

## **Alberta Conservation Association 2011/12 Project Summary Report**

**Project Name:** *Big Game Surveys*

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**Project Lead:** Robert Anderson and Mike Ranger

### **Primary ACA staff on project:**

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### **Partnerships**

Alberta Sustainable Resource Development

### **Key Findings**

- With much of the province experiencing below normal snowfall, 75% of the surveys that we planned to deliver in winter 2011/12 had to be cancelled.
- The late spring made summer 2011 mountain goat surveys challenging, but we did complete counts in the Crowsnest and Grande Cache areas.
- Pronghorn numbers were down substantially across their range in summer 2011, following severe winter storms in winter 2010/11.

### **Introduction**

Big game surveys provide information on population size and trends, population demographics and reproductive output (Lancia et al. 2005). Many stakeholders are interested in these data, including hunters. In addition, the provincial government (Alberta Sustainable Resource Development, ASRD) uses these data to assist with setting hunting quotas and to aid in land use planning efforts. We work in partnership with ASRD to deliver big game surveys in select wildlife management units across the province.

### **Methods**

Alberta Conservation Association (ACA) has funded big game survey flights in Alberta since our inception in 1997. These surveys were historically led by government biologists, with relatively little involvement from ACA staff. Beginning in 2007, following direction from the Deputy Minister of ASRD, we began playing a much more active role in the planning, sampling and reporting of the aerial ungulate surveys that had been delegated to us (D-AUS). Though we

still work in partnership with ASRD biologists, our role and expertise in this area has evolved annually. In fiscal year 2011/12, our staff were scheduled to participate in the delivery of 23 surveys conducted under the D-AUS partnership (Figure 1). We flew all pronghorn antelope surveys (excluding Canadian Forces Base Suffield) as part of a single sustained effort; however, they have historically been budgeted as distinct surveys for each of the pronghorn antelope management areas surveyed and continue to be counted as such here. Random stratified block designs are used to survey moose and deer. Surveys for mountain goats, bison, elk and pronghorn are conducted as a total count of previously-identified ranges or management areas.

Figure 1. Relative amount of Alberta Conservation Association funding allocated to survey various big game species in Alberta during the 2011/12 fiscal year. Survey priorities are determined by Alberta Sustainable Resource Development. We could not conduct many of the moose surveys due to a lack of snow.

## Results

We completed 13 surveys in fiscal year 2011/12 (Table 1). We conducted pronghorn surveys during July; these surveys were especially important this year because of the previous severe-winter die-off. Results varied by Antelope Management Area, but trend counts averaged one-third below what they had been the year before. ASRD used this information to adjust the number of pronghorn tags given out for the fall hunting season. Mountain goat surveys, which are normally flown in early July, required patience and persistence while snow levels slowly retreated following an abnormally high snow year. Nanny groups were harder to find in 2011 than in previous years, but we will not know until 2012 whether this was the result of a population change or simply an artifact of an extended snow-covered period in the mountains, which may have caused them to stay away from the areas that we normally find them.

Table 1. Number of big game surveys completed in 2011/12.

<b>Primary Species of Interest</b>	<b>Survey Type</b>	<b>Number of Surveys</b>	<b>Total Number of Management Units/Areas*</b>
Bison	Total count	1	2
Mountain goat	Total count	2	9
Moose (plus elk and deer)	Random stratified block	2	6
Pronghorn	Trend block count	8	8

\* Some surveys also produce estimates for species of secondary interest, each of which is counted as a unique management area.

On the other end of the spectrum, a mild winter in 2011/12, with below normal snowfall (Figure 2; Alberta Environment 2012) and warm temperatures proved challenging for completion of deer, elk and moose surveys. These warm and dry conditions can result in poor or even misleading survey results for most big game species. As a result, we had to cancel 75% of the surveys that we had planned for winter 2011/12. We did conduct a small number of surveys for

deer, elk, moose and bison. Our staff also assisted with two additional surveys funded through ASRD. We entered all survey data into the Fisheries and Wildlife Management Information System and will upload summary information to our web page for public viewing once final reports are completed in early summer 2012.

Figure 2. Alberta Environment data show that the winter of 2011/12 was abnormally dry across most of the province.

## Conclusions

Despite having to cancel 75% of our winter surveys due to abnormally low snowfall, Alberta's hunters and anglers were still able to contribute to the collection of 25 big game population estimates. Pronghorn surveys seemed to confirm what many hunters suspected—the harsh winter of 2010/11 resulted in a significant decline in the provincial population. We provided this information to ASRD, who used it to adjust the number of tags given out for the fall hunting season. Survey information will continue to be posted to our web page, making it available to the hunters and anglers who pay for the majority of costs associated with this project.

## Communications

- Submitted manuscript to the Journal of Wildlife Management: Moose Population Estimation Using Distance Sampling in West-central Alberta, submitted April 2011.
- Posted full report from the previous year on our website in June 2011: Delegated Aerial Ungulate Surveys, 2010/2011 Survey Season.
- Posted 54 population estimates for 2010/11, covering bighorn sheep, bison, elk, moose, pronghorn, mountain goat, mule deer and white-tailed deer on our website in June 2011.
- Interviewed by *Let's Go Outdoors* radio program about how aerial surveys help hunters with draw applications. Episode 3, July 2011.

## Literature Cited

Alberta Environment. 2012. Past month and seasonal precipitation maps. Winter – November 1, 2011 to January 31, 2012, % of Normal.

[www.environment.alberta.ca/forecasting/data/precipmaps/feb2012/wintnorm.pdf](http://www.environment.alberta.ca/forecasting/data/precipmaps/feb2012/wintnorm.pdf)

Lancia, R.A., W.L. Kendall, K.H. Pollock, and J.D. Nichols. 2005. Estimating the number of animals in wildlife populations. Pages 106 – 153. *In*: C.E. Braun, editor. Techniques for wildlife investigations and management. Sixth edition. The Wildlife Society, Bethesda, Maryland, USA.

## Photo captions:



IMG\_0661\_MR:  
Late snow melt in 2011 made mountain goat surveys challenging. (Photo: Mike Ranger)



WMU320\_322\_Moose\_BGS\_Jan2012 025:

Wildlife Management Unit 320/322, near Rocky Mountain House, was one of the few areas that had adequate snow cover in January to allow for a moose survey. (Photo: Mike Verhage)