



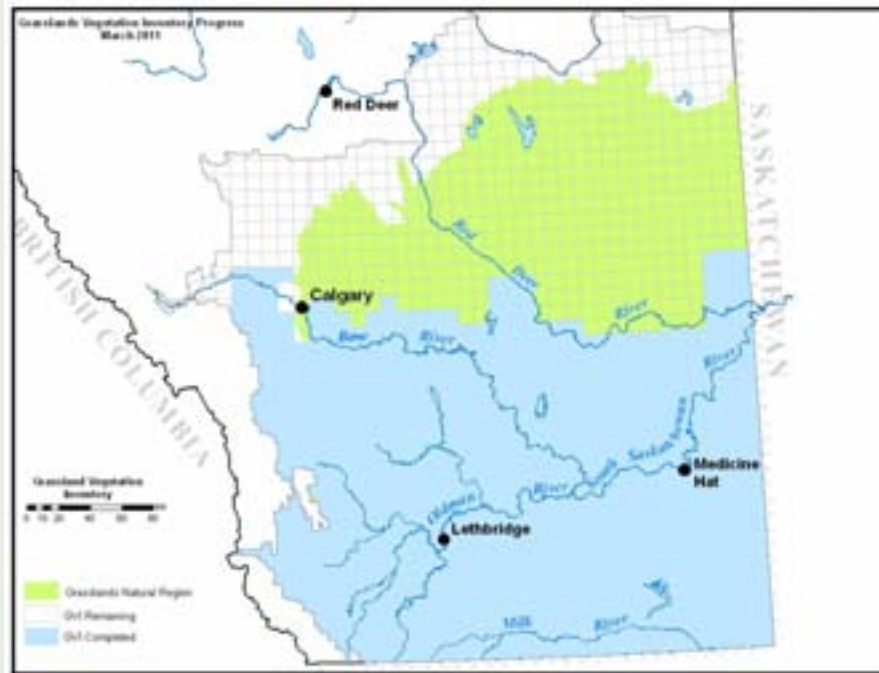
What is GVI?

GRASSLAND VEGETATION INVENTORY



Government
of Alberta

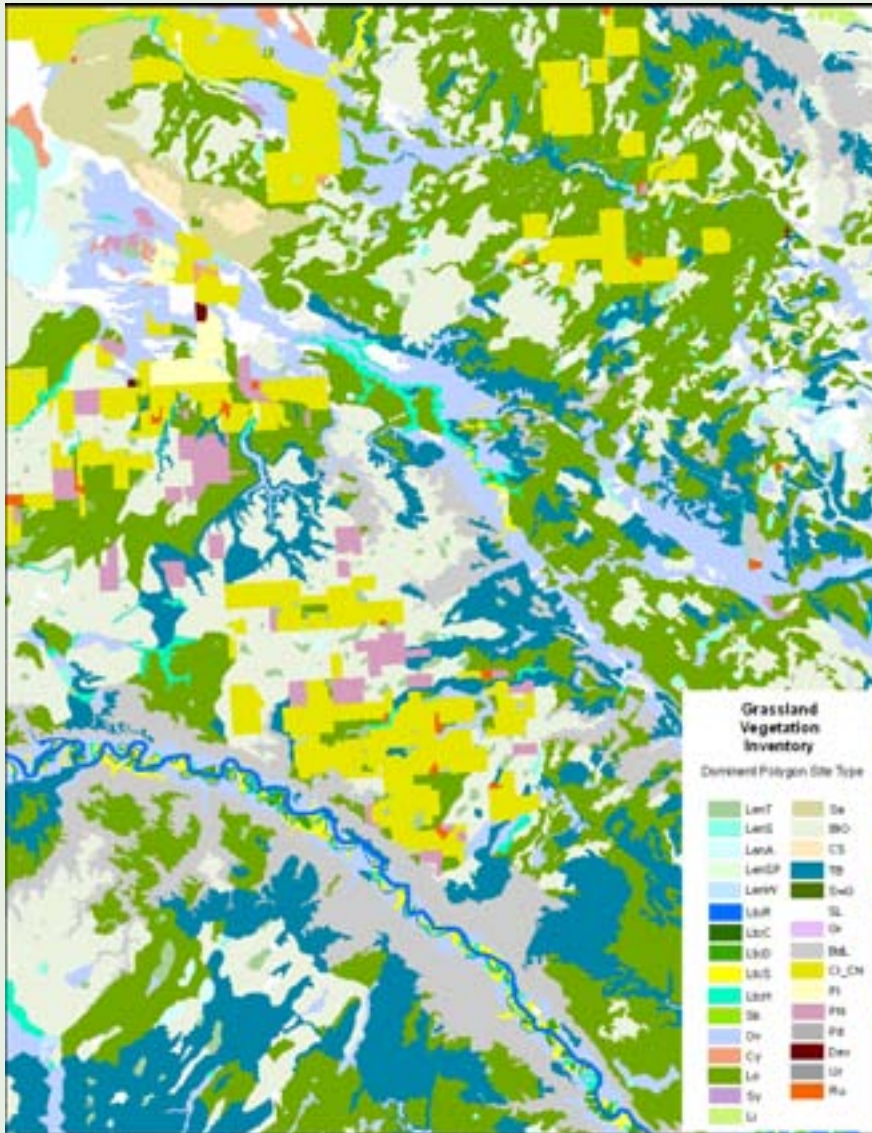
WHAT IS THE GRASSLAND VEGETATION INVENTORY (GVI)?



