



Comprehending Swale Ecosystems: Research Synthesis and Analysis

The Swale Research Partnership comprises a large group of community organizations, agencies, and USask researchers. The primary mission of the Partnership is to share ideas about research gaps and needs for Saskatoon's Swales. To that end, a research project was initiated to better understand Saskatoon's Swale ecosystems, including analysis of potential impacts of new transportation systems and urban development. The findings of that research identify potential significant impacts of freeway siting and building future neighbourhoods within sensitive Swales that extend beyond municipal limits.

A collaborative approach including municipal, provincial and federal governments, and regional experts is recommended to protect the Swale wetlands, native temperate grasslands, and the habitat they provide to a wide biodiversity of plants and animals.

Native Temperate Grasslands

Native temperate grasslands are the most endangered ecosystem on the planet, with less than 10% remaining and roughly half that amount under protection. Saskatoon's northeast Swales (labelled the Northeast and Small Swales) represent this endangered prairie landscape in Saskatchewan. They extend through the jurisdictions of the City of Saskatoon, Rural Municipalities of Corman Park and Aberdeen, and the Meewasin Valley Authority, calling for a regional approach to conservation. Intact over more than 10,000 years, the Swale ecosystems provide important ecological services and public value, including high biodiversity, storm water management, significant Indigenous and non-Indigenous cultural, historical, and environmental sites of interest to citizens and visitors, carbon storage to reduce greenhouse gases, education and research opportunities, active lifestyle opportunities, and property value uplift in nearby neighbourhoods.

The Swales, as a functioning natural area, are under threat with planned neighbourhoods (e.g., University Heights 3) and roadways (e.g., McOrmond Drive/Chief Mistawasis Bridge, proposed Saskatoon Freeway) pressing tightly against, on top of, or cutting through the habitat, water pathways, and movement corridors of the species that give life to this landscape.

The Swale Research Partnership supported development of a report to synthesize existing research on the Swales, authored by Warrick Baijius (graduate student in the USask Department of Geography and Planning) and funded by the Global Water Futures programme. The *Comprehending Swale Ecosystems* report is organized as follows:

1. **Media Scan** of 45 articles addressing the topic of the Swales;
2. **Document Review** summarizing key findings from 84 documents addressing the Swales over decades; and
3. **Research Synthesis** identifying key findings spanning the 84 documents reviewed, and highlighting critical knowledge gaps relating to water, natural area screening, local and regional ecology, and planning and governance.

The document makes **13 recommendations** pertaining to the Swales' local and regional ecology, prairie water cycles, projected impacts of further roadway development, and planning and governance. Overall it is clear that a concerted effort must be made – coordinated regionally and with the Province – to significantly improve the level of stewardship applied to conserving the Swale ecosystems. As succinctly stated in one Meewasin Valley Authority document: "Biodiversity is a measure of health and value. Like the South Saskatchewan River without water, the Swale without biodiversity is no longer an amenity."