

Restoring and Managing Natural Infrastructure: Tools for a Resilient Prairie Landscape



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Meewasin 

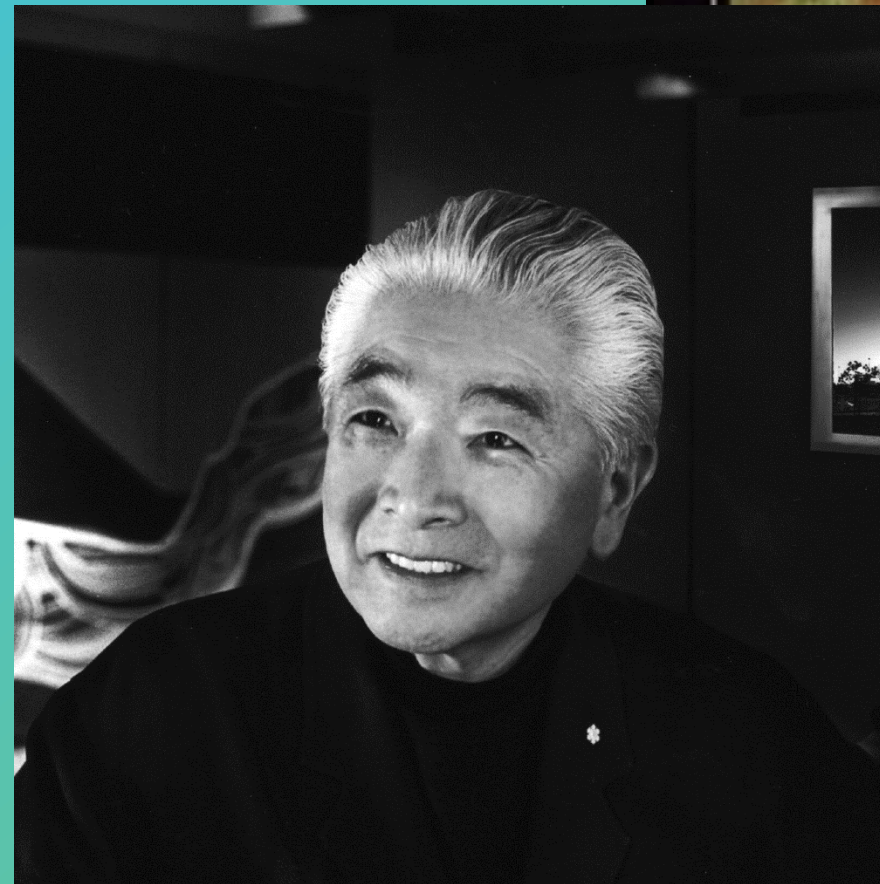
Participating Parties

Saskatchewan!