GVI progress to January 2011

- ✗ The GVI represents the Government of Alberta's comprehensive biophysical, anthropogenic and land-use inventory of the province's Grassland Natural Region.
- ✗ Information for the GVI project will be collected for the entire area regardless of jurisdiction including the foothills grasslands (water bodies, native or natural areas, and agricultural, urban and other anthropogenic areas).

WHY DO WE NEED GVI?

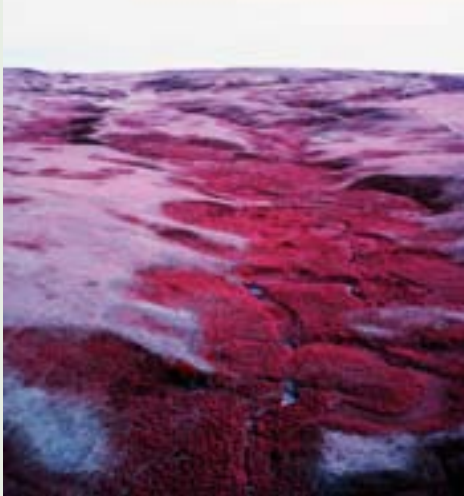


- ✘ There is a fundamental requirement for high quality spatial information to directly support the understanding and management of issues surrounding biodiversity, species at risk, public land and disposition management, carbon accounting, sustainable ranching and resource extraction industries.
- ✘ Existing inventory (eg. NPVI) did not adequately address current business needs, and it was difficult to implement policies, guidelines and practices to mitigate development in the current state.
- ✘ The GVI provides the underlying fabric necessary for all levels of government, industry and NGOs to manage environmental resources.

HOW WAS THE GVI DEVELOPED?



