

Alberta Conservation Association 2015/16 Project Summary Report

Project Name: Restoring Natural Habitat for Wildlife

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Partnerships

Alberta Agriculture and Forestry
Alberta Environment and Parks
Alberta Fish & Game Association
Wild Sheep Foundation

Key Findings

- We co-authored an article with Alberta Agriculture and Forestry staff on prescribed burning to be published in the March 2016 edition of the Canadian Institute of Forestry publication *Success Stories from Canadian Forests*.
- We supported the implementation of the Hummingbird Creek prescribed burn, which was partially achieved in spring 2015 with a burn area of about 202 ha.
- We completed data collection to evaluate the desired vegetation response to a prescribed burn (six-year post-burn) in the Upper North Saskatchewan River drainage.

Introduction

Over time, anthropogenic activities and land management decisions have slowly altered the natural state of many wildlife habitats across Alberta. For example, in some areas of Alberta, wildfire control has had serious ecological implications for vegetation patterns and stand age resulting in incremental habitat loss for a diverse group of species ranging from alpine butterflies to elk and grizzly bears (White et al. 2003; Pengelly and Rogeau 2001; Andison 2000; Smith 2000). The primary focus of the Restoring Natural Habitat for Wildlife project is to restore natural ecosystem patterns and wildlife habitat values within landscape units (e.g., watershed subbasins) and focal areas (e.g., public lands, and Alberta Conservation Association [ACA] Conservation Sites) that have aged beyond the natural range of variability.

Methods

Using an ecosystem-management approach, we continued our work with Alberta Environment and Parks, and Alberta Agriculture and Forestry to incorporate species, ecosystem and landscape

values into habitat treatments, including prescribed burns on public lands. ACA staff assisted Alberta Agriculture and Forestry in delivering prescribed burns, but we limited our participation to support and observer roles because of insurance and liability issues.

In 2015/16, we worked with our partners to develop new sites for sheep and other ungulates, including participating in the development of burn plans, and implementing and monitoring treatments. We participated in burn-day observations and discussions with Alberta Agriculture and Forestry at the Hummingbird Creek burn west of Rocky Mountain House.

We also conducted year six of post-burn habitat response monitoring in the Upper North Saskatchewan River (NSR) (Cline River subbasin) prescribed burn west of Rocky Mountain House. This evaluation is designed to provide feedback on whether our treatments are adequately contributing to wildlife objectives. Our landscape objectives attempt to bring forest age-class to within a natural range of variability. Ecosystem objectives are intended to emulate disturbance patterns within similar ecosystems. These two objectives are primarily GIS-based exercises. Our species objectives are measured on the ground to identify how our treatments influence forage, predator and human avoidance, and cover. We collected data within five predetermined study areas within subalpine and montane areas of the NSR prescribed burn. Each of these study areas contained 25 randomly selected study sites, of which a minimum of 18 study sites were sampled. Pre-determined terrain (e.g., slope, aspect), vegetation (e.g., species, herbaceous and shrub biomass), and habitat (e.g., distance to cover and escape terrain, horizontal visibility) characteristics were measured along a 30 m transect within each study site. Vegetation samples collected within each study site were dried and weighed in our laboratory to complete the sampling effort.

In 2015/16, we also continued to work with ACA Land Management staff to design habitat treatments on ACA titled lands to benefit wildlife.

We also updated and completed the Porcupine Hills Restoration Plan, and we are currently completing our post-burn report for the North Saskatchewan River prescribed burn and are preparing an assessment report for the Hutton Creek prescribed burns.

Results

Conditions in spring 2015 allowed for approximately 202 ha to be burned west of Rocky Mountain House, contributing to forest protection and habitat enhancement in our Central Region. About 38 ha near Hummingbird Creek, 95 ha along the Upper Clearwater River, and 69 ha in the South Idlewilde meadow complex were burned. The South Idlewilde burns were initiated by ACA prior to 2008 to enhance elk habitat. In our Northwest Region, prescribed burn conditions were not as favourable, resulting in limited fireguard burning only.

In August 2015, we completed the six-year post-burn inventory for the Upper North Saskatchewan River prescribed burn conducted in 2009. We collected data at 92 sites within the six-year-old burn area.

We also planned a pattern of forest harvest within one of ACA's titled properties for cutting in 2016. If the fire hazard is low early in the spring, Alberta government wildland firefighters will conduct a series of hand-cuts on the property to benefit wildlife habitat.

Conclusions

Prescribed burning is a habitat management tool that can effectively reintroduce natural variability and diversity into landscapes where natural, uncontrolled burns have been suppressed. In 2015/16, we continued our incremental approach to restoring the ecological role of natural disturbance in important habitats in several focal areas through collaboration and partnership with the Alberta government. In addition, we continued to collaborate with other ACA programs to help us implement treatments on our titled properties for the benefit of various wildlife species.

We are currently preparing reports on the Upper North Saskatchewan River and Hutton Creek prescribed burns, which should further demonstrate the value of prescribed burning in low disturbance areas.

Communications

- ACA co-authored an article with Alberta Agriculture and Forestry staff on the subject of prescribed burning to be presented in the Canadian Institute of Forestry publication *Success Stories from Canadian Forests*, March 2016 edition. This article should help spread the message that prescribed burns can be safely carried out to achieve a variety of objectives and help validate such practices.
- We met with Alberta Environment and Parks, and Alberta Agriculture and Forestry in our Northwest and Central regions to maintain and enhance partnerships and discuss additional prescribed burn opportunities.
- Through discussions with Alberta Agriculture and Forestry staff in our Northwest Region, we reached an agreement to have wildfire firefighters conduct habitat enhancement treatments on ACA lands. This agreement will help pave the way for future co-operative habitat enhancement efforts on ACA's titled properties.
- We maintained communication with Wild Sheep Foundation and Alberta Fish & Game Association in pursuit of habitat enhancements for bighorn sheep.
- We engaged in further discussions with ACA Land Management staff to coordinate efforts to plan habitat enhancements on ACA titled lands. We developed a list of potential properties to visit and further assess. Exceedingly busy schedules of staff did not allow for site visits this year.

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, Canada.

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

Smith, J.K. (editor). 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, Canada.

Photos



Aerial image of the South Idlewilde prescribed burn unit, Upper Clearwater River. Photo: Corey Rasmussen



Inventorizing the Upper North Saskatchewan River prescribed burn. Photo: Corey Rasmussen