2009 Pronghorn antelope

Section Authors: Mike Grue and Kim Morton

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Aerial surveys for pronghorn antelope are conducted annually to provide information on population density, distribution and composition within a series of long-term trend survey blocks. This information is used by ASRD to extrapolate an estimate of population size for each antelope management area (AMA), which in turn influences 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 2009 survey conducted in AMAs A to H, and Area Suffield (S) (Figure 1).

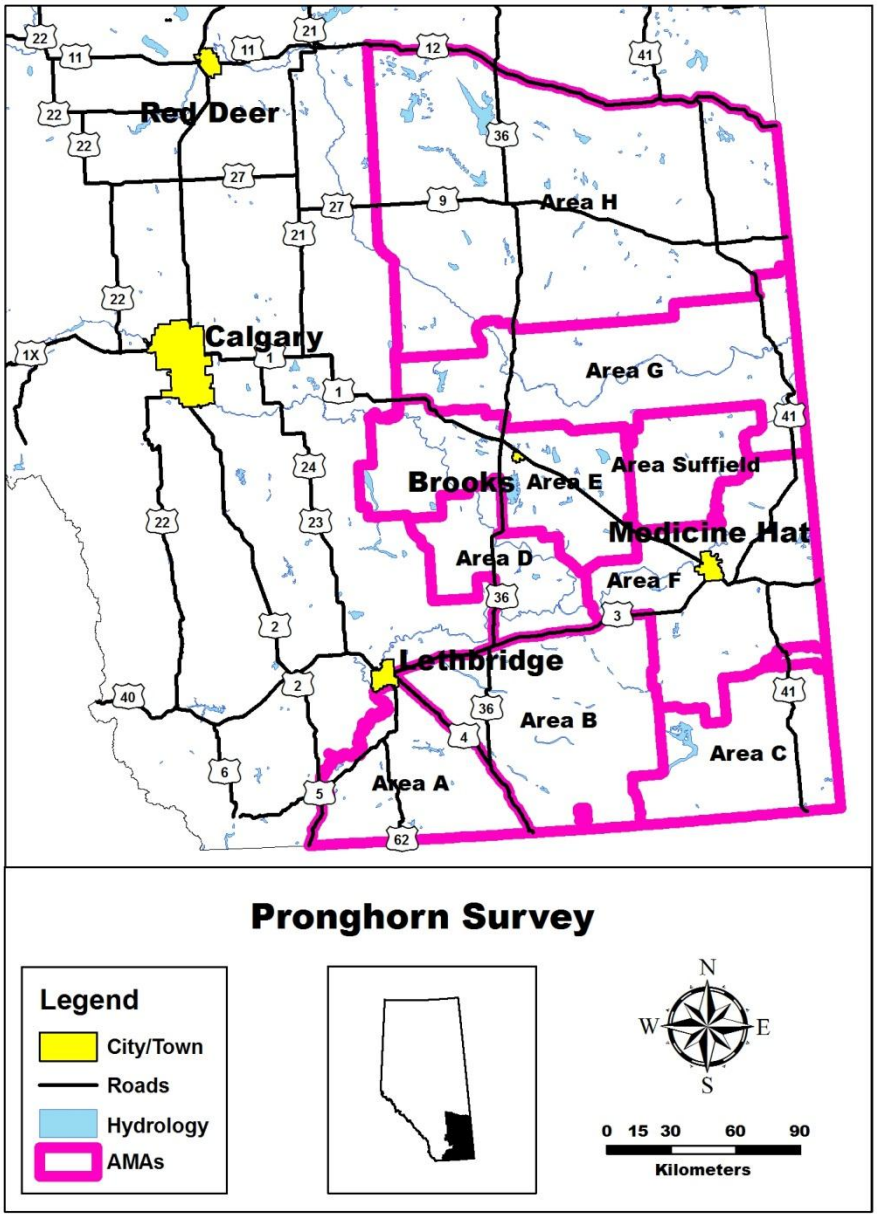

Figure 1. Location of pronghorn antelope management areas (AMA) in Alberta.

Survey methods

Following standard census procedures, we conducted pronghorn antelope surveys from 15 – 25 July 2009. Each AMA contains designated survey blocks with fixed strip transects, which we surveyed from rotary-winged aircraft. To reduce survey costs, we conducted non-stop, 3 hour flights with the support of strategic fuel cache locations. We divided each survey day into two periods, with the first flight commencing at approximately 0800 h 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 maintained constant observation of the ground for a distance of 0.8 km perpendicular to the flight line on each side of the aircraft. The navigator kept the aircraft on course, recorded observations, and assisted with ground observation and herd classification, whenever possible. Observers counted all pronghorn on the transect, and enumerated the number of bucks, does and kids, whenever possible.

Observed pronghorn density

We calculated a minimum estimate of pronghorn density (# animals/km^2) for the survey blocks in each AMA by dividing the number of animals observed by the total area (km^2) of the strip transects that were flown. We did not correct for sightability, assuming 100% detection across the 1600 m strip width. We acknowledge that animals were likely missed within this area, and are testing a distance sampling approach for surveying pronghorn that incorporates a sightability correction (Webb et al. 2008, Grue and Morton 2010). Until that preliminary work has been completed, overall counts will continue to be considered as minimum estimates and direct comparisons of survey results among years may be difficult.

Results

During the survey, we recorded 1,083 bucks, 2,268 does and 823 kids on the transects. This resulted in an overall minimum density estimate of 0.58 pronghorn/km^2 across all AMAs surveyed (Table 1).

Table 1. Comparison of pronghorn antelope survey results from 2007 – 2009.

	Antelope Management Area									*Overall Density Estimate
	A	B	C	D	E	F	G	H	S	
2009 Survey										
Observed pronghorn density (pronghorn/km^2)	0.63	0.39	0.93	0.62	0.89	0.50	0.44	0.27	0.95	0.58
Bucks/100 Does	38	66	43	60	39	35	62	35	66	-
Kids/100 Does	39	58	22	42	42	35	34	29	47	-
2008 Survey										
Observed pronghorn density (pronghorn/km^2)	0.50	0.43	0.98	0.95	0.90	0.38	0.50	0.25	-	0.61
Bucks/100 Does	40	47	59	44	50	32	52	65	-	-
Kids/100 Does	21	42	28	30	27	43	47	31	-	-
2007 Survey										
Observed pronghorn density (pronghorn/km^2)	0.48	0.44	0.96	0.93	0.65	0.53	0.37	0.19	-	0.57
Bucks/100 Does	24	46	42	24	48	30	45	68	-	-
Kids/100 Does	30	67	30	52	37	37	50	39	-	-

*Overall density does not include AMA Suffield (S)

Literature Cited

Webb, N., M. Grue, K. Morton and J. Taggart. 2008. Evaluation of helicopter-based distance sampling for pronghorn in Alberta. Unpublished report, Alberta Conservation Association and Alberta Sustainable Resource Development, Rocky Mountain House, Alberta, Canada. 12 pp.

Grue, M.G., and K. Morton. 2010. Helicopter-based distance sampling for pronghorn in Alberta, 2009. Unpublished draft report produced by Alberta Conservation Association and Alberta Sustainable Resource Development.