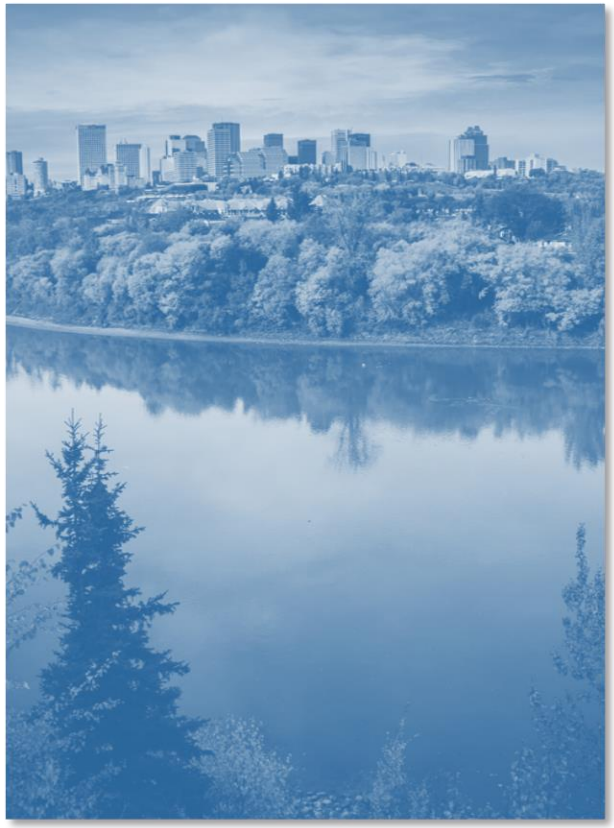
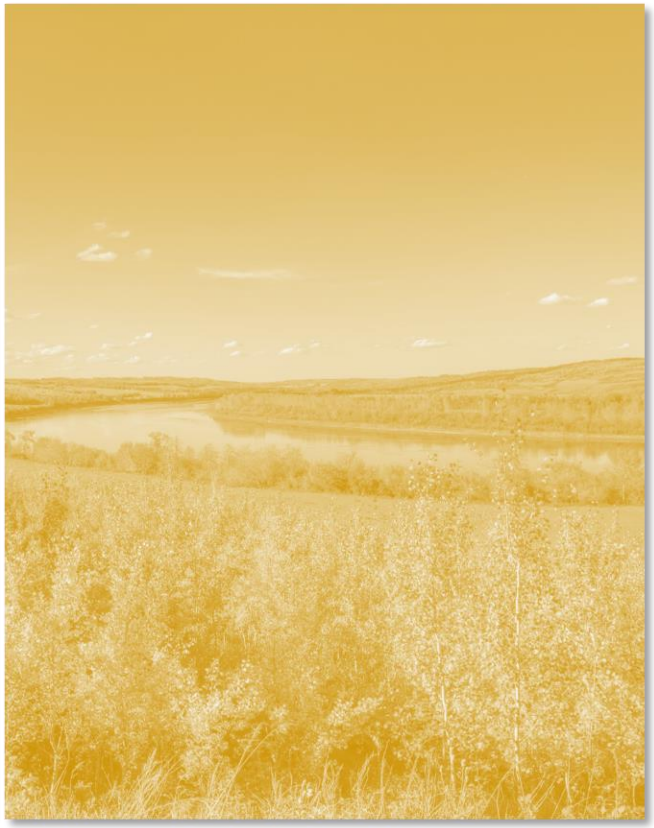
Sturgeon River Watershed Alliance

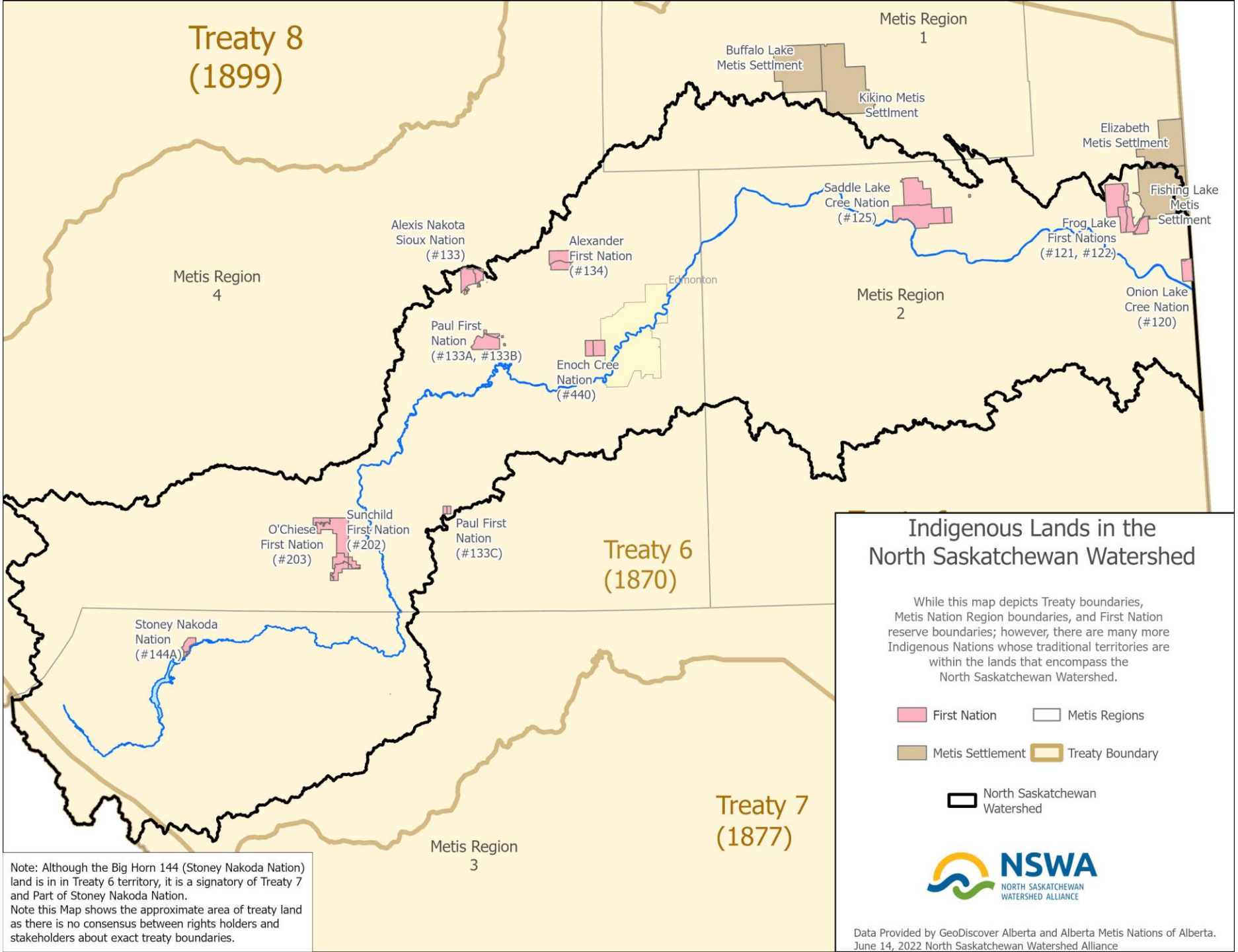
NSWA
NORTH SASKATCHEWAN WATERSHED ALLIANCE

2022 Update

Kelsie Norton | LILSA AGM | August 20, 2021







Note: Although the Big Horn 144 (Stoney Nakoda Nation) land is in in Treaty 6 territory, it is a signatory of Treaty 7 and Part of Stoney Nakoda Nation.
Note this Map shows the approximate area of treaty land as there is no consensus between rights holders and stakeholders about exact treaty boundaries.

