Grasslands and Watersheds

STORIES FROM PEOPLE. MAKING A DIFFERENCE.

PRAIRIE CONSERVATION FORUM

www.albertapcf.org

pHarps Photography

By overlaying GVI polygons on a sub-watershed map it is possible to determine the extent of riparian areas and the extent of human footprint.

Maggie Romuld has yet to use the Grassland Vegetation Inventory (GVI) herself, though she is excited for the opportunity. Rumors of it have been on the wind for a few years, and it caught Maggie's attention as a biogeographer and river scientist, and as someone who uses ecological classifications and inventories to read the landscape. She was recently invited to attend a presentation on GVI and this got her thinking about the range of opportunities that this new spatial inventory could provide for her work in integrated watershed management planning.

Maggie is the Watershed Project Coordinator for the South East Alberta Watershed Alliance (SEAWA). SEAWA is a Watershed Planning and Advisory Council (WPAC) established as part of the implementation of the provincial Water for Life Strategy. A central aspect of this work is to develop an Integrated Watershed Management Plan (IWMP). Maggie believes GVI will be a powerful tool to assist in this work.

The process for developing an IWMP is to first state the desired outcomes or goals for the watershed. These can relate to such things as watershed education, riparian health, water quality, and water quantity. It is necessary to undertake a State of the Watershed (SOW) assessment to develop a baseline for the measurement of change in the watershed and progress in achieving outcomes. This involves identifying a set of watershed indicators that will enable ongoing assessments of specific watershed parameters. Once the baseline is complete the IWMP can identify detailed targets and specific management actions necessary to achieve them.

Most SOW reports include indicators that relate to biological communities and to land use. Traditionally there has been limited data available for these indicators and most WPACs report huge data gaps in information on riparian ecosystems in particular. In the South Saskatchewan Watershed there are whole sub-watersheds that lack riparian information.

Some work has been done by Cows and Fish to map and classify riparian health, but this is difficult to extrapolate to an entire river reach. The Alberta Biodiversity Monitoring Institute can provide some additional information but data gaps remain.

Let's follow Maggie's example for the potential use of GVI in riparian land management.

In this example, SEAWA may set an outcome that states: *"existing riparian lands will be kept intact or restored to be ecologically functional."* To achieve this, it is necessary to know the existing area and condition of riparian lands; these become the riparian indicators.

Now that the outcome and indicators have been selected more specific targets can be identified, such as: *"no net loss of functioning riparian lands"*; *"restoration of degraded riparian lands"*; and, a longterm target of ensuring *"all riparian lands will be ranked as healthy and fair according to the Cows and Fish Riparian*

The ability of GVI to produce spatial data that can be incorporated into other GIS applications, such as SEAWA's SOW reporting tool, strengthens its accessibility and usability.

Health Assessment Guide." The planning team can now identify specific actions to achieve the targets. These may include taking steps to avoid negative impacts to riparian lands; the development of new riparian management policies; the implementation of best management practices; and, activities for the restoration of unhealthy riparian areas.

To complete all of this SEAWA will need two things. The first is a tool to delineate the extent of riparian lands. The second, is a tool that identifies land use in riparian areas and on adjacent lands. This will enable them to understand what is occurring on the landscape, to identify pressures on riparian lands, and help make decisions to avoid negative impacts. GVI provides this instantaneous time-stamp and the coarse delineation of the landscape and its existing uses.

Francois Blouin

By overlaying GVI polygons on a sub-watershed map it is possible to determine the extent of riparian areas and the extent of the human footprint, such as the number of stream crossings and the location of intensive land use that may be causing pressure on riparian areas. The GVI attributes and modifiers that describe a polygon can inform the development of baseline data, and reveal information such as soil characteristics, landscape features, and the presence of certain plant communities. GVI maps can also assist in subsequent ground-truthing and field work which is necessary to determine the health and function of the riparian area. SEAWA has a web-based, state of the watershed reporting tool which allows near real-time data to be incorporated. GVI could not only support the population of this dataset but it may also assist in determining what changes are taking place on the landscape over time.

Francois Blouin

A picture is worth a thousand words. The ability of GVI to produce spatial data that can be incorporated into other GIS applications, such as SEAWA's SOW reporting tool, strengthens its accessibility and usability. If these two tools can be married, SEAWA will be better able to identify and describe what is happening within the watershed. GIS allows the user to add and remove layers, and to tailor the map to the audience. The online SOW reporting tool coupled with GVI information could be a powerful combination in directing best management practices and watershed decisions. Currently though, SEAWA does not have access to GVI and staff haven't yet been trained in its use and interpretation. Because of the complexity of the GVI dataset information extraction is primarily in the hands of few experts, but it is Maggie's hope that training programs will soon be developed so that she and her colleagues can use GVI to its full potential.

SEAWA is leading the process of integrated watershed planning and bringing people together, but the plan belongs to its partners. It is a collaboration that seeks to provide integration, not only in the environment, but amongst the people at the table. Recommendations for watershed management are sent to the provincial government, but in the meantime city councilors, industry representatives, and other stakeholders are at the table and they recognize that some of the goals can be achieved without anyone telling them to do it. With GVI as a planning tool, these partners may better understand their watershed, make recommendations, and take action.

Maggie is looking forward to future conversations with the Prairie Conservation Forum and WPAC representatives to explore opportunities for using GVI in integrated watershed management.

Partially funded by Environment Canada

Environment Canada Environnement Canada

PRAIRIE CONSERVATION FORUM

You can make a difference.
Visit us at www.albertapcf.org