2008 Canmore area bighorn sheep

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In 1973, a systematic winter aerial survey for bighorn sheep was initiated in the Canmore area of southwest Alberta. Since this time, repeated surveys have been conducted over the same areas in order to monitor the spatial distribution, post-hunt herd composition and number of bighorn sheep at the population level in each of the WMUs and at the winter range scale. This information is used to support wildlife management recommendations related to land-use decisions and hunting regimes.

Study area

The study area encompassed the eastern slopes of southern Alberta from the Ghost River Wilderness Area in the north to Plateau Mountain at the southern boundary of Kananaskis Country (Figure 9). A total of 22 known sheep winter ranges occur in the eight WMU's in this area: 404, 406, 648 (Peter Lougheed Provincial Park), 408, 410, 412, 414 and 734 (Ghost Wilderness Area). Most of the winter ranges in WMU 410 are no longer surveyed due to the difficulty of reliably locating sheep. These ranges are surveyed in the spring from the ground along Highway 1A where sheep congregate during winter and spring. The Sheep River herd has marked individuals that provide supplemental information that can be collected from the ground, and therefore this herd is not surveyed from the air each year. All ground counts of sheep from WMUs 410 and 406 are incorporated in this report.

Survey methods

Aerial observations of sheep were conducted on January 20, 21, 23 and 24, 2008. We used a Bell 206 helicopter for these surveys, employing a navigator/observer in the front and two observers in the back. The pilot also participated in the survey as an

observer. Sheep sightings were logged on a 1:250 000 topographic scale map and a hand-held GPS unit was used to record geographic coordinates of each observation. Fresh tracks were easily observed, eliminating the need to search every valley, which consequently reduced search time. Each winter range was flown slightly above tree line and at higher elevations covering mountain ridges and cliffs. Canon Image Stabilizer binoculars were used to aid the classification of sheep into one the following cohorts: ewes, lambs and rams at 1/4 curl, 1/2 curl, 3/4 curl, and 4/5 curl (trophy). Yearling ewes and rams were difficult to differentiate from the air and were grouped with the ewe cohort. Additional sheep were occasionally found outside traditional winter range boundaries; these animals were not included in the totals on conventional winter ranges. We did not correct for sightability; therefore, all counts are minimum estimates. In addition, we assumed that all age and sex categories had equal sightability during the survey.
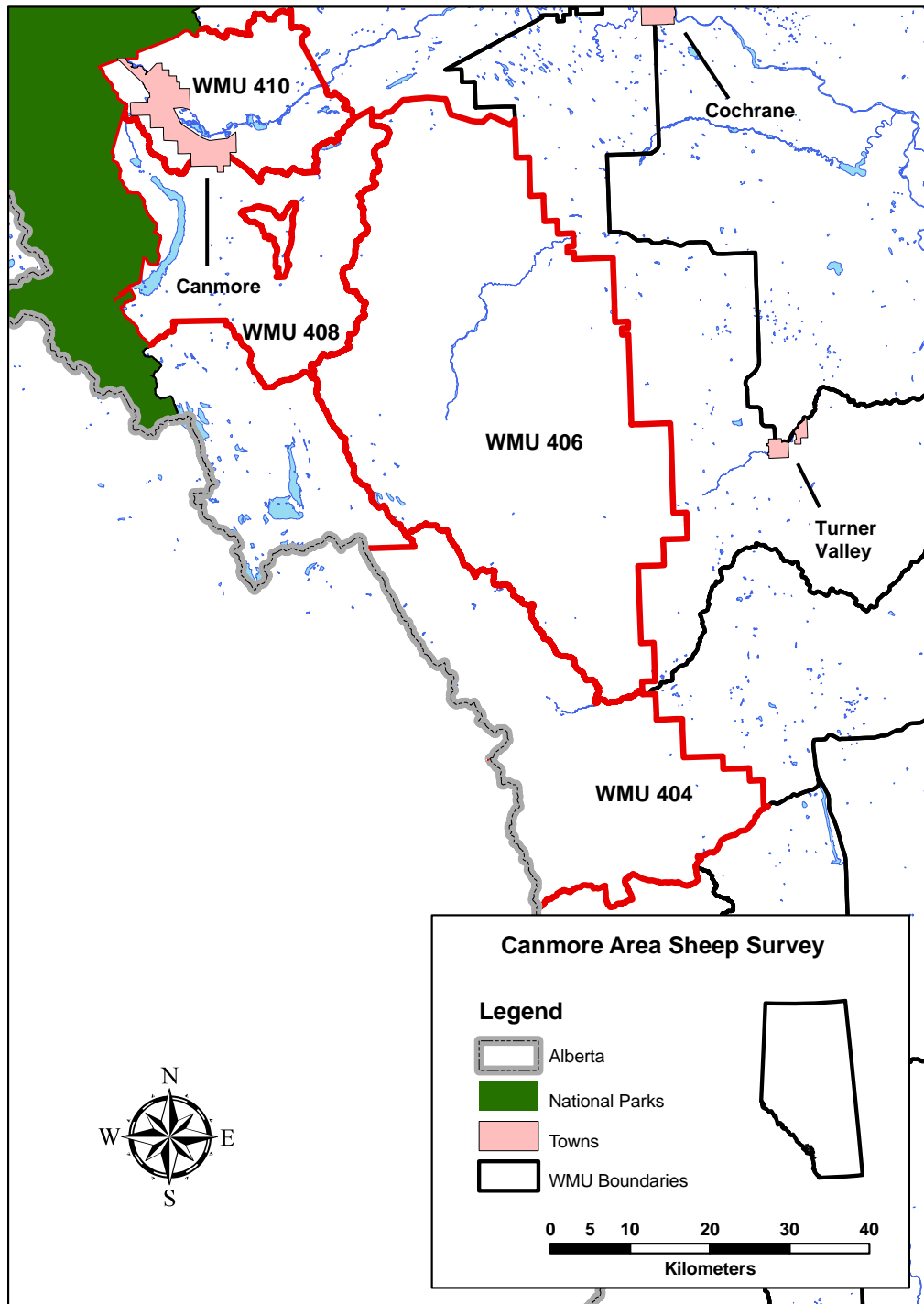
Figure 9.   Location of the Canmore area bighorn sheep surveys in Alberta.

