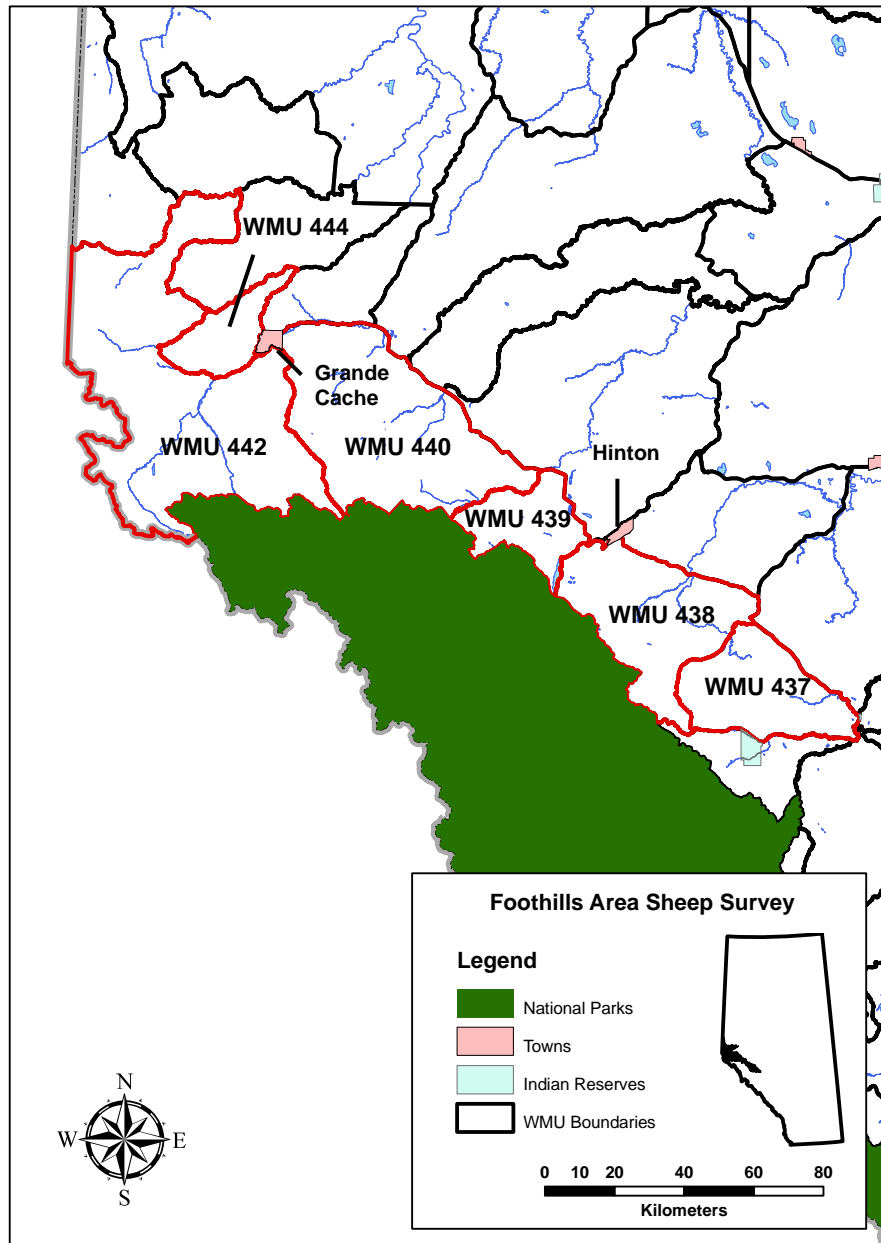


Figure 8. Location of the Foothills area bighorn sheep surveys in Alberta.

All sheep were classed according to sex (ewes or rams) and age (lambs or adults). Sheep ≥ 1 year old were classed as adults. Rams were further categorized by horn-size: $\frac{1}{4}$ curl, $\frac{1}{2}$ curl, $\frac{3}{4}$ curl, or legal. Individuals with undetermined horn size or those that could not be identified based on either sex or age were recorded as 'unclassified'. Other ungulates observed during the survey were also classified, if possible, according to sex and age.

Ground surveys of sheep on the Cardinal River and Gregg River coal leases were conducted by Bighorn Wildlife Technologies Ltd. on January 22 and 23, 2008. Rams were classified as Class I, II, III, or IV. Yearling males and females, adult ewes, and lambs were also recorded into separate categories.

Total sheep numbers and herd composition were compared to the results from previous surveys (1972 - 2002) of the study area. We did not correct for sightability, so survey results should be considered to be minimum estimates. The locations of sheep sightings from the 2008 survey were plotted on GIS maps based on winter range designations. Observations of other ungulate species were totaled and summarized.

Results

During the 2008 survey, 1,149 bighorn sheep were observed and 1,125 were classified from the air between WMU 437 and WMU 444 (Table 6). In addition, 941 sheep were observed and classified from the ground on the coal leases in WMU 438 (Table 7). Due to poor survey conditions that included high winds and lack of sufficient snow cover, Mt. Stern and the Grande Cache coal lease (original Smoky River coal lease) were not completely surveyed. Sex/age proportions for aerial and ground surveys combined were 53% ewes, 14% lambs and 33% rams. The total count was approximately 400 sheep less than the 2002 survey. Lamb/ewe ratios were down from those observed in 2002 and 1994/95 surveys. The proportion of legal vs. non-legal rams varied widely over the survey area.

Table 6. Total numbers and age/sex classification of bighorn sheep by complex during aerial surveys, January and February 2008.

WMU	Rams	Ewe/Lamb Herds			Unclassified Sheep	Total Sheep
		Ewes	Lambs	Unclassified		
437	28	53	15	0	0	96
438	64	169	43	0	0	276
439	12	7	6	0	0	25
440	74	231	40	1	0	346
442	67	158	30	0	0	255
444	22	86	20	0	23	151
Total	267	704	154	1	23	1149

Table 7. Total numbers and age/sex classification of bighorn sheep on Cardinal River Coals and Greg River Resources mines, January 22 - 25, 2008.

Ewes	Lambs	Female Yearlings	Male Yearlings	Rams > 1 Year	Total
321	147	64	55	354	941

Literature Cited

Hobson, D., and J. Ficht. 2002. Bighorn sheep aerial survey of designated winter ranges within the northern East Slopes region. Alberta Sustainable Resource Development, Fish and Wildlife Division, Edmonton, Alberta. 38 pp.