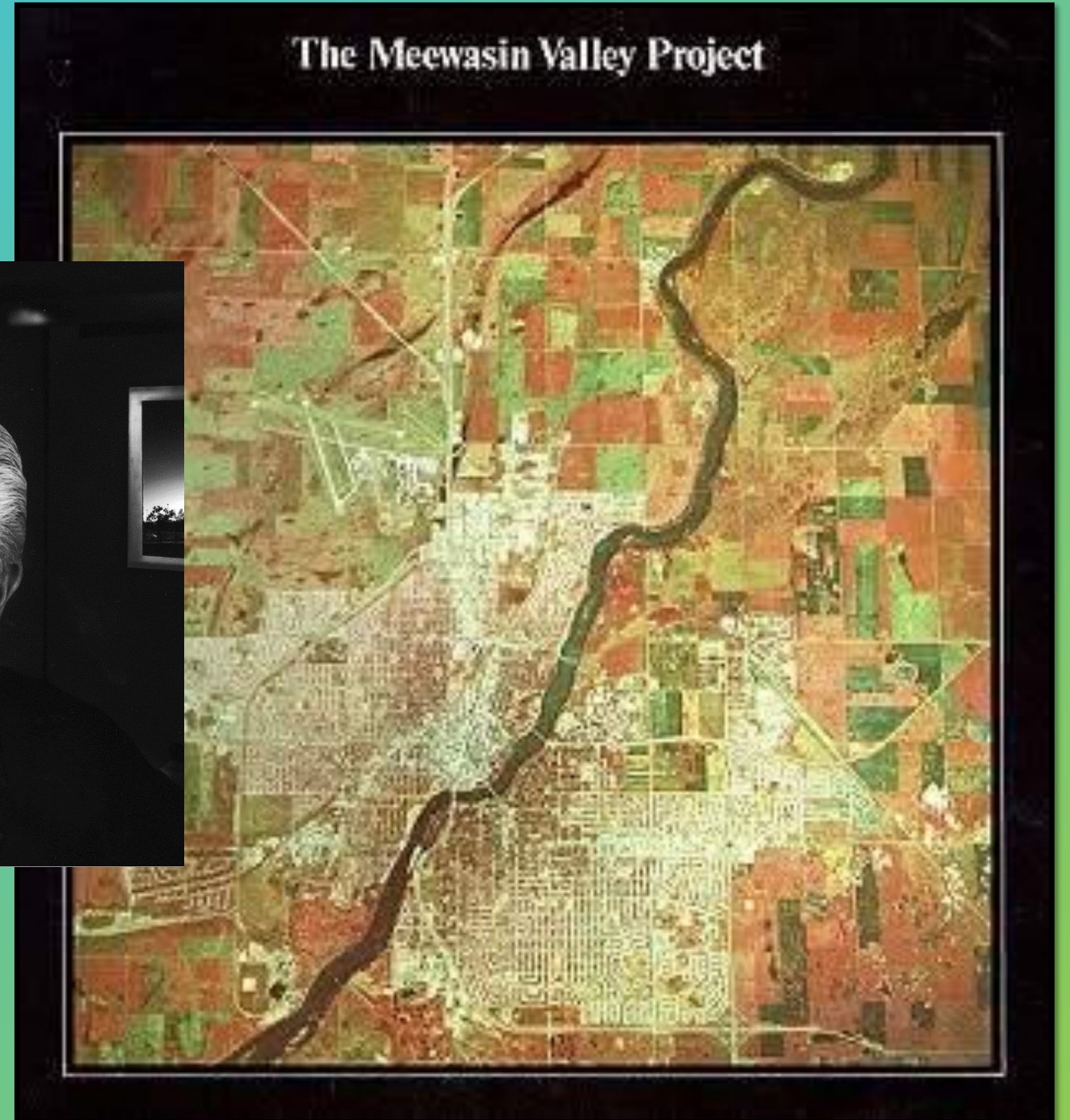
 *City of*
Saskatoon

 **UNIVERSITY OF**
SASKATCHEWAN

100 Year Plan

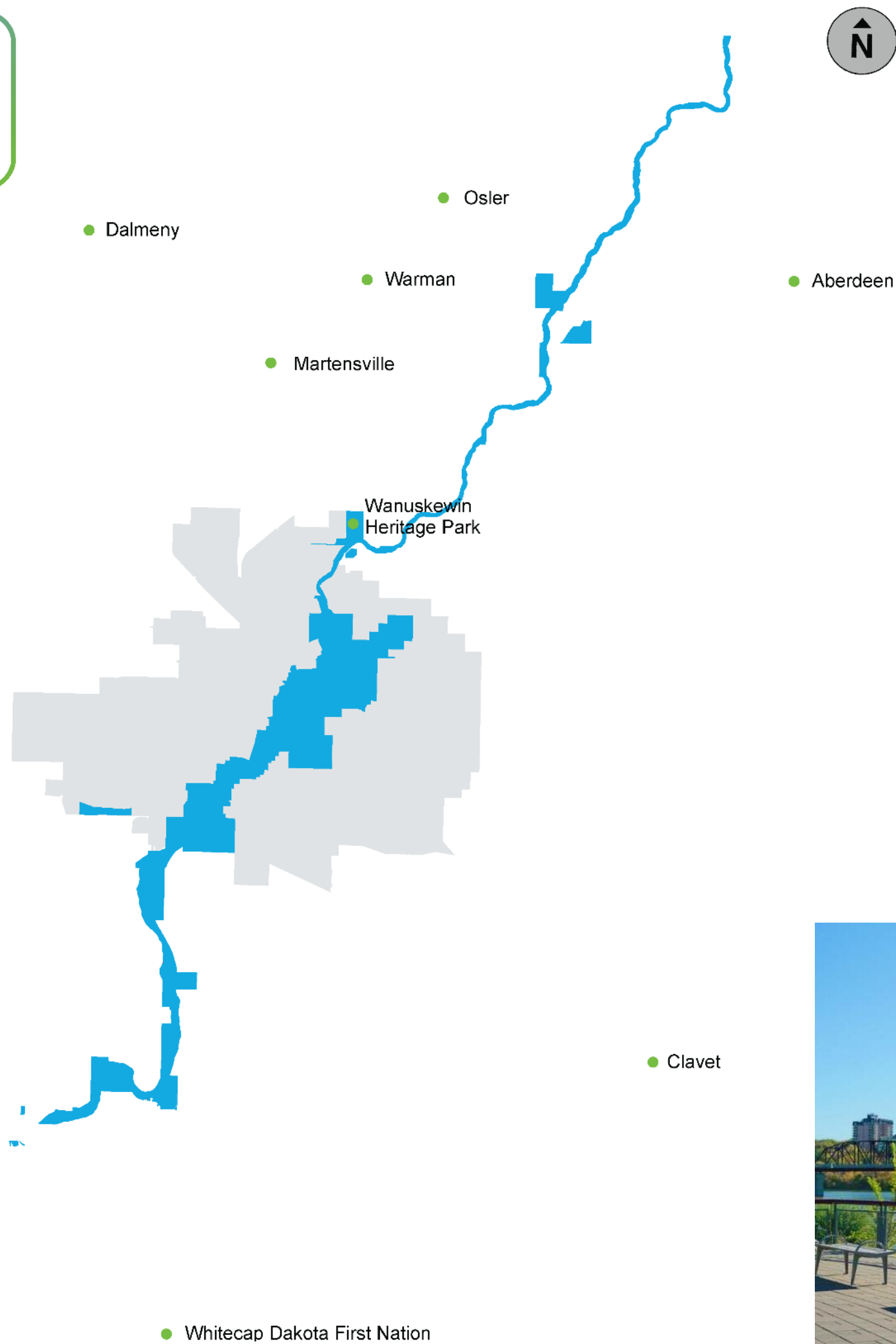


Raymond Moriyama



Legend

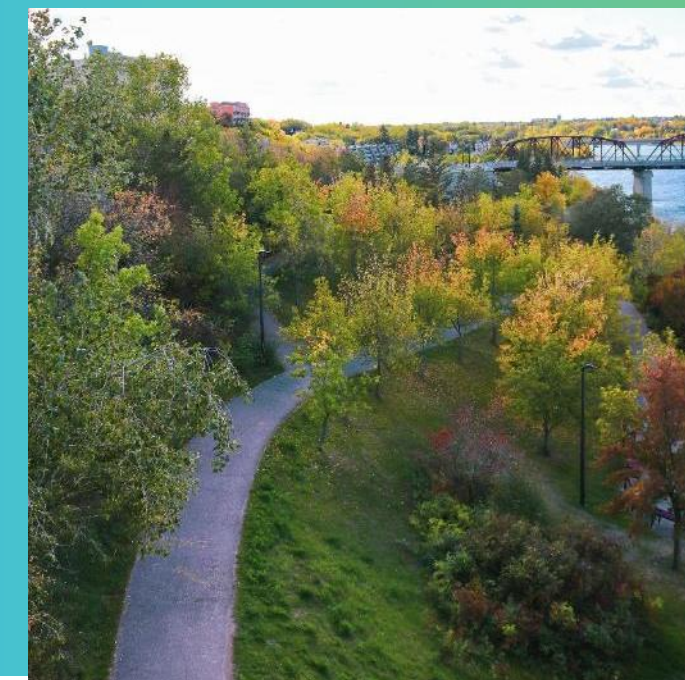
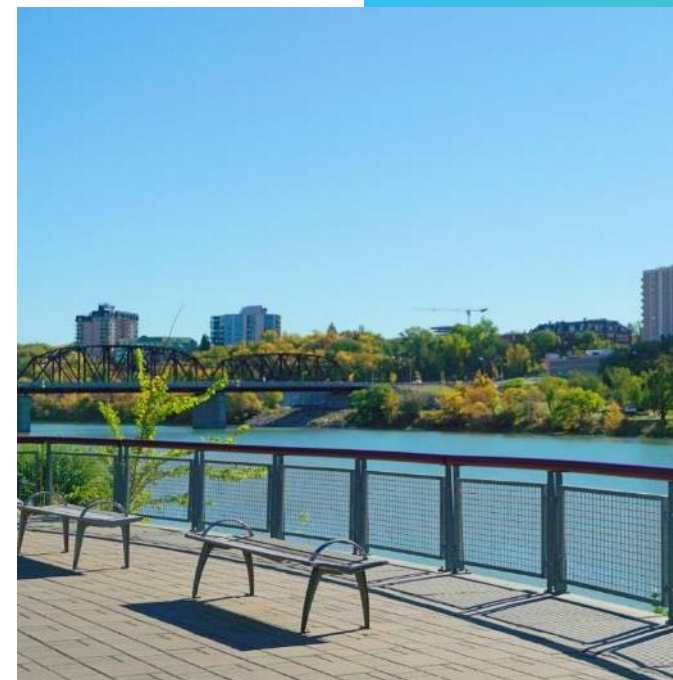
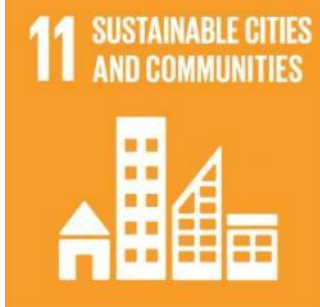
- Meewasin Jurisdiction
- City of Saskatoon



Jurisdiction

The Meewasin Jurisdiction runs 90 km along the South Saskatchewan and covers 6,700 ha

Meewasin is the steward of **Canada's largest urban conservation zone.**



Meewasin's Mission and Mandate

The Meewasin Valley Authority exists to ensure a **healthy and vibrant** river valley, with a **balance between human use and conservation**



