Grassland Vegetation Inventory (GVI)
Regional Landscape Analysis and Planning

Desired Planning Outcomes

The ***Land-use Framework (LUF)*** establishes the following desired planning outcomes for the province:

- Healthy economy supported by our land and natural resources
- Healthy ecosystems and environment
- People-friendly communities with ample recreational and cultural opportunities

Building on the framework set out by the LUF in the Regional Plan Terms of Reference, the ***South Saskatchewan Regional Plan Advisory Council*** (SSRP RAC) has developed two desired environmental planning outcomes:

- The health of ecosystems, which consists of water, land, air, and biodiversity, is valued by Albertans and needs to be sustained or improved through responsible stewardship.
- The biodiversity and ecosystem health and quality of forests, grasslands, parklands, aquatic environments, Badlands, and dunes are sustained through responsible stewardship and are valued by Albertans

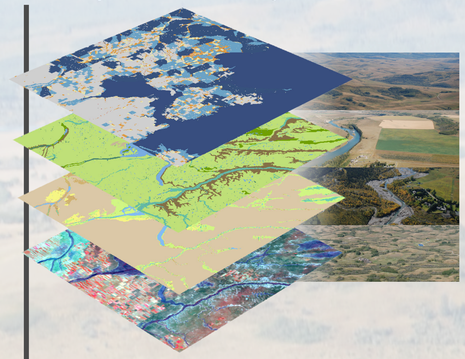
The Grasslands Vegetation Inventory (GVI) provides the base data needed to conduct the analyses required to inform the planning for the desired outcomes set forth by the LUF and the SSRP RAC.

Landscape Analyses using GVI

Grasslands Vegetation Inventory

The GVI provides the comprehensive biophysical, anthropogenic, and land-use inventory necessary to perform several important landscape analyses.

Landscape Pattern Analysis

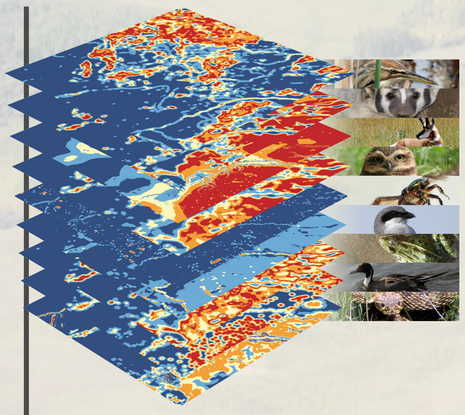


Landscape patterns are analyzed and compared with ecological thresholds to determine appropriate landscape composition and configuration for supporting biodiversity. This requires:

- classification of patch types and sizes
- analyses of contiguity / connectivity of patches
- identification of watercourses
- determination of riparian corridor extents

These fundamental methods of landscape analysis rely on data available in the GVI.

Habitat Suitability Indices

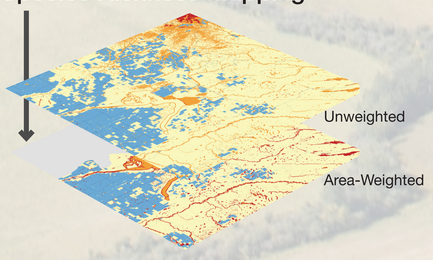


Individual species habitat models predict the occurrence of a species as a function of habitat attributes:

- vegetation type
- patch size
- configuration
- edge
- elevation
- soil type

Many of these attributes are either directly available in or derived from the GVI.

Species Richness Mapping



Species richness mapping uses landscape pattern analysis, habitat suitability indices, and species-habitat association matrices to map the spatial distribution of an entire set of species.

The results are then used to generate a species rarity analysis to identify the habitat patches necessary to capture the potential presence of all species in the region.

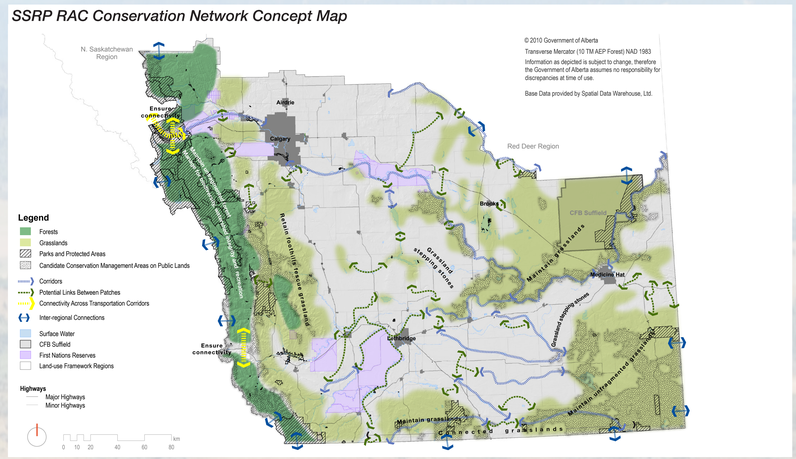
Planning Applications

Conservation Network Identification

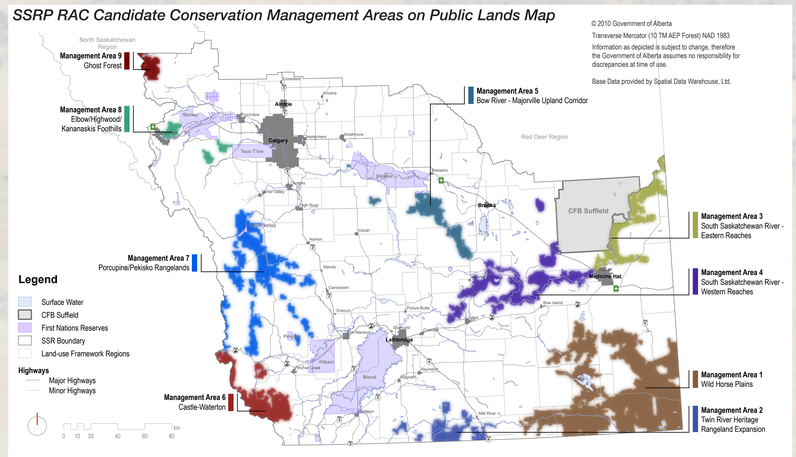
Along with anthropogenic and land-use inventories provided in the GVI, GVI-based landscape analyses provide input into a spatially explicit, multiple-objective modelling process that is used to identify potential management areas that meet conservation targets, while minimizing impacts on other sectors.

Such a modelling process was employed in the development of SSRP RAC's *Conservation Network Concept* map and *Candidate Conservation Management Areas on Public Lands* map.

SSRP RAC Conservation Network Concept Map



SSRP RAC Candidate Conservation Management Areas on Public Lands Map



Future Planning Recommendations and GVI

The SSRP RAC has acknowledged the challenges facing long-term sustainability of grasslands. Recommendations submitted to the Government of Alberta regarding grasslands managements include:

- "Where feasible, and in priority order, avoid, minimize or mitigate the conversion of native grasslands on public lands. Promote their restoration through the use of conservation and stewardship tools, incentives and other stewardship approaches."
- "Native grasslands are conserved by controlling tree and shrub encroachment and surface disturbance."
- "Landscapes where function, patch size and connectivity have been significantly diminished, and where fragmentation exceed thresholds under the regional biodiversity framework, are reclaimed and restored where practical."

The GVI helps to address these recommendations, supporting the continued development and implementation of management plans for all major grasslands.