Indigenous Lands in the North Saskatchewan Watershed

While this map depicts Treaty boundaries, Metis Nation Region boundaries, and First Nation reserve boundaries; however, there are many more Indigenous Nations whose traditional territories are within the lands that encompass the North Saskatchewan Watershed.

First Nation

Metis Regions

Metis Settlement

Treaty Boundary

North Saskatchewan Watershed

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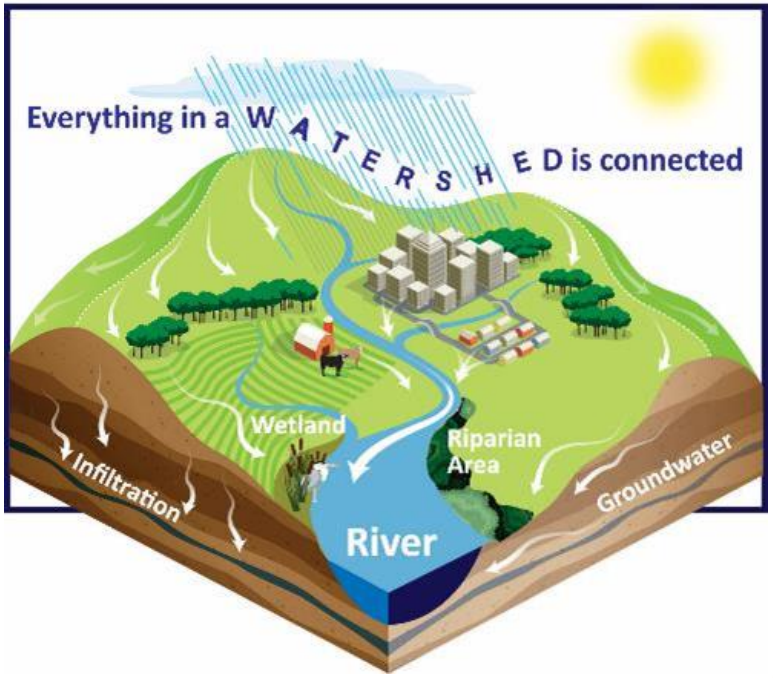
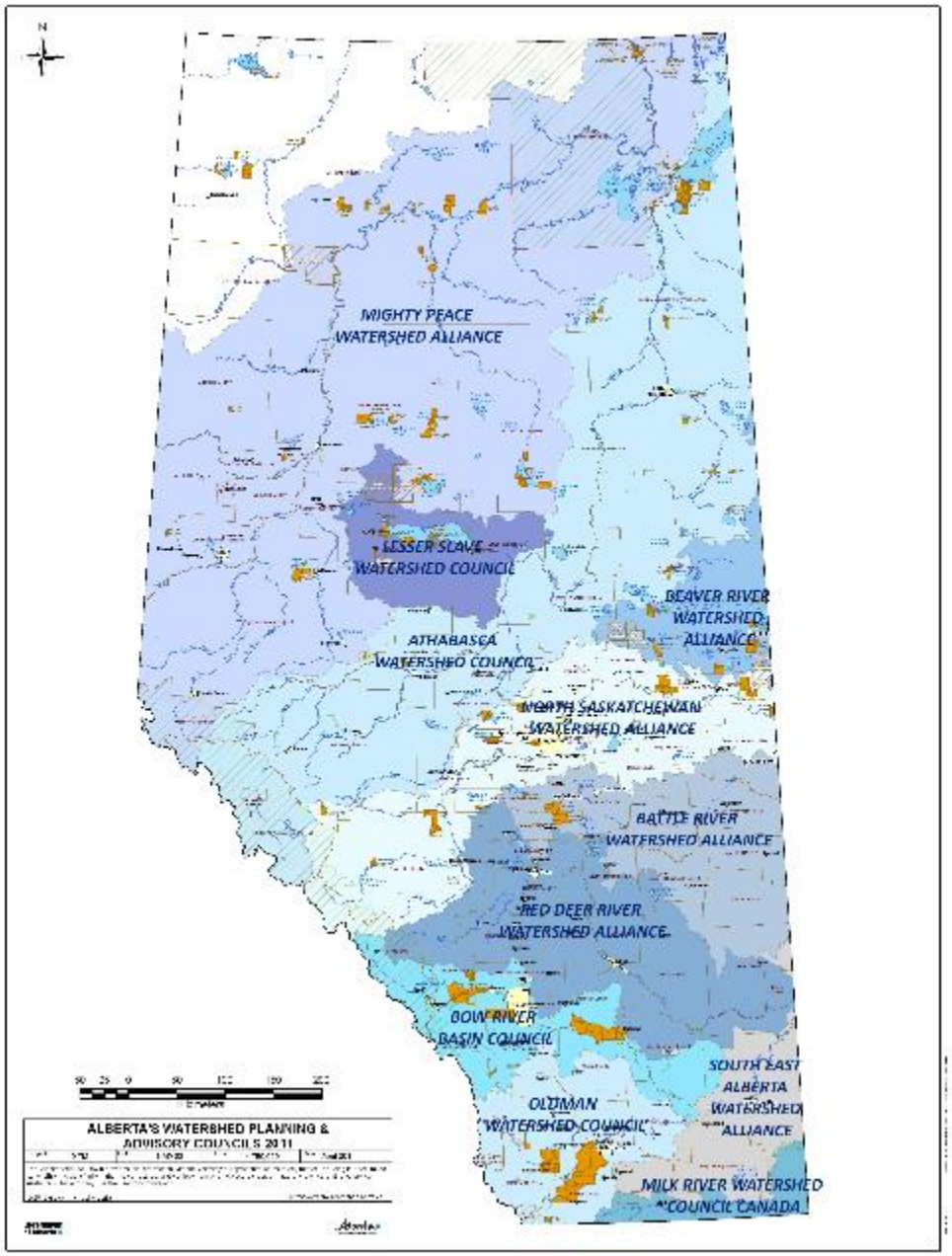
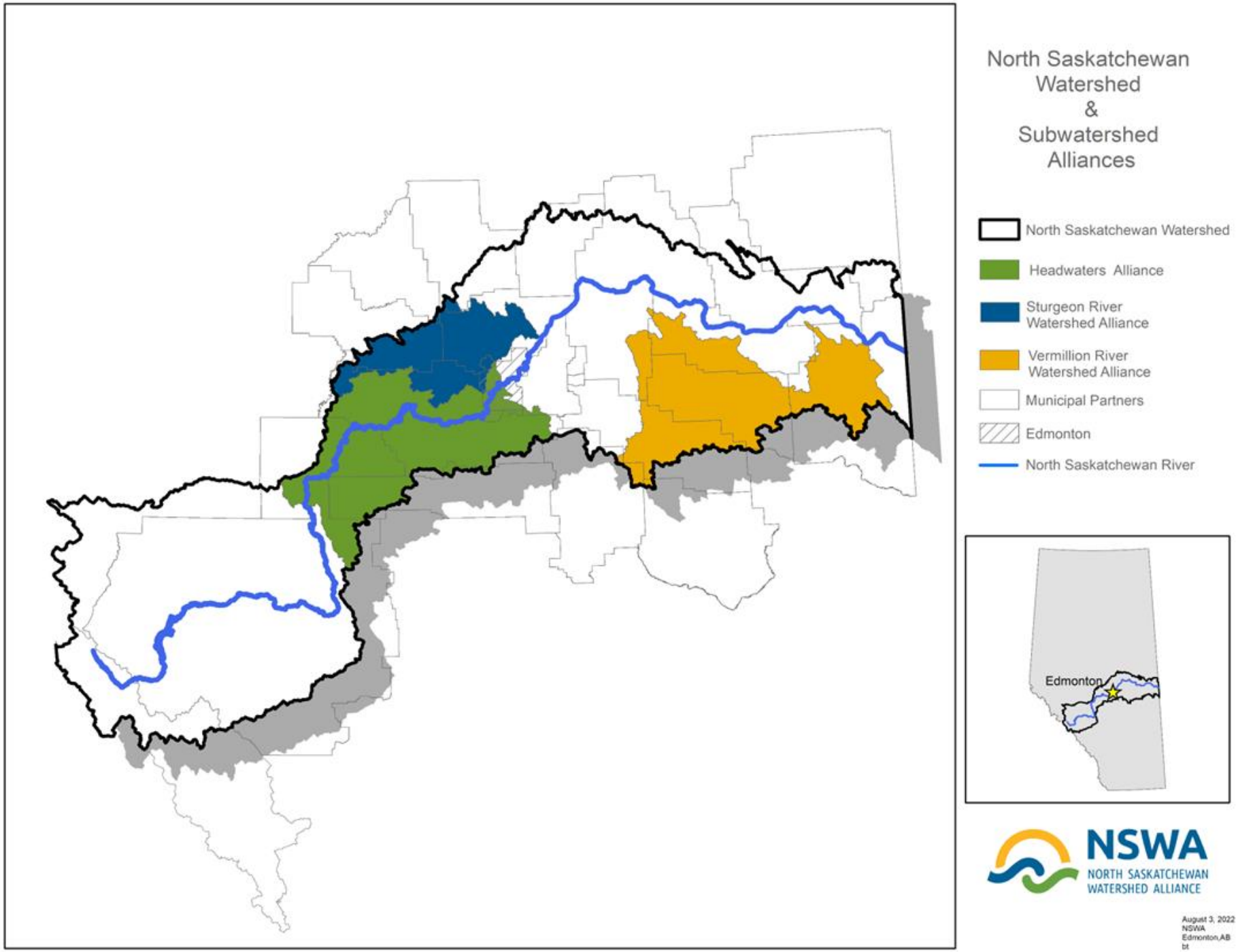
Data Provided by GeoDiscover Alberta and Alberta Metis Nations of Alberta.
June 14, 2022 North Saskatchewan Watershed Alliance