Conserve



Develop



Educate

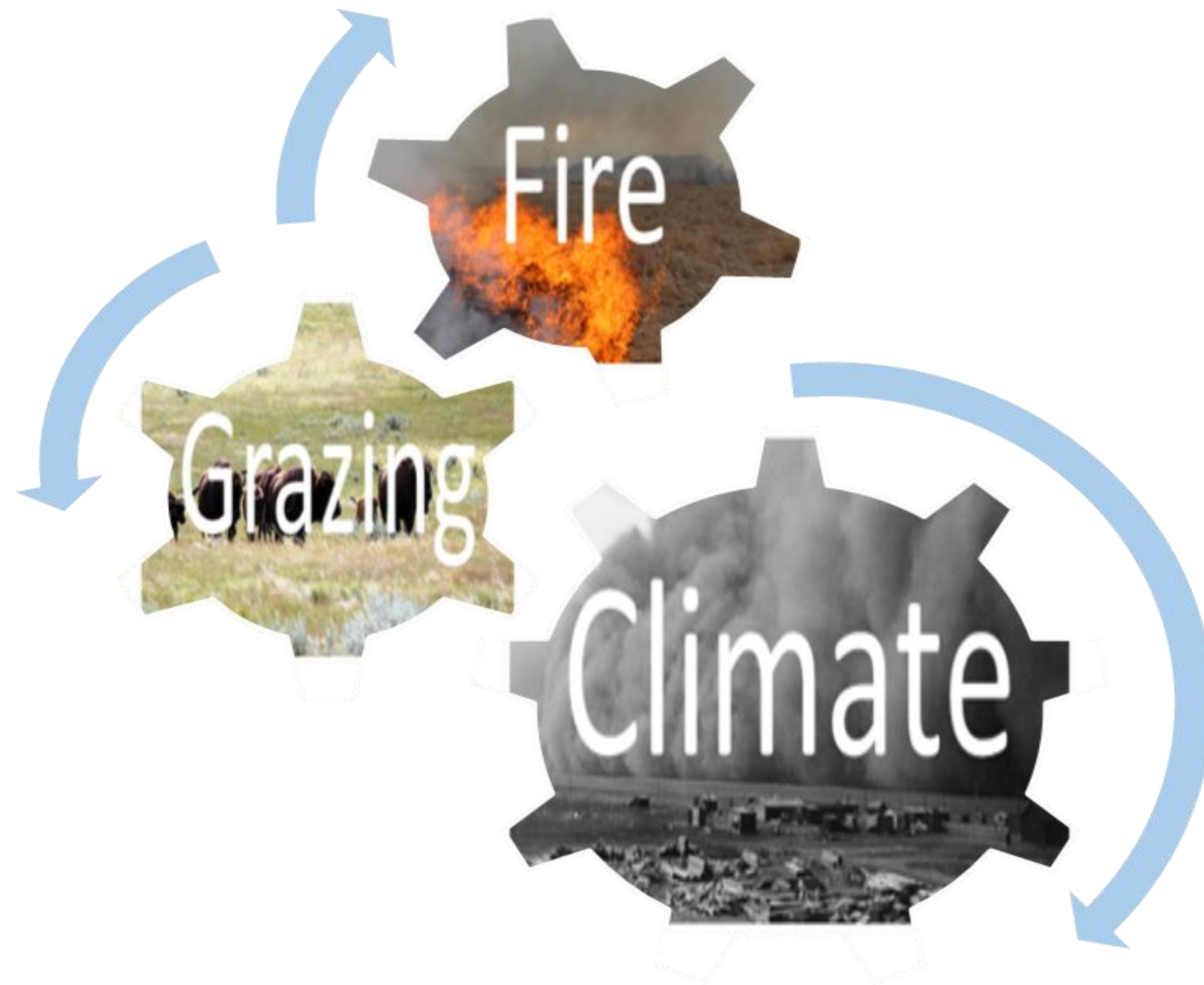
Natural Infrastructure

- Grasslands, riparian areas, wetlands, and swales are critical forms of natural infrastructure.
- They provide carbon storage, biodiversity, stormwater retention, and resilience to extreme weather.
- These systems must be **actively managed** to deliver long-term climate and community benefits

Did You Know: Native Grasslands are one of the most imperiled ecosystems in the world and one of our greatest carbon captures. Less than 14% of grasslands remain in Saskatchewan



Prairie Grassland Natural Ecosystem Processes



Restoration as the Foundation

Restoration

- The process of assisting the recovery of an ecosystem that has been degraded, damaged, or destroyed.
- The goal is to return the ecosystem to a stable, healthy, and functioning state that reflects its natural structure, composition, and processes.



Willow Staking Along South Saskatchewan River

Restoration as the Foundation

Restoration often includes:

- Reintroducing native plant species using locally adapted seed
- Re-establishing ecological processes such as fire, grazing, and natural hydrology
- Removing or controlling invasive species
- Reconstructing habitat features for wildlife and pollinators
- Engaging in long-term monitoring and management to ensure sustainability



Invasive Species

Invasive Species:

- Non-native species that outcompete native plants and disrupt ecosystems.
- Reduce biodiversity, alters fire cycle, causes soil degradation, reduces hydrological functions, and undermines restoration efforts

Integrated invasive species management – may include herbicide, mowing, hand-removal prescribed fire, grazing, biocontrol agents

Invasive species require **long-term, multi-tool management – approach** - there are no quick fixes.



Baby's Breathe Removal

Targeted Grazing

Targeted grazing is using cattle, goats, or sheep to manage vegetation in a controlled, goal-oriented way.

Grazing can:

- Reduce invasive species
- Reduce thatch buildup and wildfire risk
- Stimulate native plant growth
- Reduce tree and shrub cover
- Enhance habitat diversity for birds and pollinators

Grazing mimics natural disturbance and supports both conservation and agricultural outcomes.



Northeast Swale Sheep Targeted Grazing

Prescribed Fire

Fire is a natural disturbance in prairie ecosystems.