Results

Flying and observing conditions were good to excellent with sunshine, calm winds and mostly recent snowfall. We were unable to survey winter ranges north of the Bow River, due to a loss of snow cover and resultant poor surveying conditions. Appropriate survey conditions did not occur for the rest of the surveying season; therefore WMUs 412, 414 and 734 (Ghost Wilderness Area) were not surveyed in 2008.

A total of 824 bighorn sheep (including those in Peter Lougheed Provincial Park) were observed during 2008. Comparisons with other survey years are difficult because it has been difficult to complete the surveys for all winter ranges during each survey attempt. Loss of snow cover before the entire survey can be completed has been a common problem in recent years. Considering that the 2008 survey did not include any winter ranges north of the Bow River, the count of 824 was at the high end of the range for counts from previous years.

Over 99% of the sheep observed in 2008 could be classified for a total composition of 28% rams, 54% ewes, and 18% lambs. The percentage of trophy rams in the population was 5%, which is consistent with previous surveys. The lambs/100 ewes ratio was 34, which was at the low end of the range in comparison to values from previous surveys, but was within the expected range of values for a stable population.

Sheep observations were further subdivided and evaluated on a WMU basis. In 2008, WMUs in which sheep were surveyed included WMU 404, 406, 408 and the Pigeon Mountain portion of WMU 410 (Table 8). Both WMU's 404 and 408 had lamb ratios in the low 30s and below their long-term average, whereas WMU 406 was above average at 48 lambs/100 ewes. Only 11 lambs/100 ewes were observed in the Pigeon Mountain herd, which is part of WMU 410.

Table 8.   Number of rams, ewes, and lambs observed during bighorn sheep aerial surveys in the Canmore area in 2008.

WMU	Rams	Ewes	Lambs	Unclassified	Total Sheep
404	46	104	32	0	182
406	67	123	59	14	263
408	82	123	38	6	249
410	17	45	5	0	67
Total	212	395	134	20	761