





What are Natural Assets?

Naturally-occurring features, habitats, or ecosystems that provide services that contribute to the health, well-being, and long-term sustainability of a community and its residents





Examples of Municipal Natural Assets













Why Manage Natural Assets?

 Natural assets provide ecosystem services (ES)

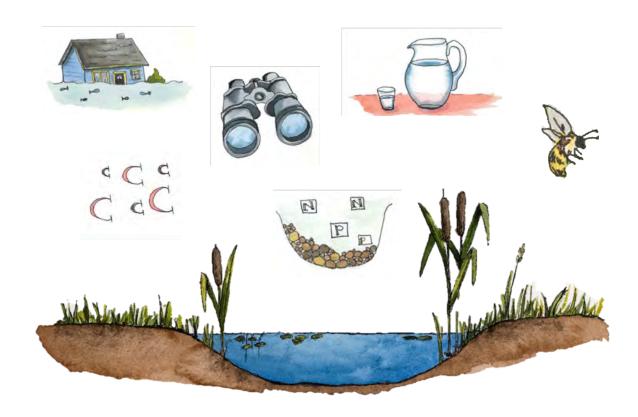
 These services are often overlooked since they are provided for "free"

 ES have value to stakeholders (end users) and are often very expensive to replace or restore once they are compromised or lost



What are Ecosystem Services?

An output, condition, or process of a natural system that directly or indirectly benefits humans or enhances social welfare