Prescribed Fires can:

- Reset plant communities,
- recycle nutrients,
- maintain open habitat structure.
- reduce invasive species and woody encroachment
- Promote native grasses and forb growth
- Improve habitat for pollinators, ground-nesting birds, and grazing species
- Enhance seed germination and nutrient cycling
- Reduce wildfire risk



Prescribed Fire at Beaver Creek Conservation Area



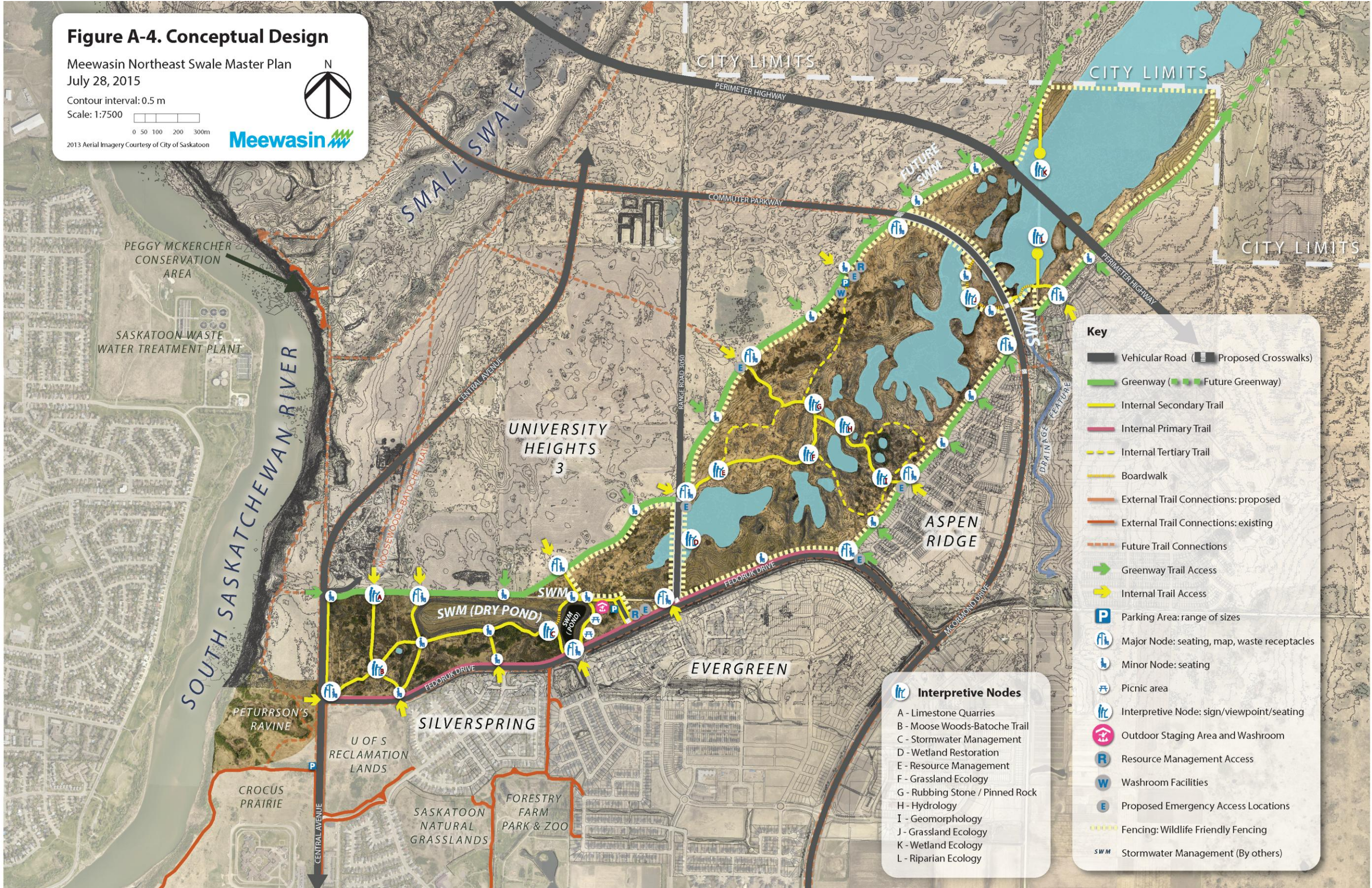


Northeast Swale



The Northeast Swale contains considerable areas of **native grasslands and wetland complexes**, several species at risk, and over **200 hundred bird species**.