Watershed


Everything in a WATERSHED is connected
Wetland
Riparian Area
Infiltration
River
Groundwater


N
MIGHTY PEACE WATERSHED ALLIANCE
LESSER SLAVE WATERSHED COUNCIL
BEAVER RIVER WATERSHED ALLIANCE
ATHABASCA WATERSHED COUNCIL
NORTH SASKATCHEWAN WATERSHED ALLIANCE
BATTLE RIVER WATERSHED ALLIANCE
RED DEER RIVER WATERSHED ALLIANCE
BOW RIVER BASIN COUNCIL
SOUTH EAST ALBERTA WATERSHED ALLIANCE
OLDMAN WATERSHED COUNCIL
MILK RIVER WATERSHED COUNCIL CANADA
ALBERTA'S WATERSHED PLANNING & ADVISORY COUNCILS 2011


North Saskatchewan Watershed & Subwatershed Alliances
North Saskatchewan Watershed
Headwaters Alliance
Sturgeon River Watershed Alliance
Vermillion River Watershed Alliance
Municipal Partners
Edmonton
North Saskatchewan River
Edmonton
NSWA
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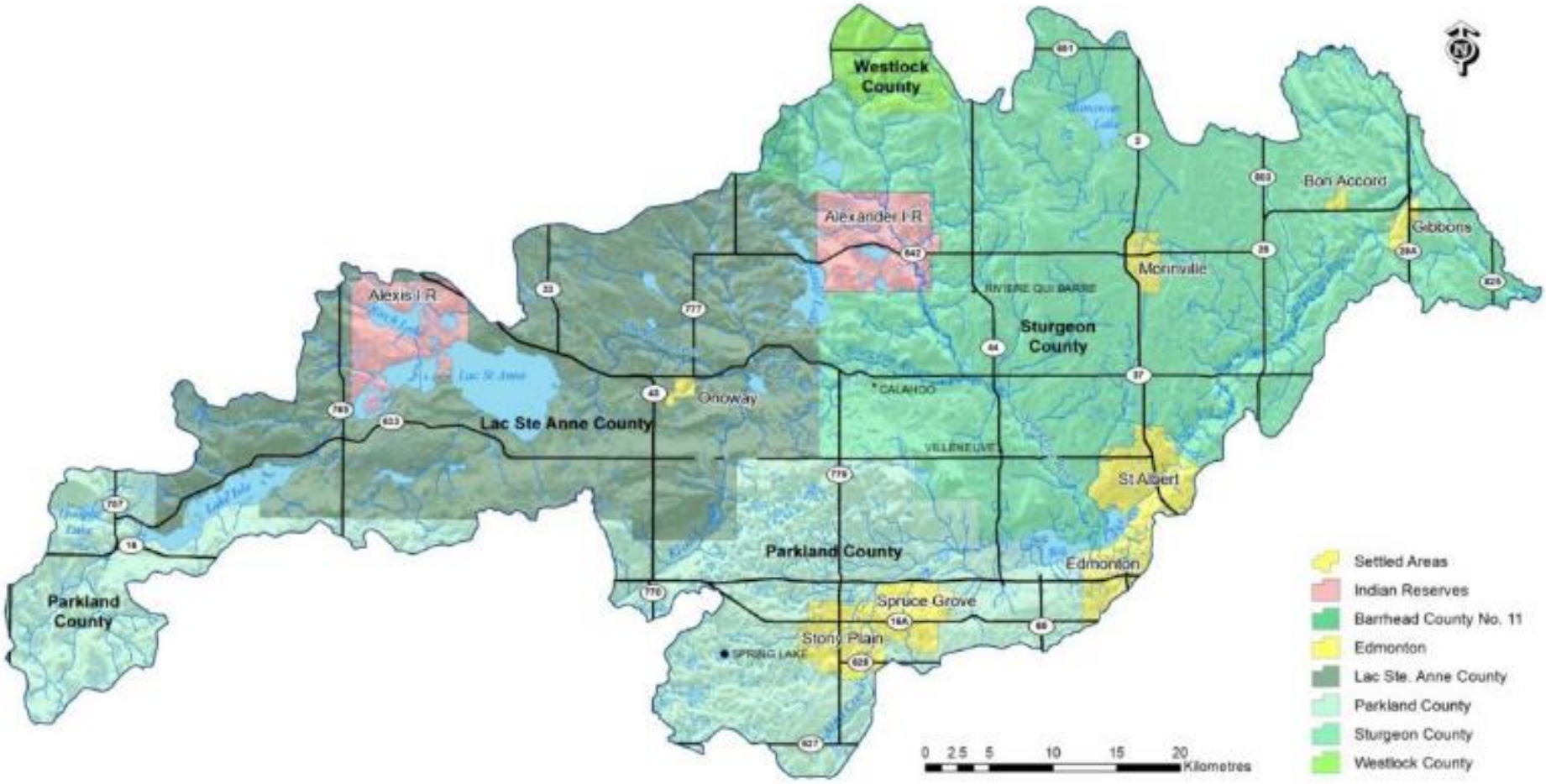
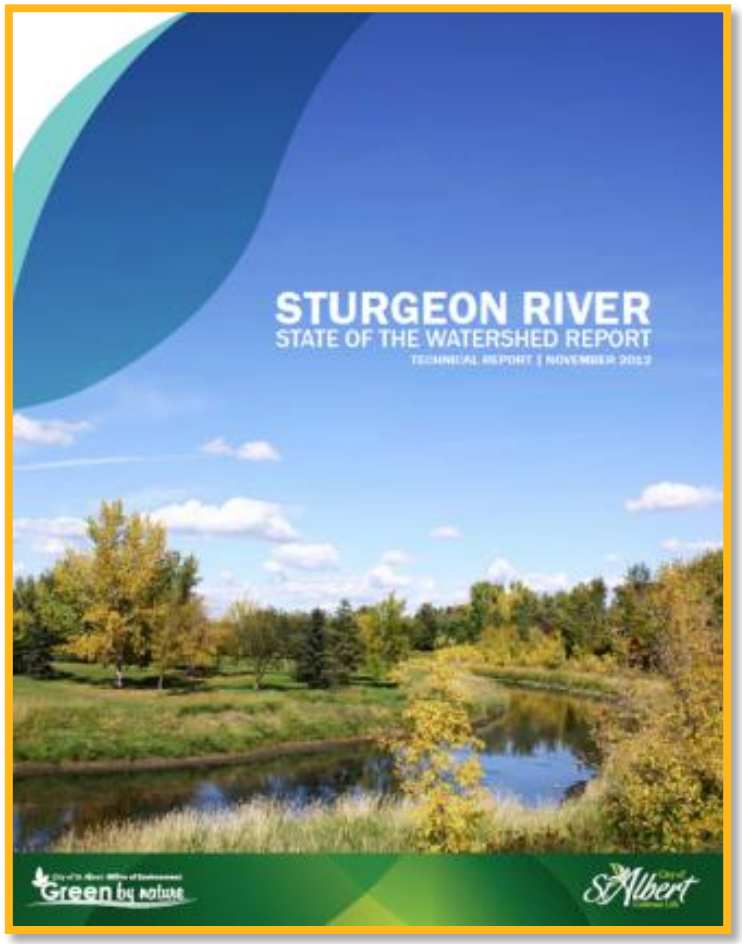
August 3, 2022
NSWA
Edmonton,AB
bt