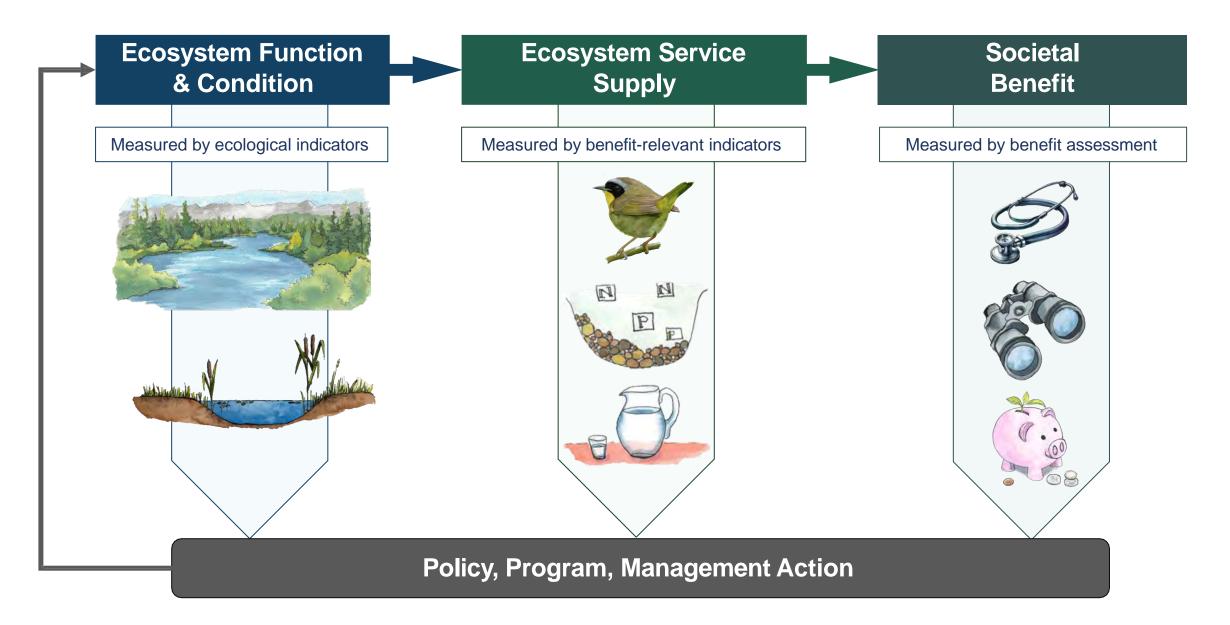


Assessing Benefits of Natural Assets

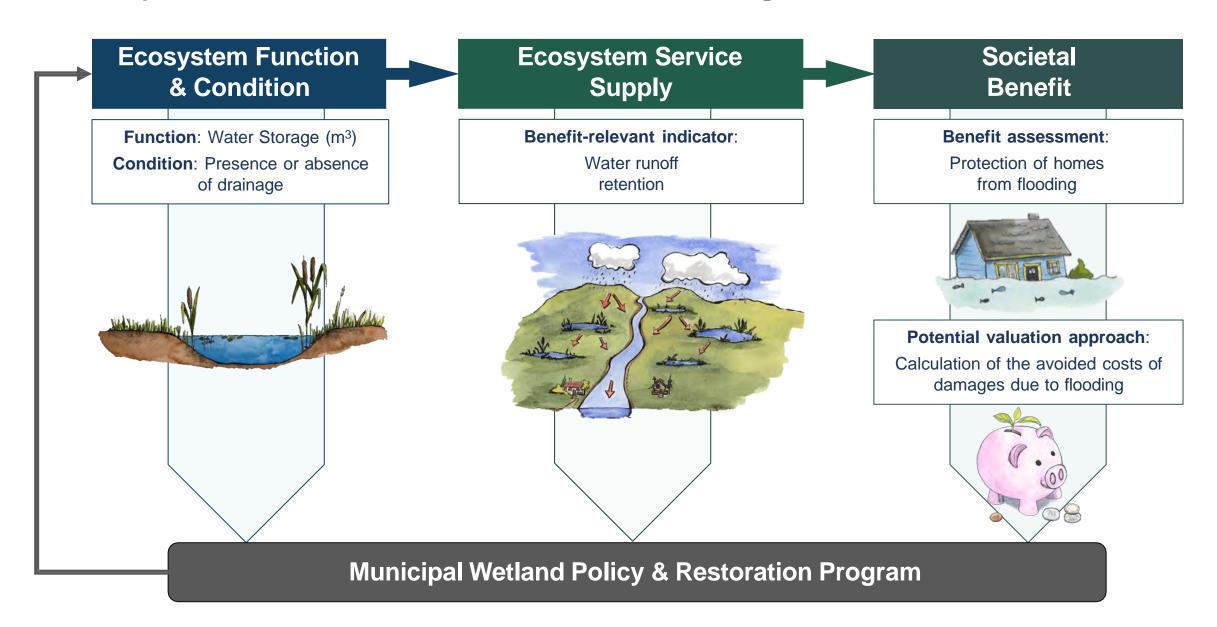
- The benefits gained by an end-user from the ecosystem services provided by a natural asset is what we consider to be that asset's value
- Valuation typically includes an assessment of total economic value, which includes both use values and non-use values

