

## 2007 Pronghorn Survey

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Aerial surveys for pronghorn antelope are conducted annually in Alberta to provide trend data, information on population status (density, distribution and herd composition) and to estimate population size. This information is used by ASRD in harvest calculations 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 critical for decision making. This summary describes data collected during the 2007 survey conducted in Antelope Management Areas (AMAs) A, B, C, D, E, F, G and H (Figure 1). Antelope Management Area S (Suffield area) was not surveyed in 2007.

### ***Survey methods***

Following standard census procedures, antelope surveys were conducted on AMAs between July 6 - 13, 2007. 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, 3-h flights with the support of strategic fuel cache locations. Each survey day was divided into two periods; the first flight commenced at approximately 0800 h and the second flight began 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.

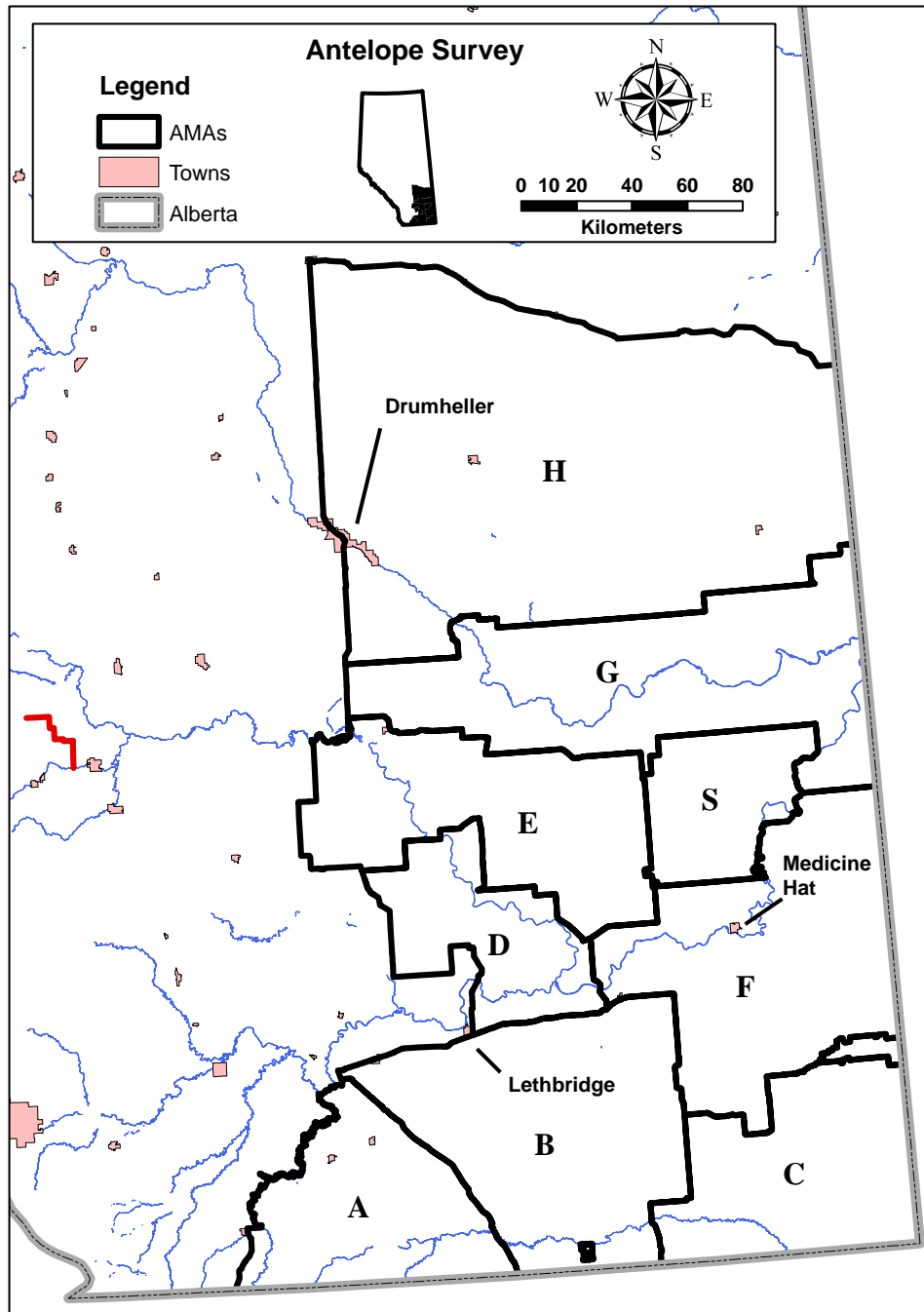


Figure 1. Location of Antelope Management Areas (AMAs) in Alberta.

### *Population estimation calculations*

The population estimate was calculated on an AMA basis by calculating a density (# animals/mi<sup>2</sup>) from the number of animals observed on transects divided by the area (mi<sup>2</sup>) 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 0.1 animal/mi<sup>2</sup> was assumed, and multiplied by the total area of the AMA that consisted of secondary range (mi<sup>2</sup>).

Step 1). # animals observed ) area of antelope range surveyed = antelope density

Step 2). antelope density x total area of primary range = **population estimate**

*Steps 3 and 4 are for AMA's G and H only.*

Step 3). 0.1 animals/mi<sup>2</sup> x total area of secondary range = **population adjustment**

Step 4). **population estimate + population adjustment = total population estimate**

The population estimate for each AMA was added together to create a provincial antelope population estimate. In years when all AMAs are not flown, an AMA estimate is based on the last year flown, adjusted to reflect standard 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, 743 bucks, 1,891 does and 882 kids were recorded on transects resulting in a total provincial population estimate (excluding Suffield) of 18,950 antelope, including 4,220 bucks, 10,430 does, and 4,300 kids. The population densities, areas in primary and secondary ranges surveyed, and resulting population estimates for each AMA are summarized in Table 1.

Table 1. Area surveyed, density, population estimates and herd composition from the 2007 Alberta pronghorn antelope surveys.

	Antelope Management Area							
	A	B	C	D	E	F	G	H
Primary range surveyed (mi <sup>2</sup> )	150	432	354	171	191	475	369	435
Observed antelope density (#/mi <sup>2</sup> )	1.24	1.15	2.29	2.42	1.74	1.38	0.96	0.49
Estimated primary range (mi <sup>2</sup> )	710	2280	1805	522	1160	2865	2415	2739
Estimated population in primary range	880	2620	4140	1260	2020	3950	2310	1340
Estimated secondary range(mi <sup>2</sup> )	n/a	n/a	n/a	n/a	n/a	n/a	819	3513
Estimated population in secondary range	n/a	n/a	n/a	n/a	n/a	n/a	80	350
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

*Literature Cited*

Fish and Wildlife Division. 1990. Management plan for pronghorn antelope in Alberta. Wildlife Management Planning Series No. 3, Department of Forestry, Lands and Wildlife, Edmonton, Alberta, Canada. 115 pp.