Sturgeon River Watershed

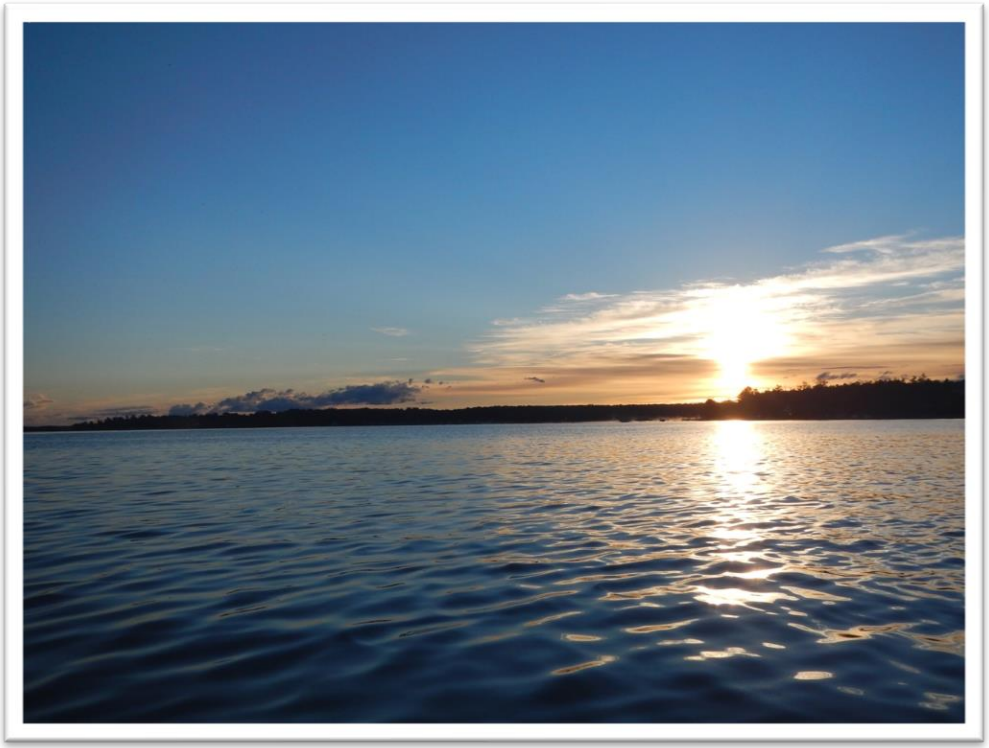


State of the Watershed



- Completed in 2012 by the City of St. Albert.
- Assessed overall ecological health using 15 indicators and gave an overall grade of ***FAIR.***
    - Establish a municipally led watershed group
    - Fill information gaps by completing technical studies
    - Develop an Integrated Watershed Management Plan

Information Gaps

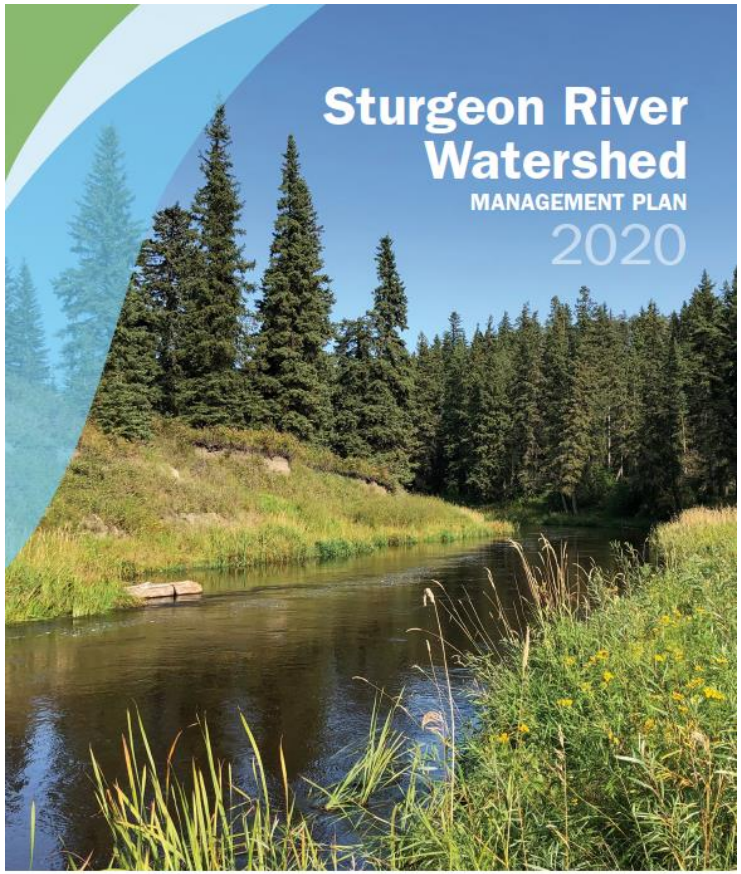


- Water Quantity
- Groundwater
- Water Quality
- Aquatic Health
- Riparian Areas
- Land Planning Tools

Challenges

- Rapid residential expansion
- Agricultural intensification
- Loss of natural environments
- Fluctuating water levels
- High nutrient run-off
- Invasive species

Watershed Management Plan



- ✓ Watershed approach
- ✓ Clear goals and performance measures
- ✓ Voluntary alignment of policies and plans
- ✓ Coordinates intermunicipal collaboration
- ✓ Promotes local and regional stewardship
- ✓ Encourages work to address knowledge gaps

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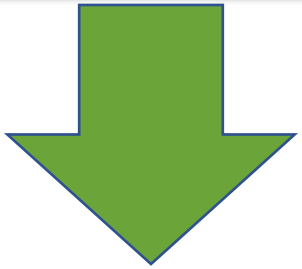
SRWA

Six Outcomes

1. Align Policies and Plans
2. Safe, Secure Drinking Water Supplies
3. Healthy Aquatic Ecosystems
4. Reliable Water Supplies
5. Wise Land Use
6. Local and Regional Initiatives

Plan Implementation



- ✓ Watershed Management Plan outlines outcomes to be addressed over 10 year timeframe
- ✓ Work will be prioritized by Steering and Technical Committees based on importance and timeliness of actions and resource availability.