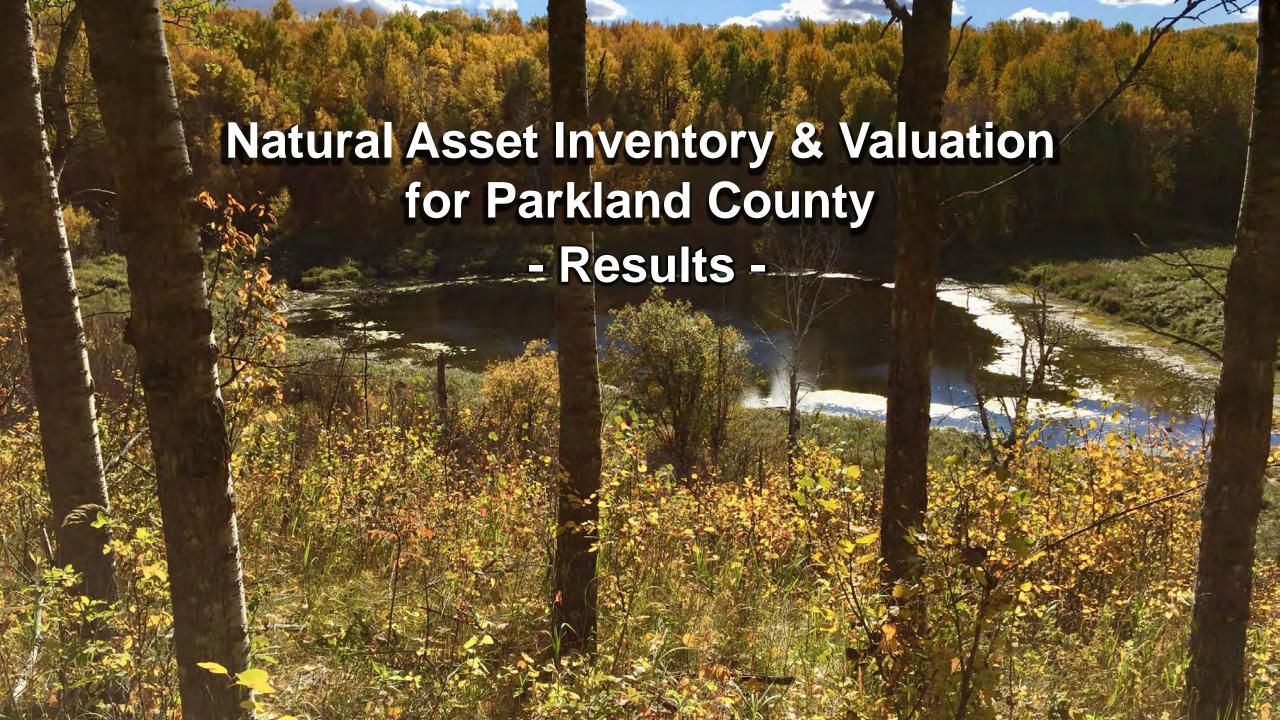


Link between Ecosystem Function, Supply & Benefit



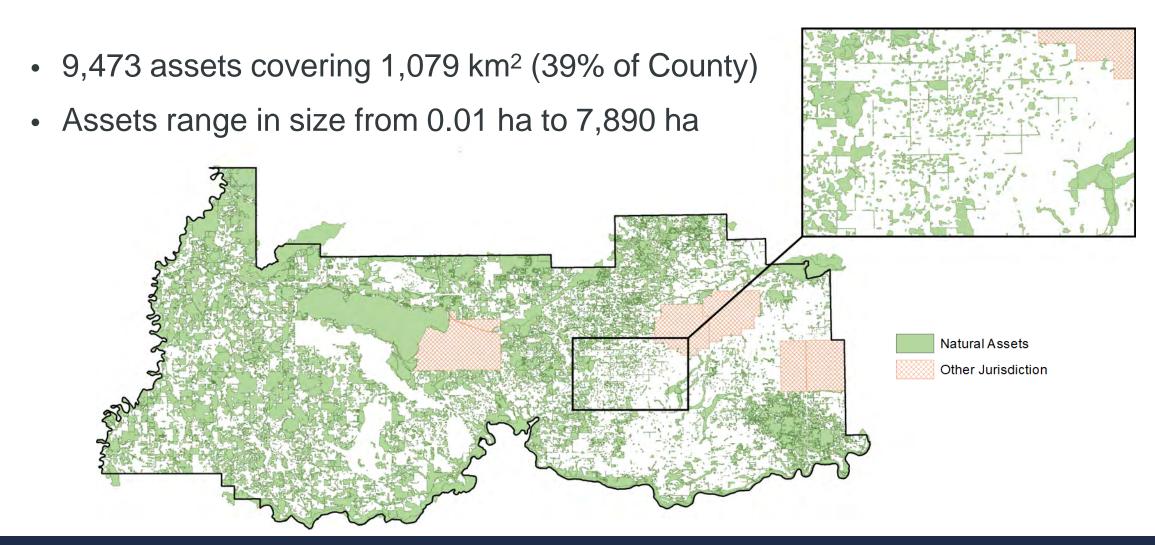
Example: Wetlands and Water Flow Regulation







Identify, Map & Assess Condition of Natural Assets







Identify, Map & Assess Condition of Natural Assets

 Relative condition scores were derived using a desktop assessment 45% of assets were rated as Good or Fair **Relative Condition Score** Good (>75) Fair (51-75) Poor (26-50) Critical (<25)



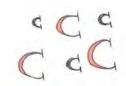


Identify Priority Ecosystem Services & Estimate Supply

Category	Ecosystem Service	Benefit to End-Users	
Regulation & Maintenance Services	Control of soil erosion	Reduced damages/costs of sediment in water	
	Water flow regulation	Avoided/mitigated damages from flooding	
	Water quality regulation	Reduced damage costs of nutrient runoff from agricultural operations	
	Atmospheric regulation	Avoided damages from climate change	
	Temperature regulation	Increased thermal comfort, decreased heat stress for crops and other vegetation	
Cultural Services	Nature-based recreation	Improvements in physical & mental health (e.g., lower blood pressure, reduced anxiety & stress, improved sleep, etc.)	