Northeast Swale



Meewasin Northeast Swale Master Plan

November 6, 2015

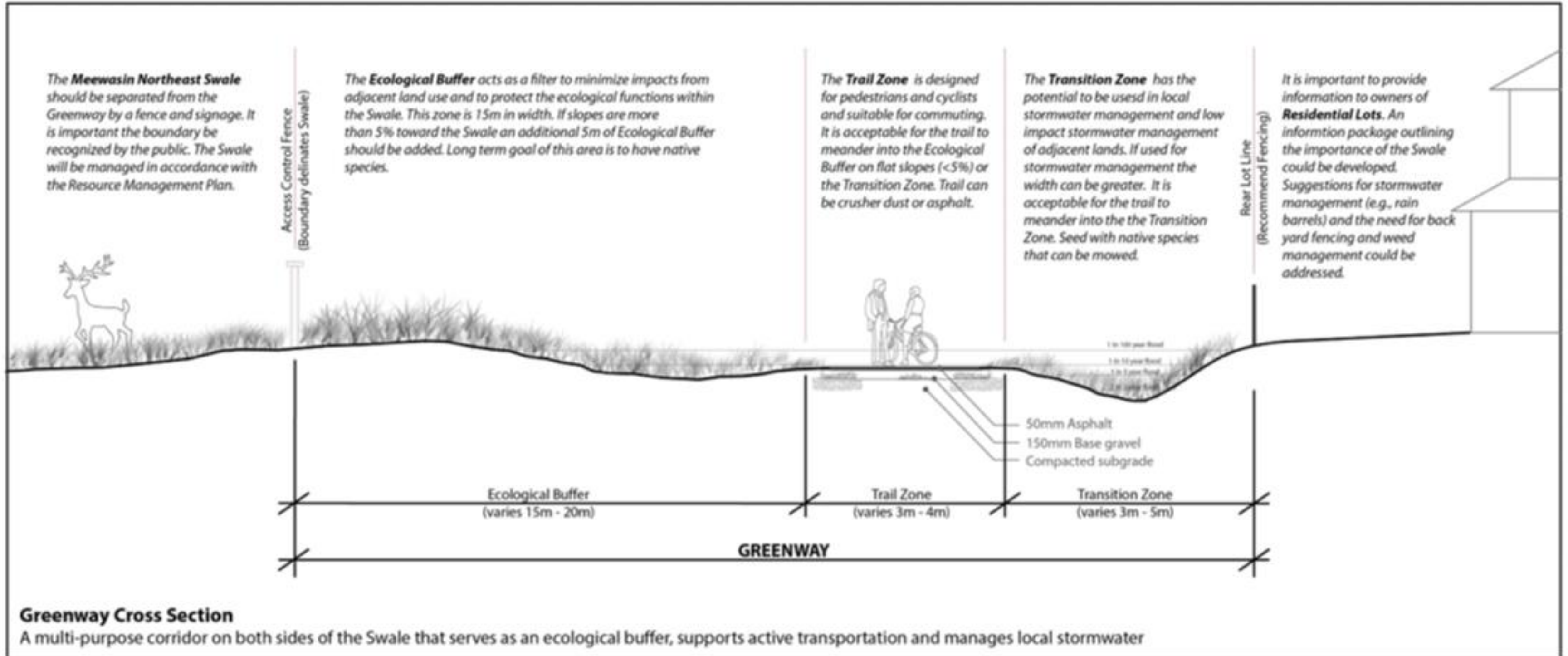


A prized natural feature within Saskatoon's urban landscape: a refuge for wildlife and people alike, where disturbance mimics natural patterns, biodiversity is high, native species flourish and residents or visitors of Saskatoon can learn from and enjoy wilderness right outside their own backyard.

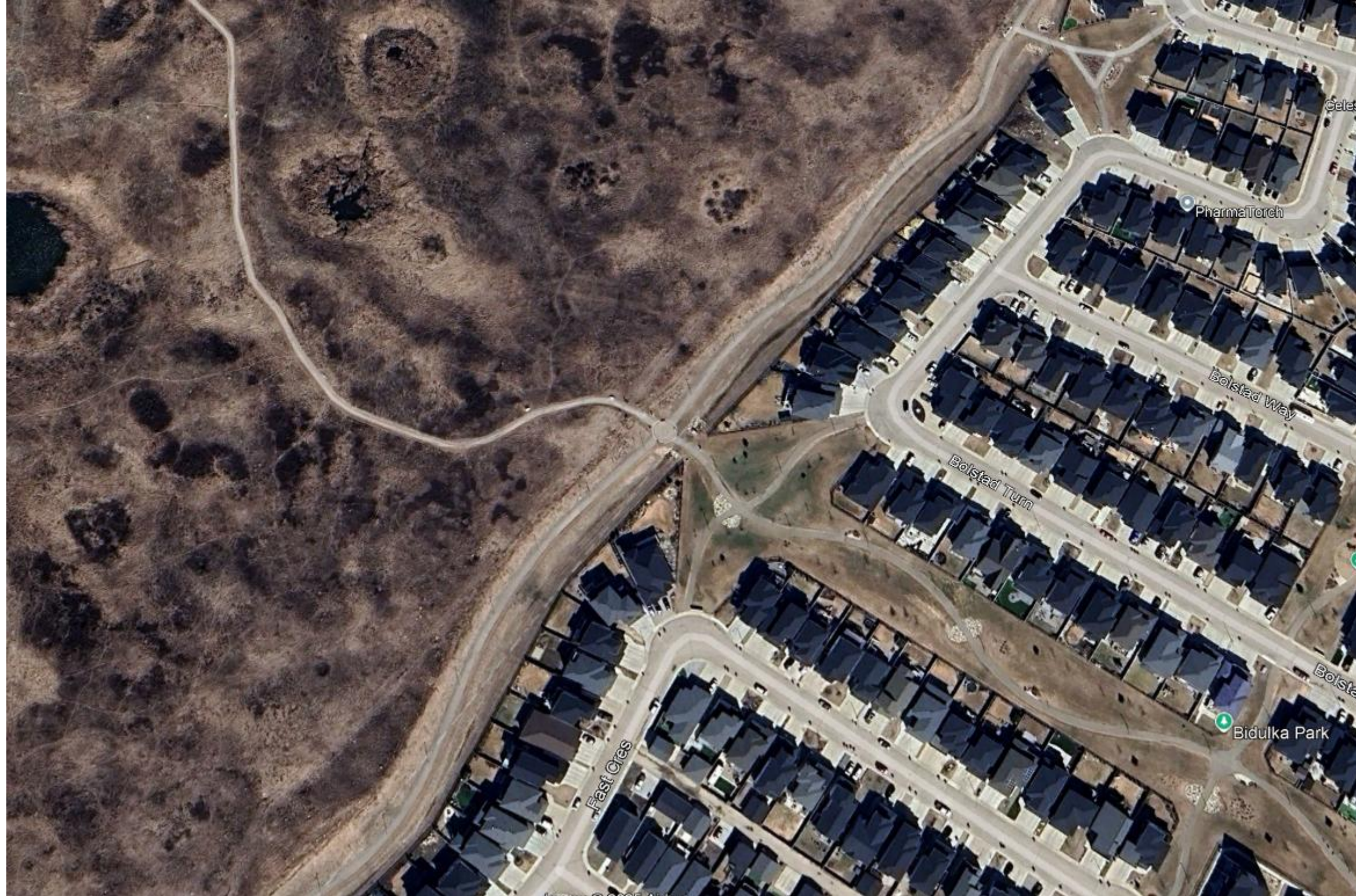
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Northeast Swale - Greenway