Alberta Community Partnership **grant of $200,000**

(2020 – 2023) addressing priority short term actions

Priorities and Next Steps 2021 - 2023

- Riparian and Wetland Conservation and Restoration Strategies
- Water Quality/Aquatic Ecosystem Monitoring Program
- Watershed Planning Alignment and Tools
  - (flood risk areas, riparian setbacks, environmentally sensitive areas, overlay maps)
- Communications and Engagement
  - (Educational forums, workshops, information resources)

Lake Isle + Lac Ste. Anne State of the Watershed Report

Isle Lake and Lac Ste. Anne State of the Watershed Report

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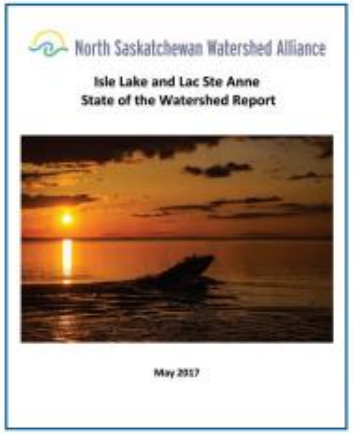
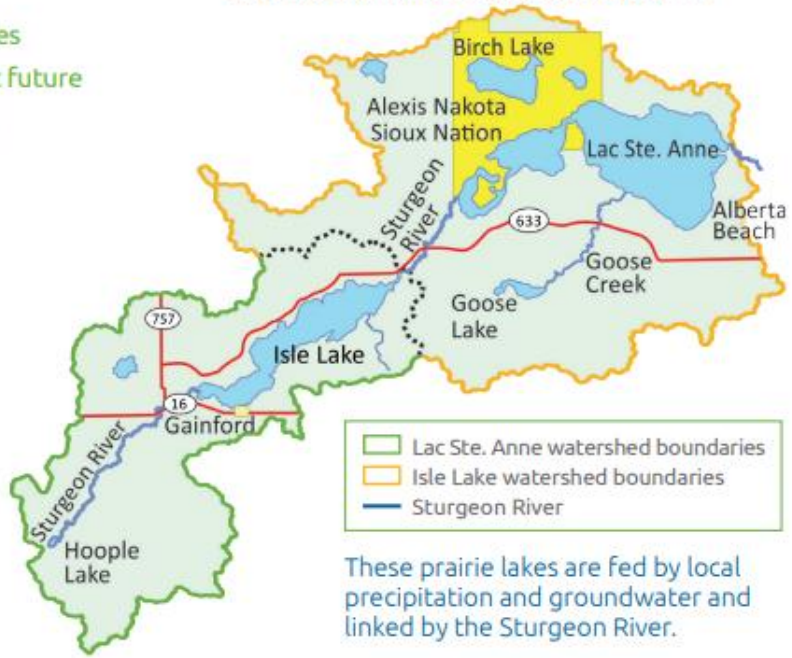
Purpose and Scope of Report:

To characterize the environmental state of the lakes based on available information in order to support future watershed planning and initiatives. This included:



- Local history
- Provincial and municipal government policies
- Technical information
- Environmental trends
- Exsiting data gaps
- Watershed management recommendations

Isle Lake and Lac Ste. Anne Watersheds



These prairie lakes are fed by local precipitation and groundwater and linked by the Sturgeon River.

2017

Lake Health Metrics

Areas of High Concern for Both Lakes

Watershed factors

Land Cover altered 25-75% from its natural state

Water Quality

High nutrients = lack of oxygen and algae blooms

Shoreline factors

Shoreline is 25-75% developed

Areas of Moderate Concern for Both Lakes

Water Quality

Fish kills due to low oxygen levels

Watershed factors

Water quality of lake tributaries

Areas of High Concern for Isle Lake only

Water Quality

High phosphorus levels

Shape, Size & Hydrology

Shallow water levels

Suggested Future Initiatives

Educate public about lake issues & stewardship

Encourage participation in stewardship programs

Monitor lake levels in real-time

Monitor lake water quality

Limit use of fertilizers & pesticides near lakes

Update septic systems to prevent contamination

Evaluate & manage road salt use

Encourage shoreline naturalization

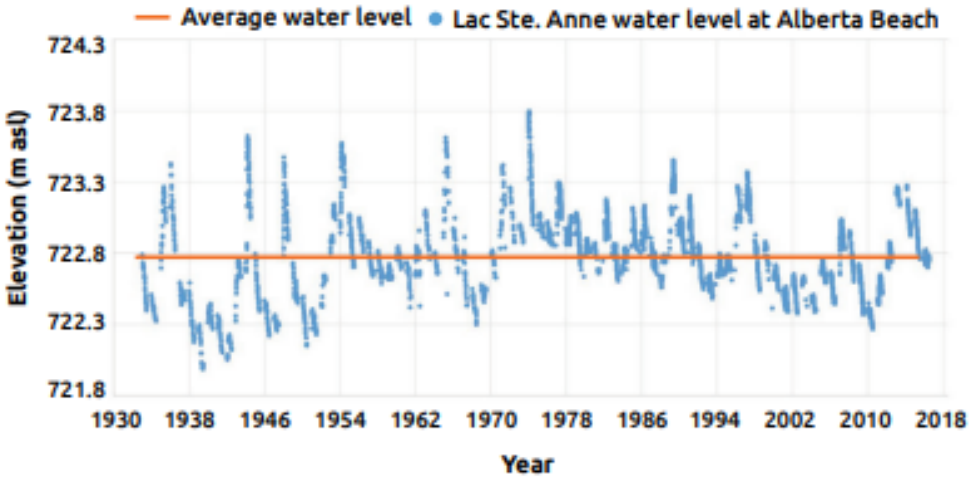
Monitor for invasive mussels & Flowering Rush

Current Efforts

SRWA Water Quantity Working Group

Lake Levels: Prone to fluctuations

- Both Isle Lake and Lac Ste. Anne are shallow prairie lakes with mean depths of 4 – 5 metres
- Water levels naturally fluctuate between 1.5 to 2.0 metres depending on annual precipitation
- This can create significant shoreline variations from year to year
- Conserving riparian areas along shorelines is critical to reduce erosion and maintain water quality



