

Alberta Conservation Association 2007/08 Project Summary Report

Project name: Habitat and Disturbance in Wildland Parks

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Partnerships:

Alberta Tourism, Parks and Recreation

Key findings

- The extent of off-highway vehicle use and impacts were assessed, with all trails categorized and mapped.
- Vegetative communities were documented for three Wildland Parks using a GIS.
- Invasive species were documented and uploaded to GIS maps.

Introduction

A Multiple Component Inventory of Peace Corridor Protected Areas was initiated in 2005. Alberta Tourism, Parks, and Recreation (ATPR) and Alberta Conservation (ACA) formed a partnership to identify species, communities, and landscape structures at risk within three Provincial and Wildland Parks. The three protected areas included: Greene Valley Provincial Park, Peace River Wildland Provincial Park, and Dunvegan West Wildland Provincial Park.

This multifaceted study will ultimately be used to guide management decisions in the parks, and serve as a benchmark for the future. This analysis may also act as a framework for other areas, guiding planning activities that seek to identify high use and conflict areas.

Six major project objectives were outlined to help in the decision-making process:

1. Provide an inventory of dominant vegetative communities;
2. Identify location and extent of off-highway vehicle (OHV) use;
3. Apply existing information to evaluate responses of wildlife to OHV activity;
4. Document occurrences of noxious and nuisance weeds;
5. Provide an inventory of agricultural land-use infringement areas; and
6. Provide a comprehensive collection of maps of the study areas displaying the multiple components listed in the above objectives.

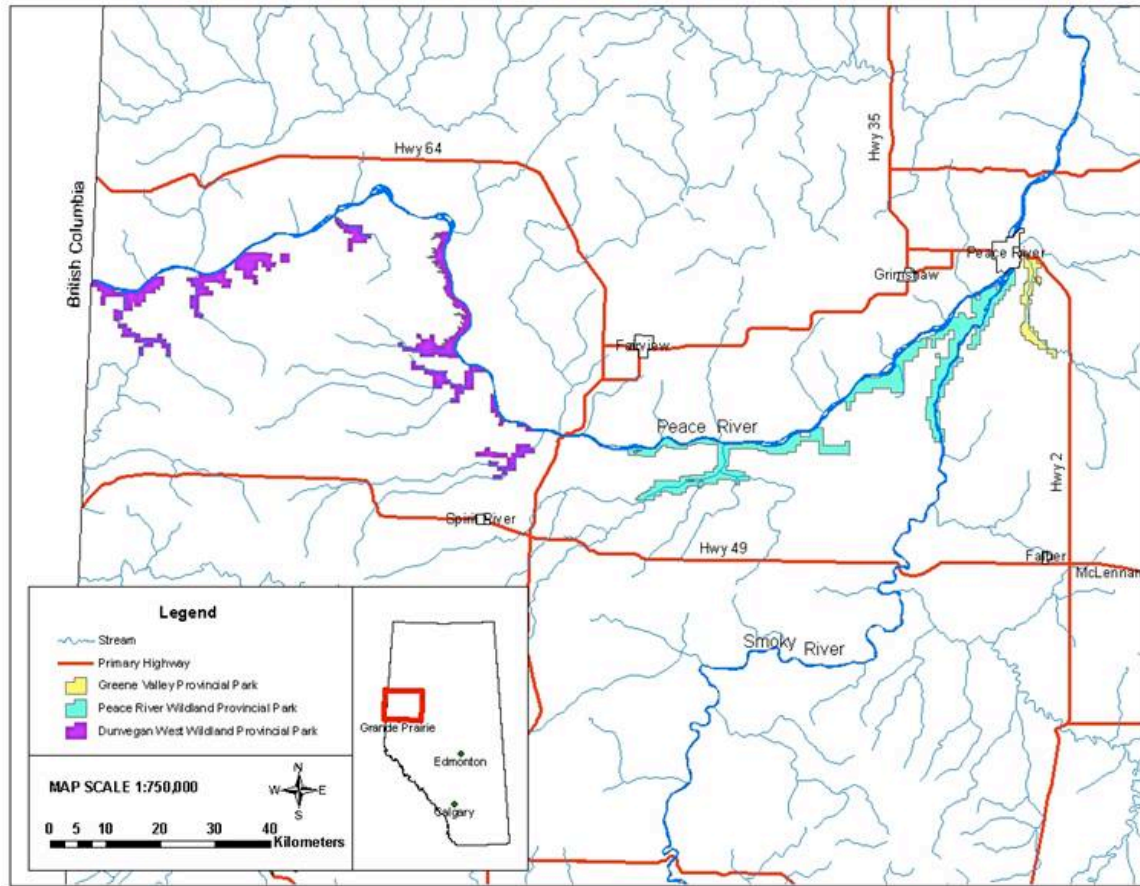


Figure 1. Map of the Greene Valley Provincial Park, Peace River Wildland Provincial Park, and Dunvegan West Wildland Provincial Park.