Northeast Swale - Greenway



Northeast Swale Greenway – April 2025

Northeast Swale - Restoration



Northeast Swale – Fedoruk Drive Restoration – August 2024

Northeast Swale – Floating Islands

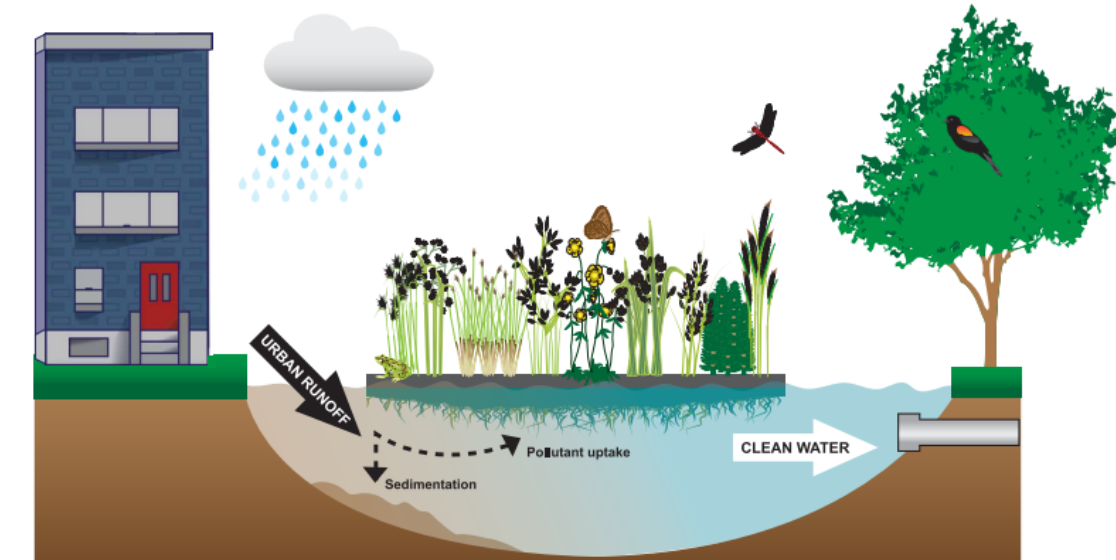
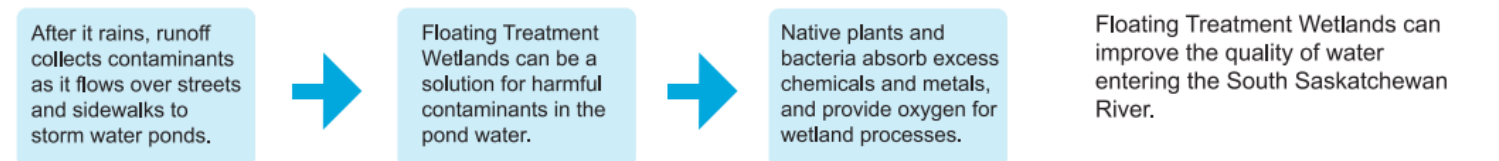
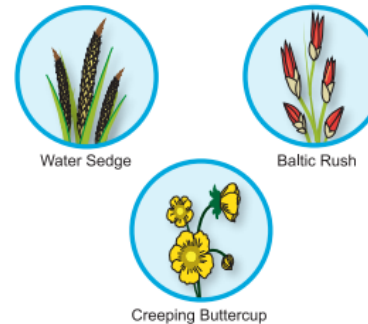


Floating Treatment Wetland

Welcome to Saskatoon's first floating wetland designed to naturally filter pollutants and improve storm water pond quality.

Floating Treatment Wetlands create a terrestrial habitat in aquatic environments and imitate how natural wetlands purify water. Native aquatic plant roots below the water line provide habitat for microscopic bacteria that do the work of cleansing the water.

These Floating Treatment Wetlands were planted with locally sourced native aquatic plant species including sedges, rushes, and aquatic flowering plants.



