Alberta Conservation Association
2010/11 Project Summary Report

Project Name: *Ungulate Winter Range Restoration*

Wildlife Program Manager: Doug Manzer

Project Leader: Chad Croft

Primary ACA staff on project:

Chad Croft, John Hallett, Ryan Hermanutz, Michael Jokinen, Corey Rasmussen, Layne Seward, Mike Verhage and Shevenell Webb

Partnerships

Alberta Sustainable Resource Development
Tay River Environmental Enhancement Fund (Shell Canada Limited)

Key Findings

- Participated in two meadow prescribed burns along the Clearwater River, in partnership with Alberta Sustainable Resource Development.
- Collected post-burn year 1 vegetation response monitoring data within two prescribed burns.
- Completed field validation of broad vegetation characterizations in the south Porcupine Hills.
- Completed a draft scoping exercise and inventory protocol for the implementation of habitat enhancements on ACA managed lands.

Introduction

Although initiated with reasonable intentions for protecting national heritage areas, commercial forests and communities, wildfire control activities have had serious ecological implications for wildlife habitat value in some areas of Alberta through impacts on vegetation patterns and stand age (Andison 2000, Smith 2000, White et al. 2003). Each year, a lack of fire in these ecosystems results in incremental habitat loss for a diverse group of species that range from alpine butterflies to elk and grizzly bears (Pengelley and Rogeau 2001).

Prescribed burning and mechanical clearing provide methods for restoring ecosystem condition in areas affected by fire suppression. These methods are considered to be particularly valuable for restoring habitat value for ungulates in Alberta (Gunson 1990). Alberta Conservation Association (ACA) works with Alberta Sustainable Resource Development (ASRD) and other conservation groups to carry out such treatments as part of our Ungulate Winter Range Restoration (UWRR) project.

Methods

Alberta Conservation Association worked with the Forestry Division of ASRD to provide logistical support to burn teams by deploying and monitoring remote weather stations, planning and constructing fireguards, and monitoring burn perimeters during treatment implementation.

As part of our prescribed burn monitoring program, ACA established randomly-selected monitoring plots within existing sample areas and measured post-burn vegetation characteristics as they relate to key habitat indicators, to provide feedback on whether or not prescribed burn treatments are adequately contributing to project objectives.

As an extension of the Petro-Canada (Suncor) Sustainable Grasslands Program project, we completed a field validation of broad vegetation characterizations (land cover types) used for quantifying forest encroachment on grassland habitats. We completed validation of land cover types by establishing 65 randomly-selected sampling sites across the south Porcupine Hills and field assessing the vegetation characteristics in comparison to remote-sensed classifications.

We facilitated collaboration between ACA's Land Management, Fisheries and Wildlife program areas to develop an approach for leveraging expertise and resources among program teams in order to efficiently and effectively identify habitat restoration opportunities on ACA managed lands.

Results

In spring 2010, ACA provided logistical and planning support to ASRD during two meadow burns in the Clearwater River subbasin (05DB): South Idlewilde Unit 2 (~28 ha) and Unit 6 (~41 ha). Both of these burns were proposed by ACA to enhance ungulate winter range habitat values. The 2010 burns increased the total meadow habitat area burned in the Upper Foothills natural subregion to ~134 ha over three years. This total burned area achieves 33% of ACA's 10-year target (418 ha) for disturbance rate in these habitats. We used financial support from the Tay River Environmental Enhancement Fund to rent aircraft needed for these burns.

We evaluated 50 land cover type polygons in the southern Porcupine Hills to ground truth the accuracy of remote-sensed imagery previously created through the Petro-Canada (Suncor) Sustainable Grasslands Program. Accuracy of the remote land cover type classifications averaged 83% across all cover types (range = 57% to 100%).

As part of the initiative to leverage expertise between ACA program areas, we completed a scoping exercise and developed a draft inventory protocol for evaluating habitat restoration opportunities on ACA managed lands.

Conclusions

We continued our incremental approach to restoring the ecological role of fire in important ungulate habitats in the Clearwater River subbasin (05DB) through our collaboration and partnership with ASRD. In accordance with ACA's approach of planning for and creating single

disturbance events, where disturbance events are composed of multiple disturbed patches, we have achieved 33% of our 10-year objective for meadow burning in the Upper Foothills natural subregion of the Clearwater River subbasin.

The validation of an acceptable level of accuracy in the land cover type characterization in the south Porcupine Hills provides a basis for moving forward, engaging interested stakeholders, and identifying habitat values, as well as habitat restoration opportunities. To this end, ACA is proposing to develop a landscape-level plan for the south Porcupine Hills study area in 2011 using our ecosystem management approach.

In addition to working in landscape units, we have initiated a process by which habitat restoration values and opportunities can be evaluated on ACA managed lands. This process will be pilot-tested in 2011 and will involve leveraging expertise and resources among ACA's three program areas.

Communications

The Landslide Lake Interpretive Fire Trail project represents a communications outreach by-product of the UWRR project. Communications included:
- Published articles in ACA *Conservation Magazine*, ACA Conservation Site Guide (*Discovering Alberta's Wild Side – Guide to Outdoor Adventure*), *The Edge Forest Innovation Magazine*, and several local newspapers.
- Establishment of the Landslide Lake Interpretive Fire Trail in the Cline River subbasin.
- Production of Landslide Lake Interpretive Fire Trail brochure and Fire Fact Sheet.
- *Let's Go Outdoors* radio broadcast.

Literature Cited

Andison, D.W. 2000. Landscape-level fire activity on foothills and mountain landscape of Alberta. Alberta Foothills Disturbance Ecology Research Series, Report No. 2, Foothills Model Forest, Hinton, Alberta.

Gunson, J.R. 1990. Management plan for elk in Alberta. Discussion draft. Prepared by the Fish and Wildlife Division of Alberta Forestry, Lands and Wildlife, Government of Alberta, Edmonton, Alberta. 181 pp.

Pengelly, I., and M-P. Rogeau. 2001. Banff field unit fire management plan. Banff National Park, Banff, Alberta. 132 pp.

Smith, J.K., ed. 2000. Wildland fire in ecosystems: effects of fire on fauna. General Technical Report RMRS-GTR-42-vol. 1, U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station, Ogden, Utah, USA. 83 pp.

White, C.A, I.R. Pengelly, and D. Zell. 2003. Landscape fire regimes and vegetation restoration in Banff National Park, Alberta. Occasional Paper BNP-2003-01, Parks Canada, Banff, Alberta.

View of Upper Foothills meadow (South Idelwilde burn unit 6) in the Clearwater River subbasin (05DB), May 2010. The prescribed fire was aimed at reducing meadow encroachment and increasing habitat diversity. (Photo: Corey Rasmussen)

Reduction of shrub encroachment within the prescribed burn treatment unit in Upper Foothills meadow within the Clearwater River subbasin (05DB), May 2010. (Photo: Corey Rasmussen)

Forest encroachment on grassland habitats in the south Porcupine Hills, southwest Alberta, September 2010. (Photo: Mike Verhage and Layne Seward)

Post-burn vegetation monitoring, Upper North Saskatchewan prescribed burn, July 2010. Left to right: Ryan Hermanutz and Mike Ranger. (Photo: Shevenell Webb)

Lodgepole pine (*Pinus contorta*) regeneration, post-burn year 1, Upper North Saskatchewan prescribed burn, July 2010. Shown: Ryan Hermanutz. (Photo: Shevenell Webb)