Landscape in true color



Same landscape in color infrared

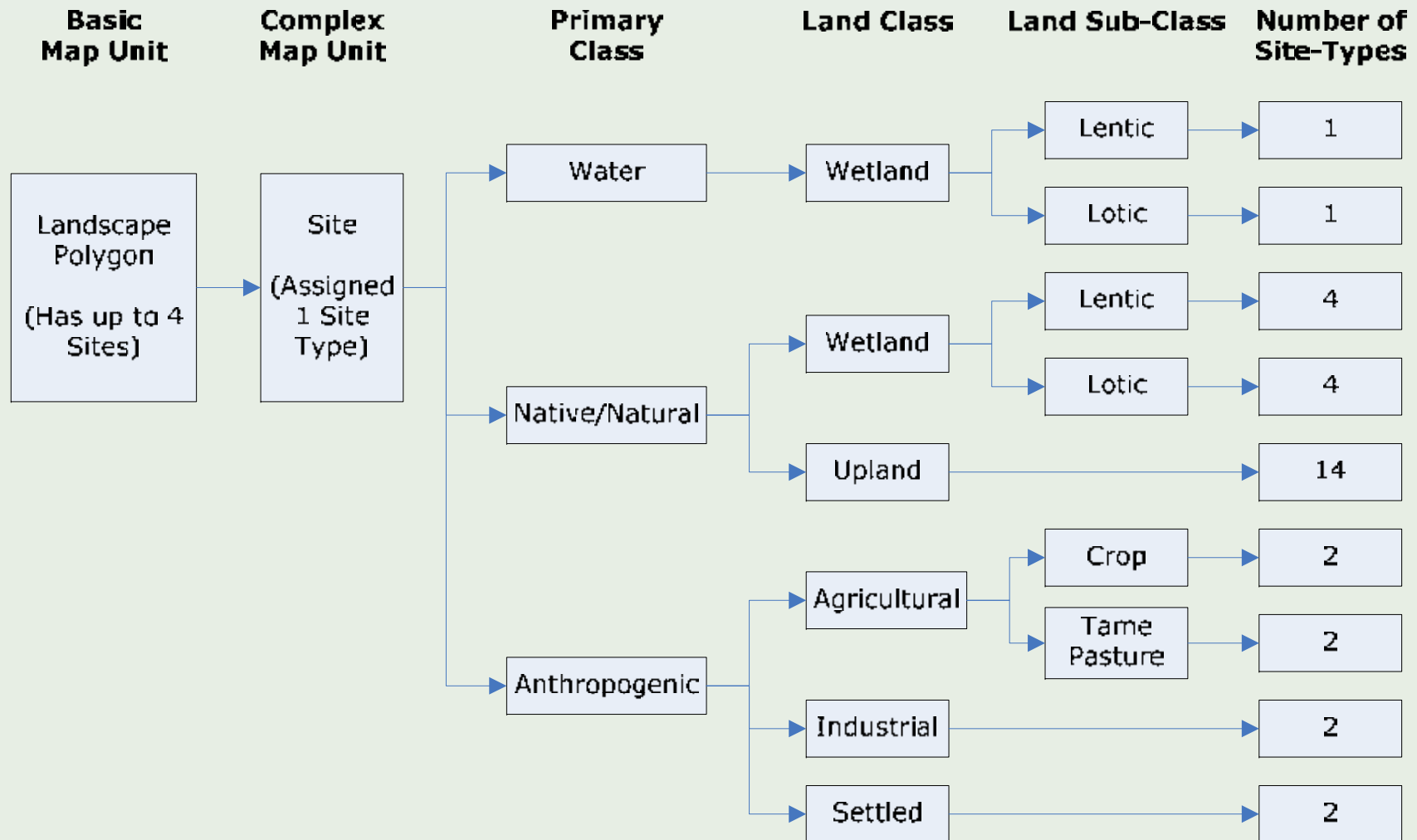
- ✘ The compilation of GVI is accomplished by photo-interpretation, using color infrared digital stereo models. This allows for a 3D view of the landscape and proper polygon delineation. Resolution of the imagery being used is 0.5 meters, allowing for very precise line placement and interpretation of the ground.
- ✘ GVI data is digitally captured on screen as polygons, lines, and points and attributed using standard forms and drop-down menus (GVI Tools). The geodatabase provides information on a number of different landscape features. These features (or *Sites*) are described by their *Site Type*.

