

Protecting Species at Risk with a little help from GVI

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You don't need to be a modeler to understand the value of the Grassland Vegetation Inventory. Biologist **François Blouin** believes the Grassland Vegetation Inventory (GVI) provides the best look we have at the biophysical characteristics of the Grassland Natural Region, and it is a necessary tool for anyone involved in conservation or development planning. For François and the MULTISAR team, GVI offers new opportunities to foster species at risk conservation and management on the southern Alberta prairie landscape.

The Multiple Species At Risk Program, known commonly as MULTISAR, seeks to create awareness and conserve habitat for species at risk in the Grassland Natural Region (GNR). It is a partnership program between the Prairie Conservation Forum, Alberta Sustainable Resource Development, and the Alberta Conservation Association that works alongside ranchers to create integrated solutions to protect species at risk habitat while offering continued agricultural opportunities.

MULTISAR identifies rangeland that, if managed appropriately, offers the greatest possibilities to protect and restore threatened or endangered grassland species. The team works with individual ranchers to understand the unique conditions of the landscape, identify sites that have the highest value for species at risk conservation, and areas that are most suitable for the needs of the rancher. They can help identify the best location of new fences, the best bedding areas for cattle, or critical patches to avoid for wildlife protection. The intent is to influence land management decisions that benefit ranchers, sustain rangelands, conserve prairie habitat, and enable recovery of species at risk.

The grasslands have a long history of human development and some areas are more suitable to species at risk conservation and recovery than others. It is necessary to first understand what habitat is most suitable and then locate priorities for conservation activities. Before GVI, the Native Prairie Vegetation

Inventory (NPVI) was used to develop habitat models and to identify areas of high value for multiple species at risk. The NPVI was derived from air photos captured in the late 1990's to provide a general proportion of habitat types that could be found within a quarter section. It did not identify areas with continuous habitat characteristics, it did not provide the spatial detail on the location of the habitat, and it did not offer the necessary accuracy to develop robust habitat models for species at risk management. Through conversations with their partners it was recognized that a higher resolution, polygon-based vegetation inventory was needed to provide more complete and accurate detail of the grasslands landscape. These conversations helped spark the development of GVI.

MULTISAR staff worked closely with the GVI design team to identify priority areas to begin mapping and to identify features that would enhance the MULTISAR work. For instance, though GVI

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focuses on mapping polygons that indicate specific soil types, vegetation, and land features, for species at risk conservation it also captures a lone tree in the middle of native grassland, and shelterbelts surrounding abandoned farmsteads. These seemingly simple features offer important habitat for prairie species, including Ferruginous Hawks and Loggerhead Shrikes.



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The improvements GVI offers beyond the capabilities of NPVI, have enhanced the knowledge and efficiency of the MULTISAR work. Currently, MULTISAR is combining this new GVI information with Resource Selection Function Models, which are based on species observations. These models provide the relative probability that a given species at risk will use a particular habitat at a particular site. These models are being developed for 13 individual priority species, and will be combined into a single multi-species value model to identify the best areas to support maximum multiple species conservation and recovery.

GVI polygon maps are also useful for MULTISAR biologists and agrologists when conducting range health assessments and wildlife and vegetation surveys. The maps provide field staff with a greater sense of what they will find on the landscape and allow them to target areas for fieldwork. Wildlife surveys are conducted at pre-determined

points within GVI polygons where species observations are recorded. The GVI polygons allow biologists to relate the wildlife observation to a particular plant community, which is identified by range agrologists. The polygons offer a similar utility for range health assessments. By analyzing the results of wildlife observations and range health assessments, MULTISAR can develop habitat conservation strategies that benefit both the rancher and the species at risk.

Understanding GVI isn't something that the average person needs to do. But it becomes a powerful tool when MULTISAR staff sit across the table from a landowner with a map depicting range health and species at risk habitat and observations on their ranch. Landowners can see how their management practices have contributed to the health of the landscape and the species that it supports. To François this table top discussion is the highlight of François's MULTISAR work.

François cautions us to understand that good range health does not always equate to beneficial habitat for prairie species at risk. Consider the endangered Burrowing Owl. Their habitat preference evolved with Bison movements over the landscape. The herds disturbed the grasslands and these disturbed sites attracted colonies of Richardson's Ground Squirrel. The burrows of the Richardson's Ground Squirrels are "borrowed" by the owls for nesting. To encourage Burrowing Owl recovery, François may recommend strategic areas of heavily grazed patches. Part of François's work is to foster an understanding of the relationships amongst species, potential habitat sites, and the range health of the ranch to develop Habitat Conservation Plans.



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GVI is an important tool to support this work.

While François and his team supported the development of GVI, it wasn't until after they saw the results that they realized how powerful it was. To date, MULTISAR has covered over 250,000 acres, but there is a lot left to do. GVI has become an essential tool for MULTISAR and François is already imagining future uses. As the understanding of the relationship between grassland species and native grassland communities improves, GVI may one day support a predictive model for species occurrence and their expected densities at a particular site.

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