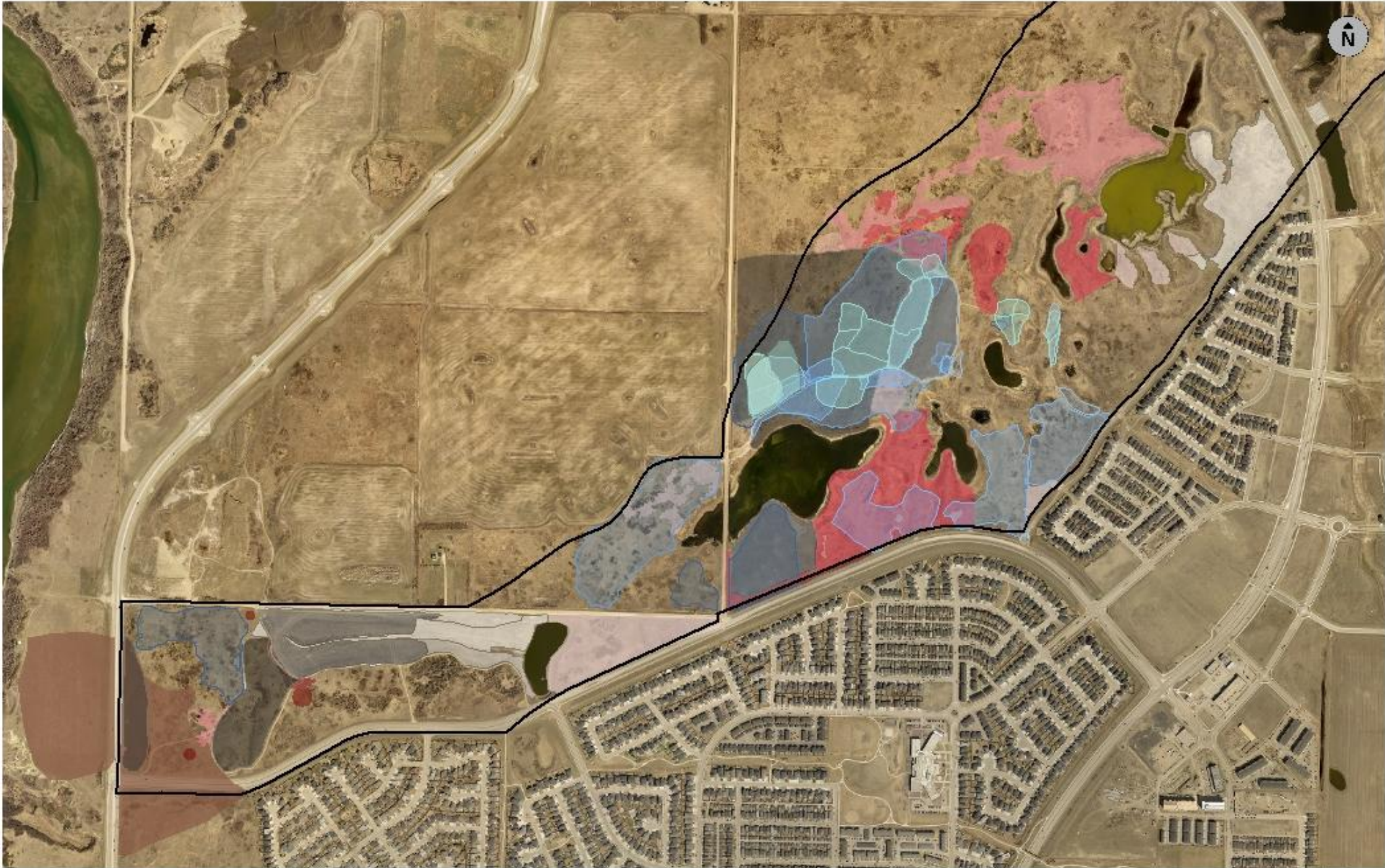
Did you know?

Most runoff flows through the City's storm water system of catch basins and pipes directly into our river.

Please enjoy nature watching from a safe distance and do your best to not disturb the animals.



Northeast Swale – Integrating Prescribed Fire and Targeted Grazing



Northeast Swale Prescribed Fire & Targeted Conservation Grazing History

Legend

Site Boundary

Prescribed Fire

2008	2013	2020
2009	2014	2021
2010	2016	2022
2011	2017	2023

Wildfire

2008
2020

Targeted Conservation Grazing

2013	2017	2021
2014	2018	2022
2015	2020	2023

October 22, 2024
Projection: NAD 1983 CSRS UTM Zone 13N
Data Sources: City of Saskatoon, Meewasin Valley Authority, Saskatchewan Geospatial Imagery Collaborative
Disclaimer: This map is for illustrative purposes only. Do not rely on it as being a precise indicator of land ownership, feature location, nor as a guide to navigation. This map may contain omissions or errors.
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Meewasin



CANADIAN PRAIRIES PRESCRIBED FIRE EXCHANGE



Canadian Prairies Prescribed Fire Training Exchange (Trex)
October 2024



Canadian Prairies
**PRESCRIBED
FIRE EXCHANGE**



**Help Conduct
Fires**



Training

www.grasslandfire.ca



**Sharing Fire
Science**

STEWARDSHIP SUSTAINS RESILIENCE

- Restoration is just the beginning—management keeps nature functional.
- Tools like prescribed fire, targeted grazing, invasive species control, and ecological monitoring sustain prairie ecosystems.
- Integrated projects like the Northeast Swale show how natural infrastructure can be part of urban design.
- Long-term success depends on partnerships, policy alignment, and investment in stewardship.
- Treat nature as infrastructure—planned, conserved, and maintained for future generations.



Saskatoon Natural Grasslands
European Buckthorn Removal - 2023

Thank you!



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