SITE TYPES

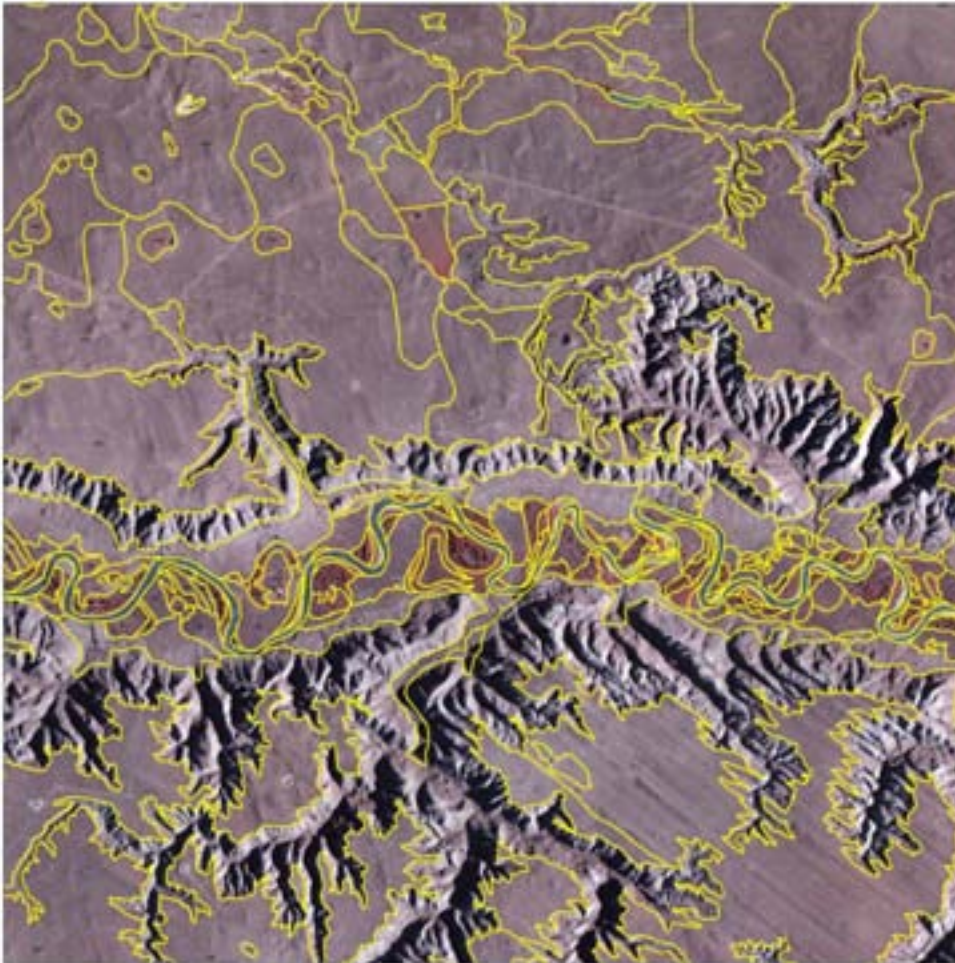
| Site Type | Code | Modifier |
|-----------|------|---|
| Pit | C | Coal |
| | S | Sand |
| | G | Gravel |
| | Y | Clay |
| | Q | Quarries |
| | U | Unknown |
| | R | Riparian |
| Developed | CFO | Confined feeding operation |
| | TR | Transportation and utility facilities and corridors |
| | AG | Agricultural research or processing |
| | IP | Industrial processing |
| | LG | Lagoons |
| | OG | Oil or gas facilities |
| | MI | Mining facilities |
| | U | Unknown |
| | R | Riparian |
| LenW | N | Native/Natural |
| | D | Dugout |
| | R | Reservoir |
| | BP | Open water beaver pond |
| CS | A | Active Erosion |
| CN | SN | Salinity |
| CI | SN | Salinity |
| PN | SN | Salinity |
| PI | SN | Salinity |
| Ur | GS | GreenSpace |
| Ru | GS | GreenSpace |
| LenSP | M | Marsh (Emergent) |
| | Sw | Swamp |
| | B | Bog |
| | FR | Rich Fen |
| | FP | Poor Fen |

- ✘ Some *Site Types* may be further described using site-type modifiers.
- ✘ Ground cover characteristics are described in general by
 - tree
 - shrub
 - herbaceous percent cover
 - height
 - distribution pattern
- ✘ Bare ground and water are also given percent cover calls if present.
- ✘ The geodatabase allows for specific entries regarding species-type and the percent cover of a species within a *Site*.