Methods

The inventory of existing vegetative communities consisted of two components: remote sensing through a Geographic Information System (GIS) platform followed by ground truthing. The GIS portion included delineation of broad vegetative community types based on high resolution satellite imagery (Vastus 1m). Polygons were created digitally with a GIS software to outline the dominant vegetative community types. The ground-truthing portion involved visiting random sites within each of the dominant community types to compare remotely sensed delineation with in-situ observation, reconcile initial delineation, and to form a more detailed description of community types with the use of reference community types as classified by Stone et al. (2007). Ground truthing took place throughout the growing season (June – August) when plants were most easily and reliably identified.

A complete inventory of existing OHV trails within the study areas took place between June and October of 2005, 2006, and 2007. Trails were mapped out in their entirety with the use of handheld Global Position System (GPS) devices; either on foot or with the use

of four-wheel-drive OHVs. A suite of parameters that described the condition and use of trails were selected and used collectively to assign a trail use index value of low, medium, or high to each trail segment.

We reviewed the literature to provide a framework for assessing the response of various wildlife species to OHV activity. We placed species of interest into groups or guilds (e.g. interior forest species, edge-favouring species) to categorise their generalized response to OHV activity.

Incidental sightings of restricted, noxious, or nuisance weeds, as listed in the Alberta Weed Control Act (Queen's Printer 2007), were recorded during the ground-truthing portion of the vegetative community inventory as well as during the OHV trail inventory. The location and extent of occurrence (i.e., patch size, density) were recorded.

To detect infringement of private agricultural land in the study areas, imagery used during the GIS portion of vegetative community assessments was analyzed. Polygons were created identifying areas of agricultural infringement.

A collection of maps integrating the above information was created. Digital copies of maps were included in the final report.

Results

In total, eight broad vegetative community types were identified through satellite imagery interpretation. Vegetative community composition consisted of mainly deciduous cover, while shrubland, grassland, mixedwood, coniferous, and wetland/stream cover were present in low proportions. Ground-truthing confirmed the occurrence of these community types and allowed for slight alteration of some community polygons to refine the initially delineated polygons. Within the broad vegetative community types, 22 reference communities were identified.

All of the study areas contained OHV trails. The majority of trails were primarily used by OHVs, with most classed as low use. The OHV trail network is comprised of narrow (0.5 m) motorcycle trails to wide (4 m) trails used by trucks. The average width for all trails was 1.5 m. Peace River Wildland Provincial Park contained the highest density of trails at 0.62 km trails/km², while Greene Valley Provincial Park contained the lowest density of trails at 0.26 km of trails/km². Dunvegan West Wildland Provincial Park had 0.35 km of trails/km².

In a review of past studies investigating the effects of non-consumptive recreation on wildlife, Boyle and Samson (1985) provided a summary of positive, negative, and/or none/undetermined impacts of a variety of recreation types on different taxonomic groups. Negative OHV impacts on birds, mammals, and herpetofauna existed in all studies included (n=24). Species that exhibit certain behavioural and social organization characteristics such as colonial behaviour (e.g., sharp-tailed grouse leks), unique breeding patterns (e.g., red-sided garter snake), restricted distribution (e.g., log-toed salamander),

or rigid habitat requirements (e.g., peregrine falcon) are of concern as these species' populations may be much more sensitive to activity (Boyle and Samson 1985).

In total, 11 weed species listed as either noxious or nuisance (Queen's Printer 2007) were found in the study areas. Frequency of occurrence ranged from uncommon to frequent. Weeds were most frequently observed in grassland communities.

Agricultural encroachment has occurred in each of the three study areas. In all cases, the agricultural sections of land bordering the study areas have expanded to include portions of the parks.

Conclusion

This study has gathered and analyzed a vast amount of data about various components of the three protected areas involved. With these baseline data, park managers have a better understanding of the extent of use of OHVs in the parks and are able to make more informed decisions on how to manage access. Continued monitoring of OHV trails, noxious and nuisance weed occurrences, and agricultural infringements is recommended.

Literature Cited

- Boyle, S.A., and F.B. Samson. 1985. Effects of non-consumptive recreation on wildlife: a review. *Wildlife Society Bulletin* 13: 110-116.
- Stone, C., M. Willoughby, and A. Rosendal. 2007. Guide to range plant community types and carrying capacity for the Peace River parkland subregion in Alberta. Pub. No. T/143, First Approximation, Sustainable Resources Development, Edmonton, Alberta. 134 pp.
- Queen's Printer. 2007. *Weed control act*. Alberta Queen's Printer, Government of Alberta, Edmonton, Alberta.



A high use trail within the Dunvegan Wildland Provincial Park. The trail has been in existence since the 1950s when it was established to bring logs down to the Peace River for transport. It is now used primarily by off-highway vehicles. (Photo: Ryan Hermanutz 2006).



A view of the diverse vegetation communities along the Smoky River from the lookout point in the Peace River Wildland Provincial Park. (Photo: Ryan Hermanutz 2006).