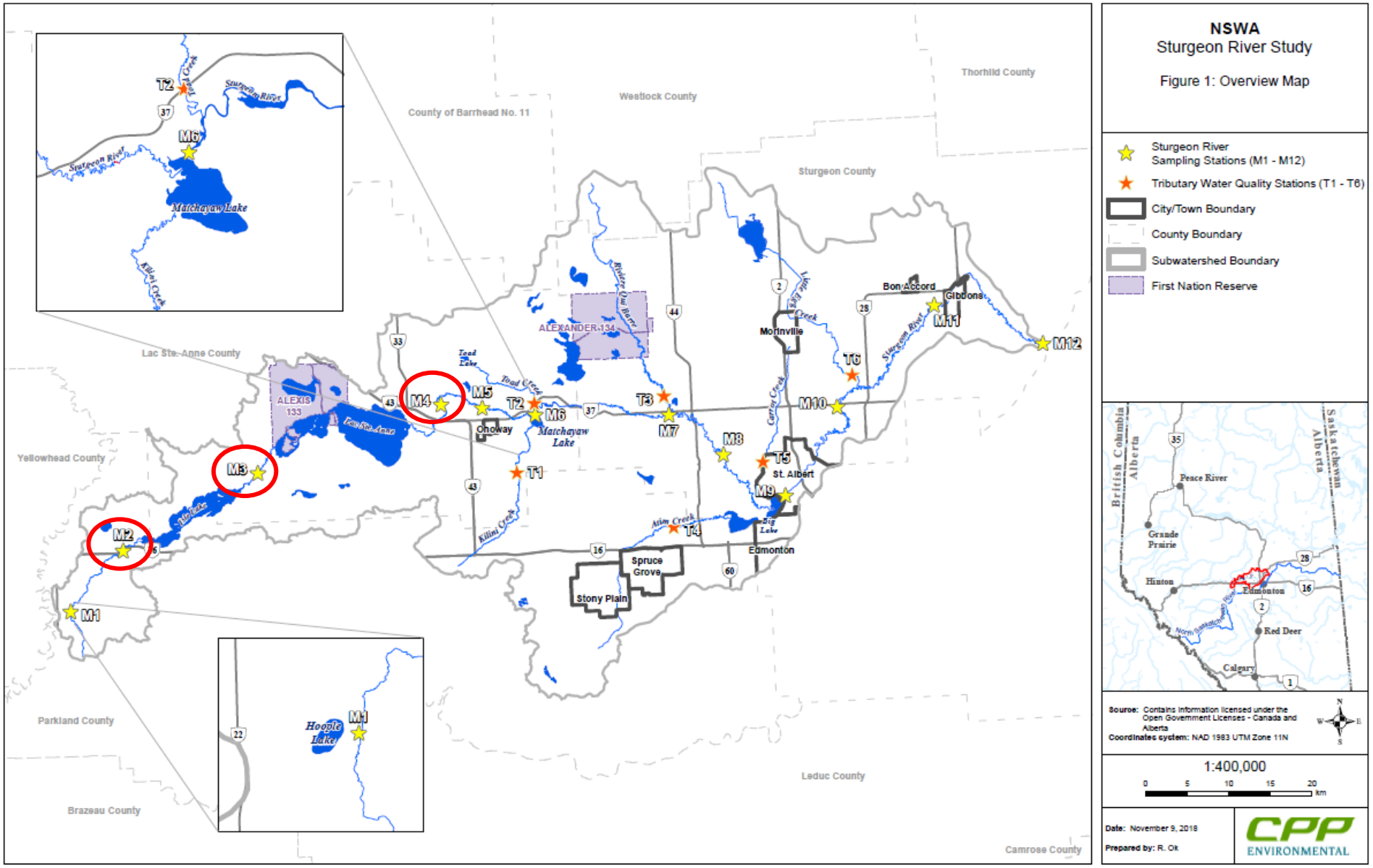
Hydrology Factors

- Groundwater
- Water Extraction
- Stormwater Management
- Storage + Release

Water Quality Monitoring

Sturgeon River WQ Monitoring

- Tetra Tech Consulting
- 12 sites (8 Sturgeon and 4 Tributaries)
- 3 sampling events/year
- High flow (spring), summer storm and low flow (late summer/fall)
- Nutrients, salts, sediment, oxygen



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Sturgeon River Study

Figure 1: Overview Map

- Sturgeon River Sampling Stations (M1 - M12)
- Tributary Water Quality Stations (T1 - T6)
- City/Town Boundary
- County Boundary
- Subwatershed Boundary
- First Nation Reserve

Source: Contains information licensed under the Open Government Licenses - Canada and Alberta
Coordinates system: NAD 1983 UTM Zone 11N

