

Native Vegetation and Wetland
Inventory/GIS Mapping:
Parkland Natural Region

Ron Bjorge and Brett Boukall
Alberta Sustainable Resource Development
Fish and Wildlife Division

Parkland Natural Region – A Threatened Ecosystem

- covers approximately 9.5 % of Alberta (62,780 km²)
- broad transitional area between the dry grasslands and the moist boreal forest
- Characterized by productive soils, moisture and climatic conditions conducive to agriculture
- region of intensive human activity including agriculture, infrastructure, oil and gas operations and other industry
- This program focuses on the Central Parkland (orange)



Impacts-The Parkland Today

- most heavily impacted and populated Natural Region in Alberta
- Impacts include agriculture, infrastructure and oil and gas,
- Estimated 10-15% of the landscape remains as native vegetation
- loss of 63% of wetlands to agriculture (Strong and Leggat 1993)
- It is upon the remaining native vegetation and associated water that biodiversity in the Parkland is dependent upon



Non-native vegetation vs. native parkland



- Cultivating to shoreline, removal of natural vegetation (upper left)
- Monoculture (upper right)
- Natural vegetation, high biodiversity (lower left)

NATIVE VEGETATION INVENTORY AND MAPPING



Aspen Parkland is an endangered ecosystem. To protect the biodiversity of the Parkland, our objectives needed to answer the following questions:

- a) Where are our native vegetation patches and how much is remaining?
- b) Where are wetlands located and how many are left?
- b) Are they located on public or private land?

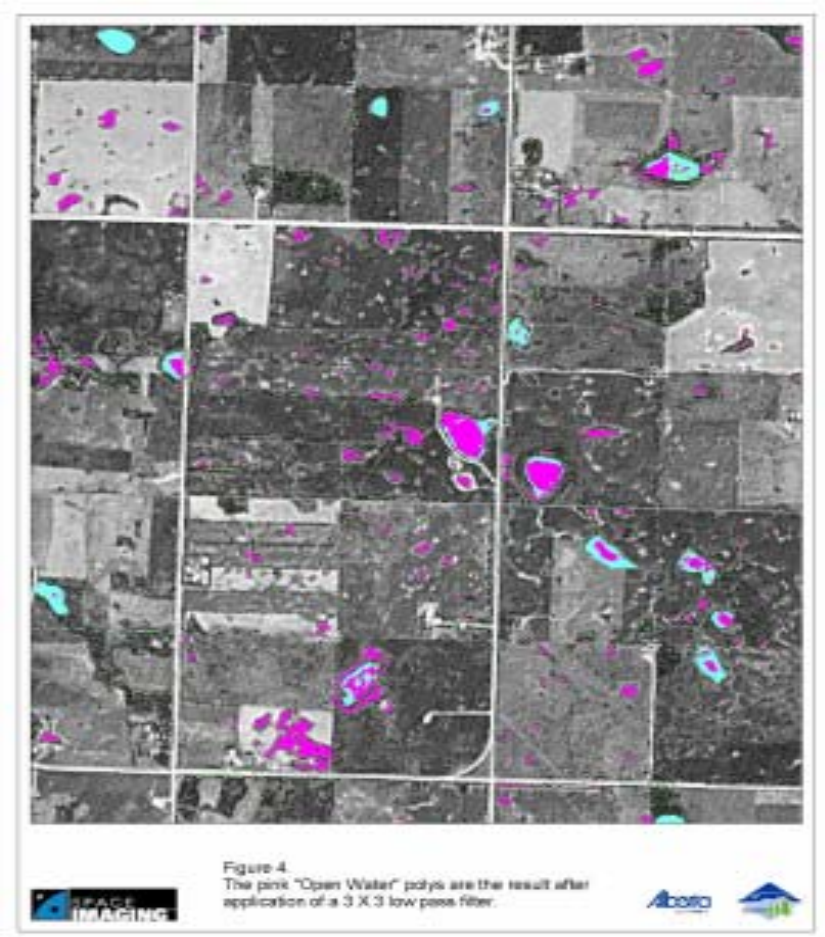
Objectives:

- A) Determine the amount, type (grassland, shrub, conifer, Aspen, Poplar) and size of remaining vegetation patches
- b) Determine number, size, and distribution of wetlands
- c) Evaluate the amount of remaining vegetation and wetlands located on public versus private land (land ownership)
- d) Combine all native vegetation, wetlands and land ownership in a GIS database so that protection and future loss can be accurately documented
- e) Conduct analysis of above parameters in relation to major geographic areas (WMU, watersheds, municipalities)



Methodology:

- Vegetation data layer derived from classified Landsat 7 images and 1:30,000 photographs,
- Wetland layer data derived from Access Hydrography, IRS imagery and 1:30,000 photographs
- Land ownership layer derived from provincial archives
- Size, shape, number and location of vegetation and wetlands will be determined according to land ownership (and other geographic areas)
- Finished product will be stored as disc and 1:20,000 and 1:50,000 hard-copy maps

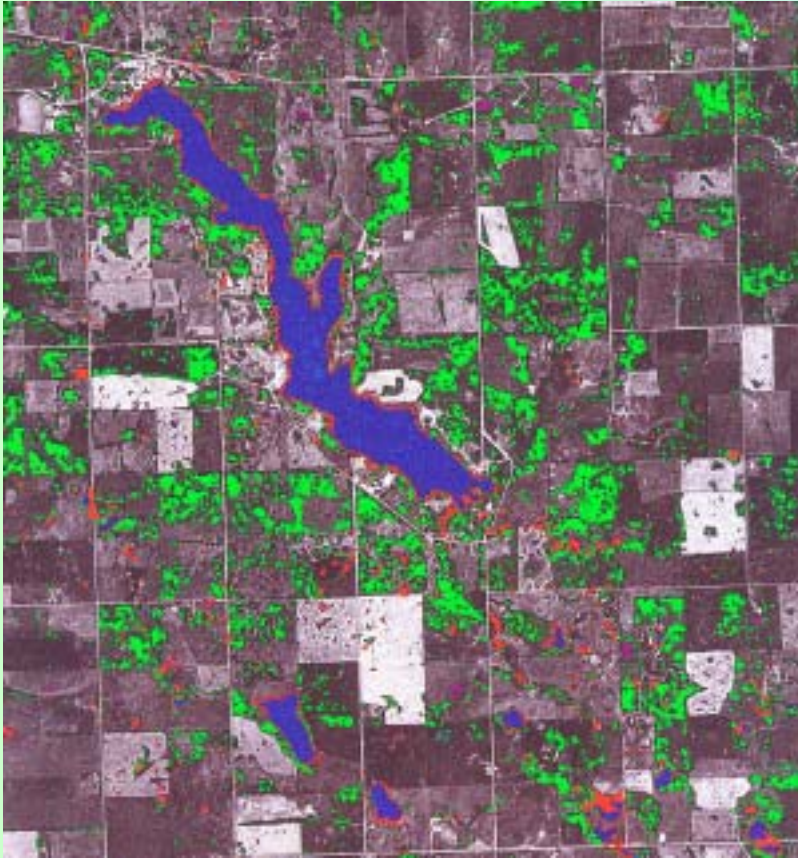


Project Benefits

- Identification of remaining native vegetation and wetlands (biodiversity)
- Basis for stewardship programs
- Provides basis for proactive planning between resource users (i.e. petroleum industry) and resource managers
- Basis for monitoring change on landscape
- forms a database, from which to estimate numbers and distribution of wildlife
- Framework for subsequent ecological investigations and management



Results and Products:



- Products include GIS database of wetlands, vegetation and ownership for the Central Parkland Natural Region
- Vegetation and water layers in the vicinity of Pine Lake

Partners

- Alberta Sustainable Resource Development
- CAPP/ERAC Broad Industry Initiative
- Ducks Unlimited/NAWMP
- Alberta Conservation Association
- Canadian Wildlife Service
- The Nature Conservancy of Canada