GVI HEIRARCHICAL CLASSIFICATION OVERVIEW

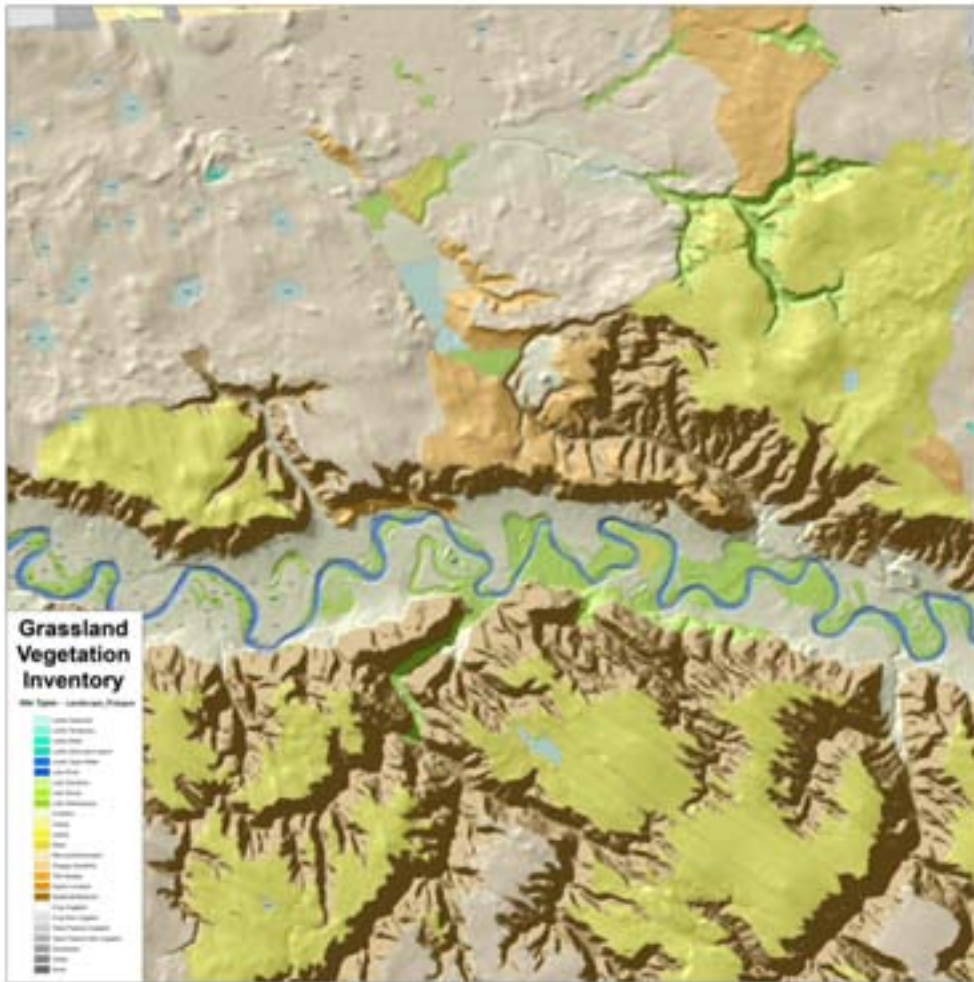


SOURCE IMAGERY WITH GVI POLYGONS OVERLAYED



- × Represents full detailed GVI
- × Each polygon can be highlighted and further described

GROUPING SIMILAR SITES



- × In this example the landscape is being grouped and represented as common themes.