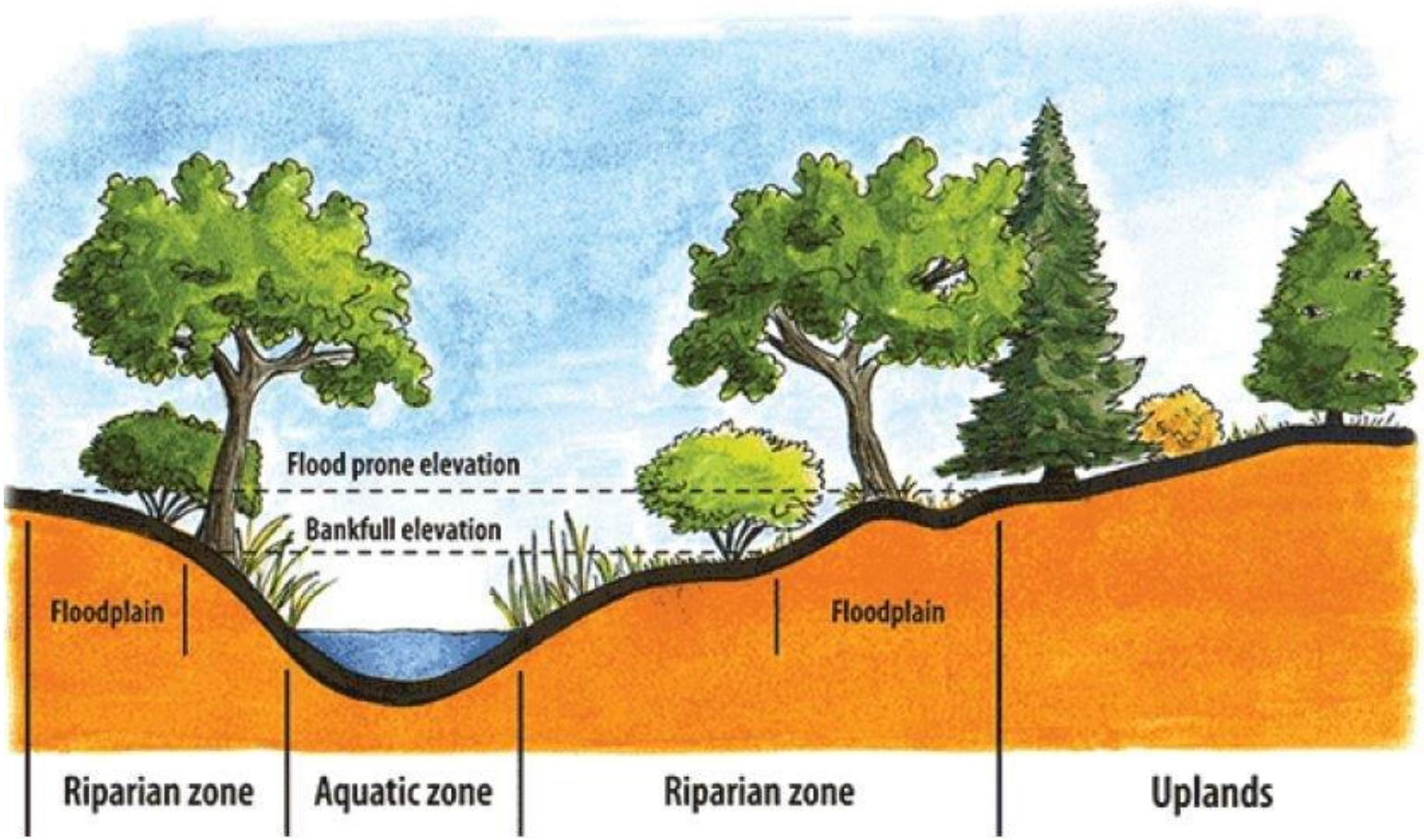
1:400,000

0 5 10 15 20 km

Date: November 9, 2018
Prepared by: R. Ok

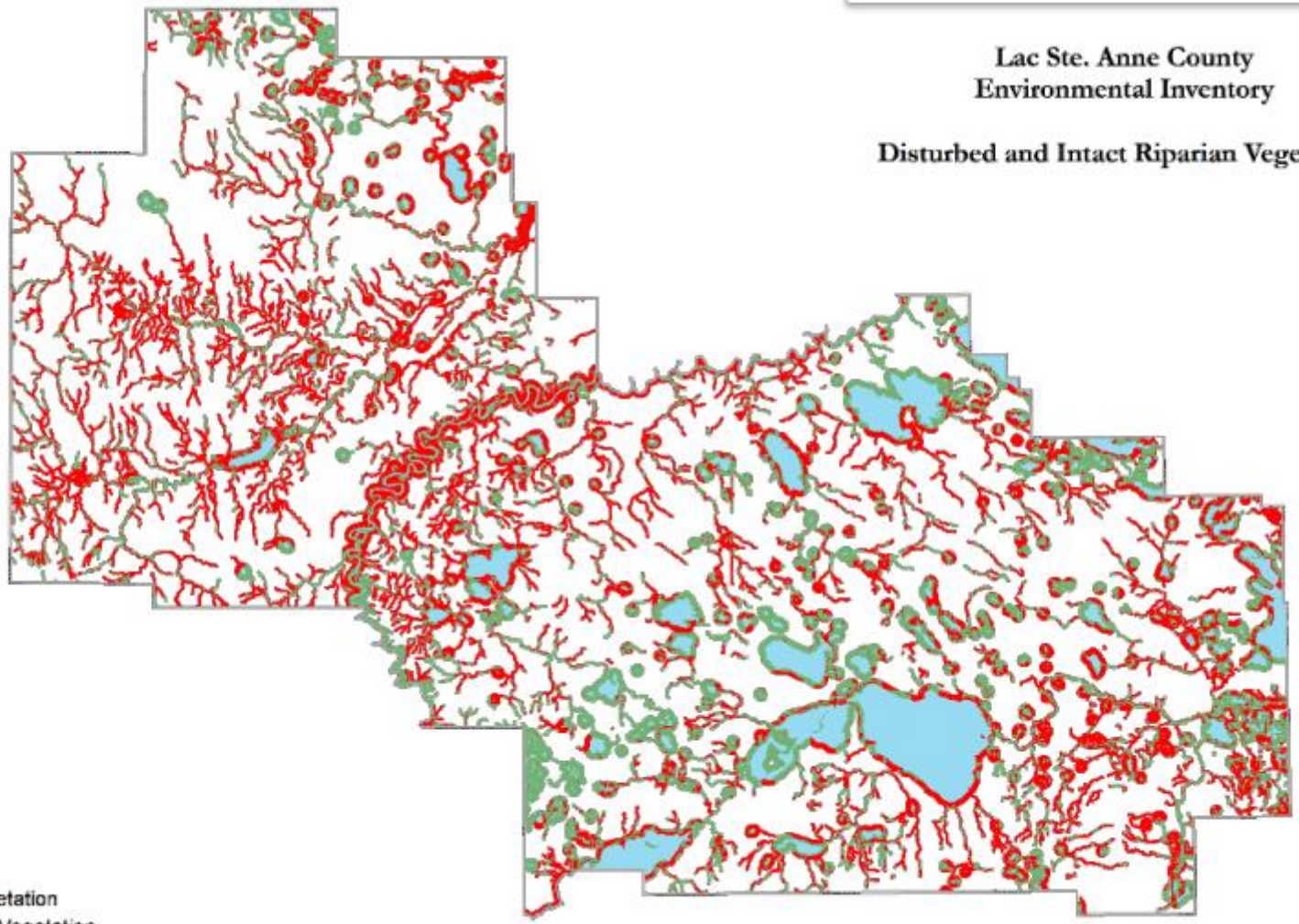
CPP ENVIRONMENTAL

Riparian Area



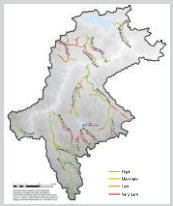
Lac Ste. Anne County
Environmental Inventory

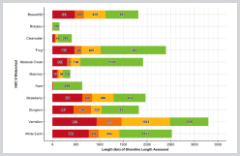
Disturbed and Intact Riparian Vegetation



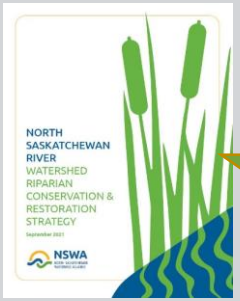
Riparian Health Action Plan

1 Data





2 Policy



65% Target

3 Action

RIPARIAN WEB PORTAL

31st Annual Emerald Awards RECIPIENT

RIPARIAN WEB PORTAL

Riparian 101 + 102 Training

Three key purposes:

- Riparian data access x2
- Resources
- Projects on the ground

RIPARIAN ASSESSMENT

Lac Ste. Anne

Riparian areas are the biologically rich and productive shoreline areas at the edges of lakes, streams, wetlands and rivers.

A GIS-based method and data set was created to assess riparian intactness (or condition) at a watershed scale, including lakeshores and streams. The riparian area was assessed for 50 metres back from the water line and given an intactness rating based on what is visible from satellite imagery.

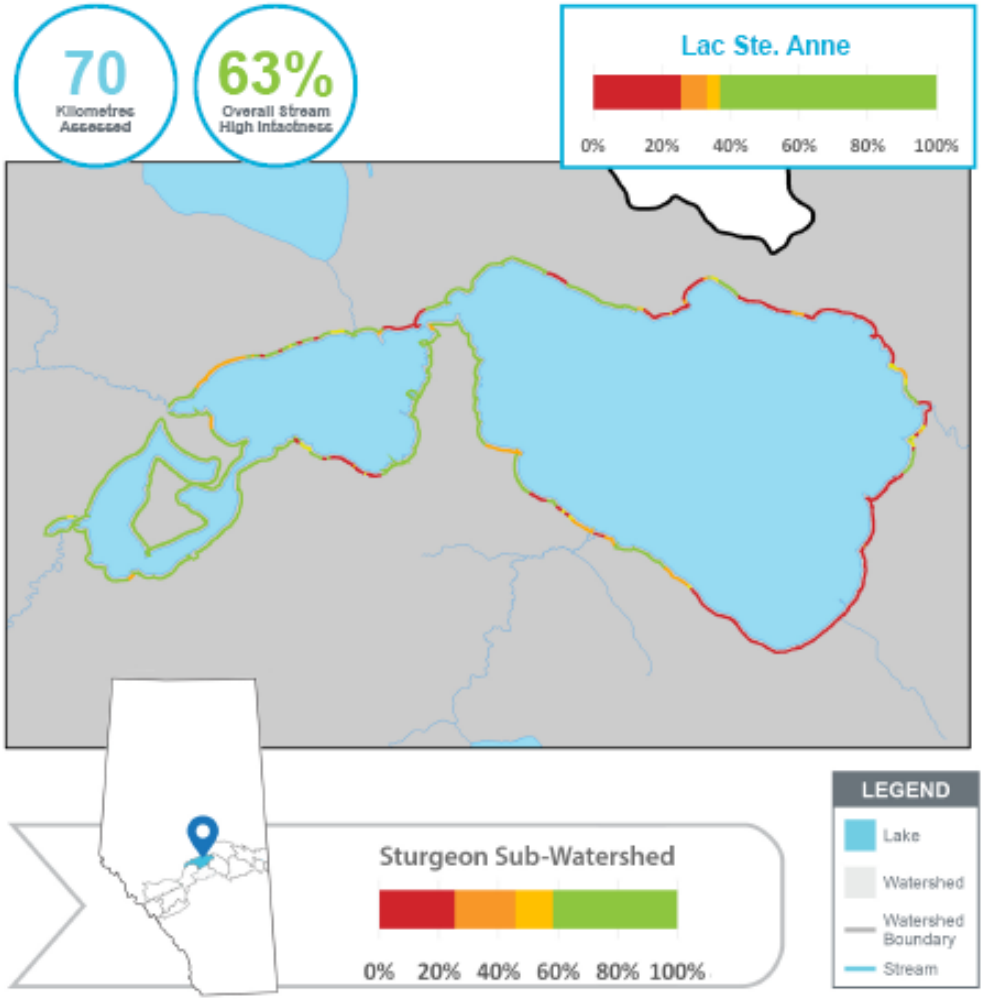
INTACTNESS RATING

HIGH — Vegetation present. Little or no human footprint.	LOW — Vegetation present. Human footprint prevalent.
MODERATE — Vegetation present. Some human footprint.	VERY LOW — Vegetation mostly clear. Human footprint dominant.

