Alberta Conservation Association
2009/10 Project Summary Report

Project Name: *Aerial Ungulate Surveys*

Wildlife Program Manager: Doug Manzer

Project Leader: Robert Anderson with Shevenell Webb

Primary ACA staff on project:

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Partnerships

Alberta Sustainable Resource Development
Wild Sheep Foundation Alberta

Key Findings

- Delivered 29 aerial surveys in partnership with Alberta Sustainable Resource Development in 2009/10, including those for deer, elk, bighorn sheep, bison, mountain goats, pronghorn antelope and moose.
- Results will be released on our web page in early summer 2010, once all the data are collected and reports written.

Introduction

Aerial ungulate surveys provide information on population size and trend, population demographics and reproductive output (Lancia et al. 2005). The Alberta Government (Alberta Sustainable Resource Development, ASRD) relies on survey information to set hunting quotas and assist with land use planning efforts. Alberta Conservation Association (ACA) works in partnership with ASRD to conduct these surveys across more than two dozen wildlife management areas.

Methods

Alberta Conservation Association has funded aerial ungulate survey flights in Alberta since our inception in 1997. This project was historically led by ASRD biologists, with relatively little

involvement from ACA staff across the province. Beginning in 2007 and following direction from the Deputy Minster of ASRD, we began playing a much more active role in the planning, sampling and reporting of 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 2009/10, ACA staff participated in the delivery of 29 surveys conducted under the D-AUS partnership. All pronghorn surveys were flown as part of a single sustained effort, although they have historically been budgeted as distinct surveys for each of the antelope management areas surveyed and continue to be counted as such here. Random stratified block designs were used for moose, elk, and most deer surveys. Bighorn sheep, mountain goat, bison and pronghorn surveys were conducted as a total count of previously-identified ranges or management areas. One deer survey was conducted as a total count. As part of our commitment to continual improvement, we partnered with ASRD and the University of Montana to test methods for collecting additional information during pronghorn and moose surveys using distance sampling and sightability correction factors.

Results

During 2009/10, we conducted surveys for all harvested ungulate species in Alberta (Figure 1), providing population information for 48 management areas (Table 1). Our staff participated in planning, data collection and reporting for all 29 delegated surveys, co-leading these surveys under the D-AUS partnership with ASRD. Our staff also assisted ASRD with two additional surveys funded through ASRD. In addition, we conducted continual improvement survey trials and implemented new survey approaches for both pronghorn antelope (in collaboration with ASRD) and moose (in collaboration with the University of Montana and ASRD). Wild Sheep Foundation Alberta joined us as an important funding partner, contributing $22,000, which enabled us to survey additional sheep ranges. We entered all data into the Fisheries and Wildlife Management Information System (FWMIS). We will upload summary information to our web page for public viewing once final reports are completed in early summer 2010.

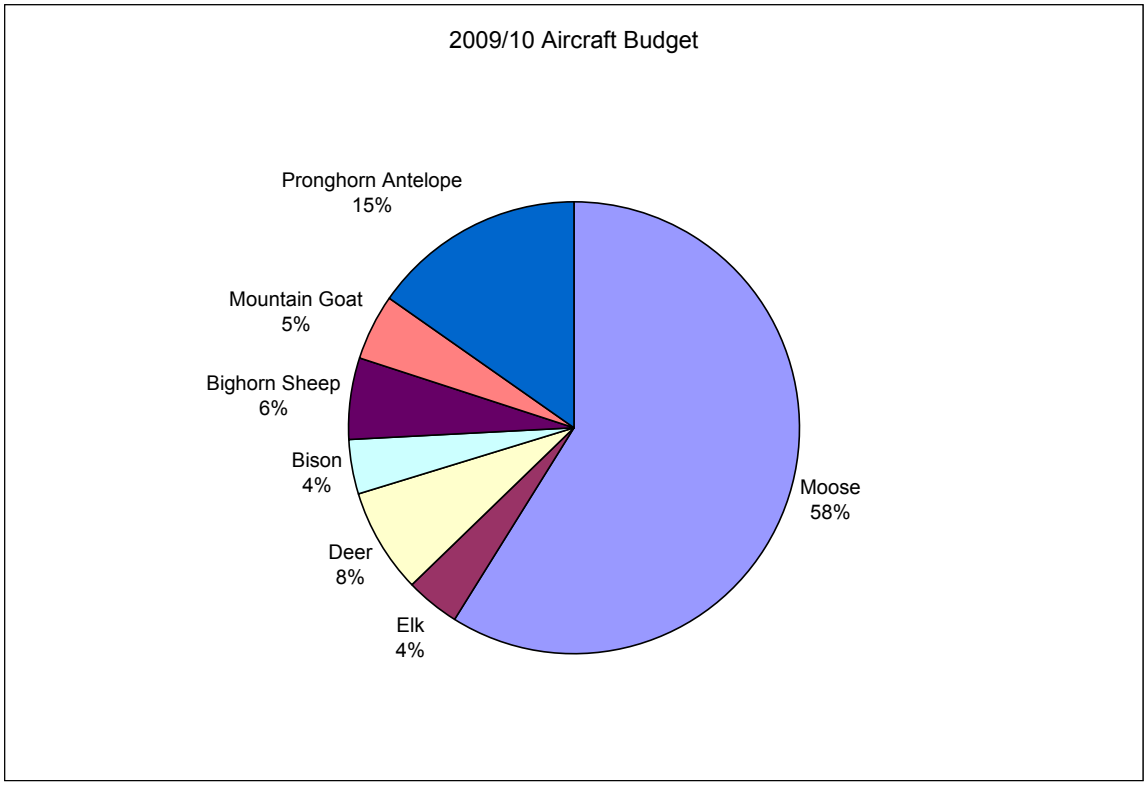

Figure 1. Relative amount of ACA funding used to fund aerial surveys for the various ungulate species in Alberta during the 2009/2010 fiscal year. Survey priorities are determined by Alberta Sustainable Resource Development.

Table 1. Data collection summary for surveys conducted in 2009/2010.

Primary Species of Interest	Survey type	Number of surveys	Total number of management units/ areas*
Mule deer and/or white-tailed deer	Random stratified block/ Total Count	4	5
Bison	Total count	1	2
Elk	Random stratified block	1	2
Mountain goat	Total count	2	5
Moose	Random stratified block	9	12
Pronghorn	Transect survey	9	9
Bighorn sheep	Total count	3	13

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

Conclusions

In the third year of full ACA participation in delivery of aerial ungulate surveys, our staff played key roles in the planning, sampling and reporting phases of all of the 29 surveys delegated to us. In addition to these efforts, we also implemented distance sampling trials for pronghorn antelope, collaborated in the development of sightability corrections for moose, and assisted with two additional surveys with ASRD. Survey information will continue to be posted to our web page, making it available to the hunters and anglers who pay for most of the costs associated with this project.

Communications

- Presentation on the aerial survey program to the Central Alberta Trophy Club in April 2009.
- Full data reports for 2007/08 and 2008/09 posted on our website in July 2009.

- Creation of a database on our web page enabling the public to search for survey information by species or wildlife management unit (WMU) for results beginning in 2007 through winter 2009.
- Aerial survey executive summaries (2007/08 and 2008/09) posted on our website in March 2010.
- Production of an information commercial by Michael Short focusing on aerial surveys aired on CTV and Access television stations.

Literature Cited

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.