

2008 Pronghorn

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Aerial surveys for pronghorn antelope are conducted annually to provide information on population density, distribution, composition and an estimate of population size. This information is used by ASRD to formulate harvest objectives for the upcoming fall hunting seasons. Recreational hunting opportunity for pronghorn antelope in Alberta is highly sought after, making the information collected during the annual aerial survey an important component of the decision process.

This summary describes data collected during the 2008 survey conducted in Antelope Management Areas (AMAs) A, B, C, D, E ,F ,G , and H (Fig. 4.1.1). AMA S (Suffield area) was not surveyed in 2008.

Survey Methods

Following standard census procedures, antelope surveys were conducted on AMAs during July 8-15, 2008 (Fig. 4.1.1). Each AMA contains designated survey blocks with fixed transects that were surveyed from rotary-winged aircraft. In an attempt to reduce survey costs, the survey crew conducted non-stop three-hour flights with the support of strategic fuel cache locations. Each survey day was divided into 2 periods, with the first flight commencing at approximately 0800 hours and the second flight beginning toward evening, after the heat of the day. The survey crew consisted of the pilot, navigator and two rear seat observers in a Bell 206L helicopter. Primary observers were responsible for maintaining constant observation of the ground area for a distance of 0.5 mi. (0.8 km) perpendicular to the flight line on each side of the aircraft. The navigator was responsible for keeping the aircraft on course, recording observations, and assisting with ground observation and herd classification whenever possible. All pronghorn observed on the transect were counted, and the numbers of bucks, does, and kids enumerated whenever possible. 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. However, in 2008, survey crews tested a distance sampling approach for surveying pronghorn that incorporates a sightability correction; results of this continual improvement trial are reported elsewhere.