Summary of Results

Data Year: 2020

Lac. Ste Anne's shoreline high intactness level was at 63% out of the 70.4km assessed. 3.8% was moderate, 7.5% was low, and 25.5% was considered at very low intactness. The primary land uses in the watershed are agricultural production and urban development.



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RIPARIAN ASSESSMENT

Isle Lake

Riparian areas are the biologically rich and productive shoreline areas at the edges of lakes, streams, wetlands and rivers.

A GIS-based method and data set was created to assess riparian intactness (or condition) at a watershed scale, including lakeshores and streams. The riparian area was assessed for 50 metres back from the water line and given an intactness rating based on what is visible from satellite imagery.

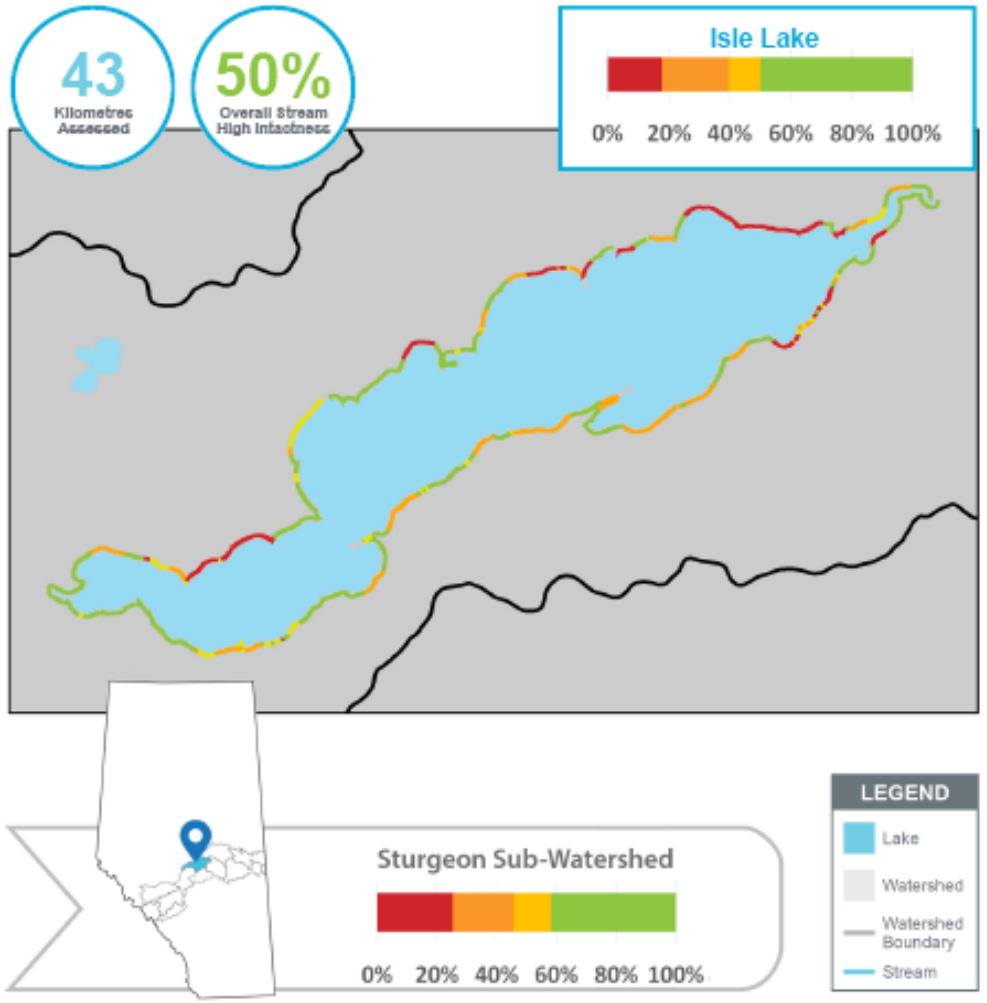
INTACTNESS RATING

- **HIGH** — Vegetation present. Little or no human footprint.
- **LOW** — Vegetation present. Human footprint prevalent.
- **MODERATE** — Vegetation present. Some human footprint.
- **VERY LOW** — Vegetation mostly clear. Human footprint dominant.

Summary of Results

Data Year: 2020

Isle Lake's shoreline high intactness level was 49.7% out of the 43.3 km assessed. 10.4% was moderate, 21.9% was low, and 17.8% was considered very low intactness. The primary land uses in the watersheds are agricultural production and urban development.



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Upcoming Initiatives

NSWA's Wetland Strategy

Purpose:

- Fill knowledge and capacity gaps, align wetland policy and planning, increase collaboration with stakeholders, provide educational opportunities, achieve the common goals of better conserving and restoring the wetlands in our watershed.

Current Initiatives:

- Complete an inventory of wetlands in the NSR watershed
  (In process)

- **Wetland Day Forum** – September 22, 2022
  (Save the date, registration coming soon)

- **Wetland Training Opportunity**
  (In process – Fall/Winter 2022)

Regional Lake Stewardship Project

Engaging workshops

Educational restoration projects

Aligned Communications

Support water quality monitoring

Address communication gaps

Outreach + Education

Educational Forums

Watershed Wednesdays
Speaker Series 2022

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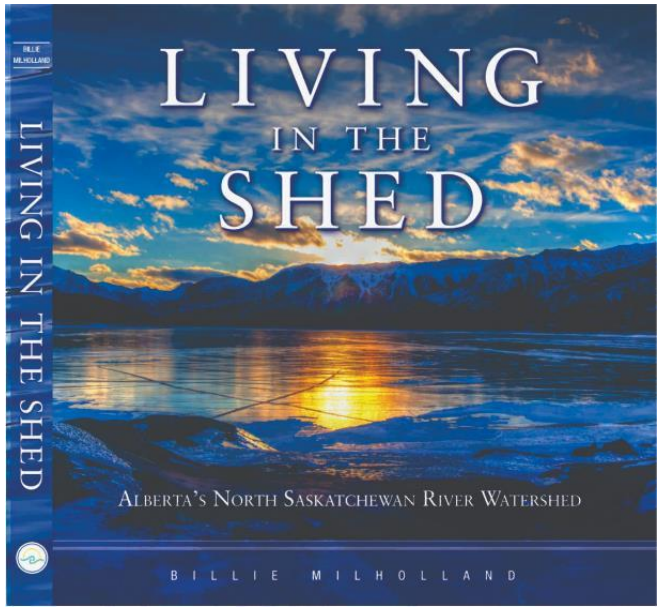
In Stream Newsletter



Thank you!

kelsie.norton@nswa.ab.ca