SITE TYPE EXAMPLES

Pasture - Irrigated



Pasture - Non-irrigated



Anthropogenic – Agricultural

Crop - Irrigated



Crop - Non-irrigated

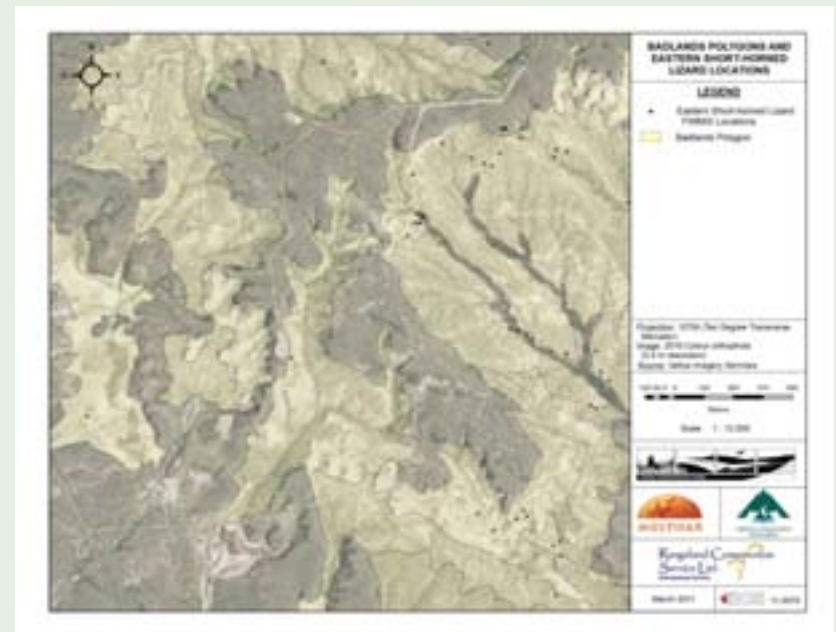
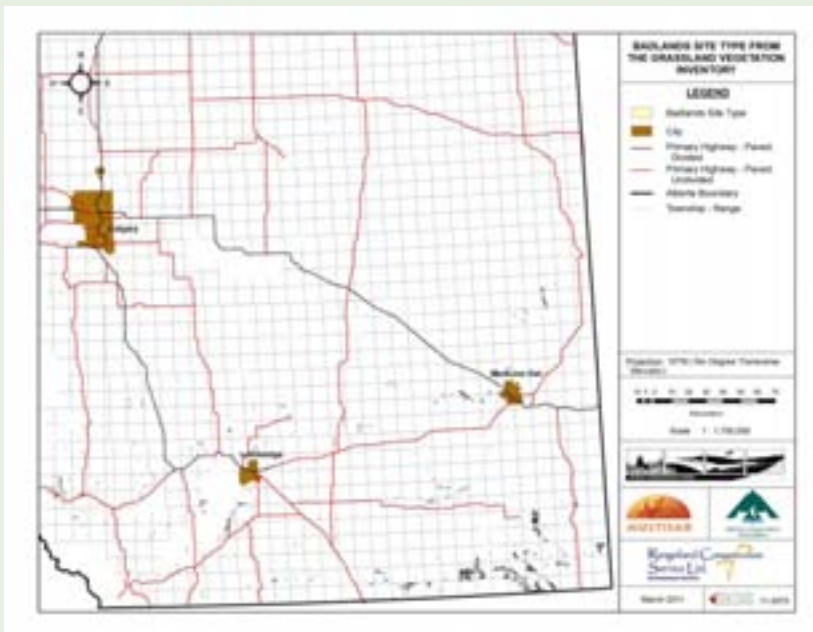


Other Anthropogenics



WHAT CAN SITE TYPE'S TELL US?

- ✘ Eastern short-horned lizards preferred habitat is steep-sided valley and coulee slopes
- ✘ Badlands site type from GVI
 - + Typically occurs on moderate to steep coulee or valley sides;
 - + Nearly barren or barren lands, with significant exposures of soft rock, hard rock, or surficial geologic material. Includes steep valley walls.
- ✘ Therefore, the Badlands site type may be a good predictor of lizard occurrence on the landscape



CONCLUSIONS

Grassland Vegetation Inventory

- ✘ Allows better characterization and extent of native landscapes in the grassland natural region.
- ✘ Is intended to meet the multitude of business needs integral to land-use planning and management in Alberta.
- ✘ Is the provincial biophysical and landuse inventory of grassland natural regions including foothills grassland.
- ✘ Addresses the needs defined by all levels of government, NGOs, the province's rangeland management, fish and wildlife, wetland management, and land use operations sectors.

CONCLUSIONS

“To achieve long-term Prairie Conservation goals, awareness and use of GVI is essential.”

Barry Adams,
Head Rangeland Resource Management,
Sustainable Resource Development.



REFERENCES

Grassland Vegetation Inventory (GVI) Specifications Alberta Sustainable Resource Development,
Government of Alberta 5th Edition June 29, 2010. revised July 13, 2010