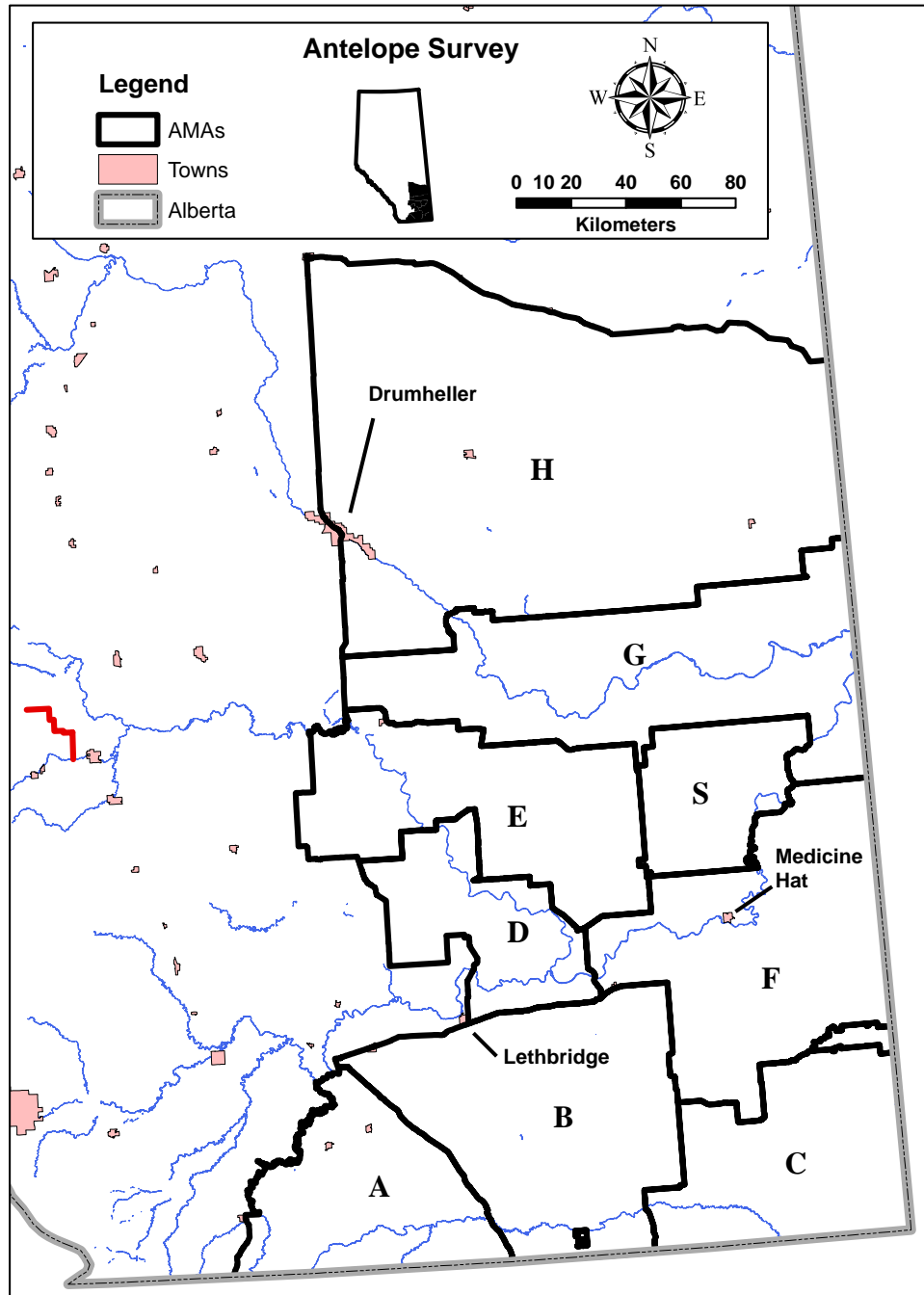


Figure 4.1.1. Location of Antelope Management Areas (AMAs) in Alberta.

Population Estimate Calculations

The population estimate was calculated on an AMA basis by calculating a density (# animals/km²) from the number of animals observed on transects divided by the area (km²) of primary antelope range flown along transect lines and applying that density to the area of the unit. Only primary antelope range was surveyed. For AMAs with secondary antelope range, a density of 0.26 animal/km² was assumed, and multiplied by the total area of the AMA that consisted of secondary range (km²).

The population estimates for each AMA were summed together to estimate the antelope population in the entire survey region. In years when all AMAs are not flown, an AMA estimate is based estimates from the last year flown, adjusted to reflect estimates for mortality and recruitment rates (Fish and Wildlife Division 1990) as well as known events that may have caused unpredictable changes in the population (i.e. severe weather event resulting in high mortality).

Results

During the entire survey, 974 bucks, 1,978 does, and 669 fawns were recorded on transect. This resulted in a total population estimate (excluding Suffield) of 19,648 antelope, including 5,314 bucks, 10,671 does, and 3,663 kids. The population densities, areas in primary and secondary ranges, and resulting population estimates for each AMA are summarized in Table 4.1.1.

Table 4.1.1. Area surveyed, density, population estimates, and herd composition from the 2008 Alberta pronghorn antelope surveys with comparisons to the 2007 survey.

| | Antelope Management Area | | | | | | | |
|--|---------------------------------|----------|----------|----------|----------|----------|----------|----------|
| | A | B | C | D | E | F | G | H |
| 2008 Survey | | | | | | | | |
| Primary Range Surveyed (km ²) | 384 | 1106 | 906 | 438 | 489 | 1216 | 945 | 1114 |
| Observed Antelope Density (#/km ²) | 0.50 | 0.43 | 0.98 | 0.95 | 0.90 | 0.38 | 0.50 | 0.25 |
| Estimated Primary Range (km ²) | 1818 | 5837 | 4621 | 1336 | 2970 | 7334 | 6182 | 7012 |
| Est. Population in Primary Range | 918 | 2528 | 4548 | 1276 | 2666 | 2768 | 3069 | 1732 |
| Estimated Secondary Range (km ²) | 0 | 0 | 0 | 0 | 0 | 0 | 2097 | 8993 |
| Est. Population in Secondary Range | 0 | 0 | 0 | 0 | 0 | 0 | 82 | 351 |
| Total Estimated Population | 918 | 2528 | 4548 | 1276 | 2666 | 2768 | 3151 | 2083 |
| Bucks/100 Does | 39.7 | 46.5 | 58.9 | 43.8 | 49.8 | 32.4 | 52.1 | 64.5 |
| Kids/100 Does | 20.7 | 42.1 | 28.0 | 30.4 | 26.5 | 42.7 | 46.6 | 30.5 |
| 2007 Survey | | | | | | | | |
| Total Estimated Population | 880 | 2620 | 4140 | 1260 | 2020 | 3950 | 2390 | 1690 |
| Bucks/100 Does | 24.0 | 45.7 | 41.9 | 23.8 | 47.8 | 30.4 | 44.8 | 68.0 |
| Kids/100 Does | 29.8 | 66.7 | 30.1 | 51.9 | 37.2 | 36.7 | 50.3 | 38.8 |