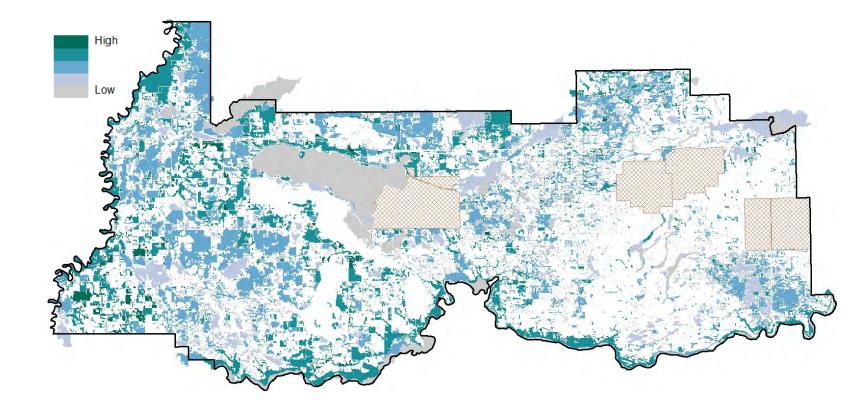


Estimate Supply: Atmospheric Regulation

Benefit Relevant Indicator:

Carbon Sequestration

Cover Type	Carbon Sequestration Rate (tonnes CO₂e/ha/year)
Grassland	0.8
Wetland	2.5
Forest	5.7
Open Water	0.5



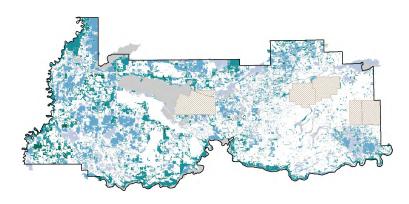


Assess Benefits: Atmospheric Regulation

Benefit Relevant Indicator:

Carbon Sequestration

Cover Type	Carbon Sequestration Rate (tonnes CO₂e/ha/year)
Grassland	0.8
Wetland	2.5
Forest	5.7
Open Water	0.5



Ecosystem Service Value:Social Cost of Carbon

Cover Type	Carbon Sequestration Value (\$/ha)
Grassland	\$3,700
Wetland	\$6,200
Forest	\$18,200
Open Water	\$41,400

Monetary Estimate (\$2023): \$2.9 billion

Assess Benefits: All Priority Services

Ecosystem Service	Monetary Estimate (\$2023)	Confidence in Estimate
Atmospheric Regulation	\$2.9 billion	
Water Flow Regulation	Captured in Atmospheric Regulation	
Temperature Regulation	Captured in Atmospheric Regulation	
Nature-based Recreation	\$1 billion	
Water Quality Regulation	\$60 million	
Control of Soil Erosion	\$12 million	

Total Quantified Monetary Estimate

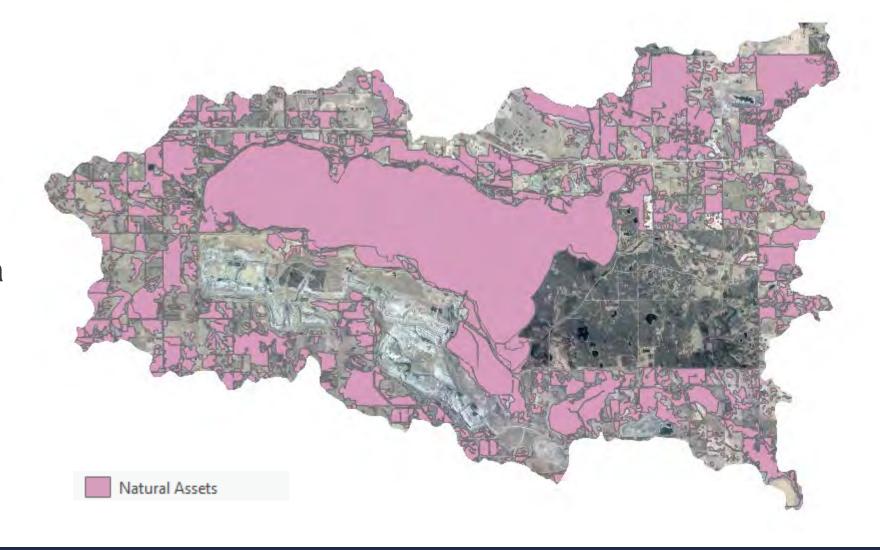
\$4.0 billion

Confidence Estimate Notes:

- Some assumptions/estimation was used to derive estimate, but the value is considered uncontroversial.
- Some assumptions/estimation was used to derive estimate, which may be open to question. Accuracy of estimate is better than +/- 50%.
- Estimates are in the right order of magnitude (e.g., for an estimate of 5 the real value is within the range of 0.5 to 50).

Results in the Wabamun Lake Watershed

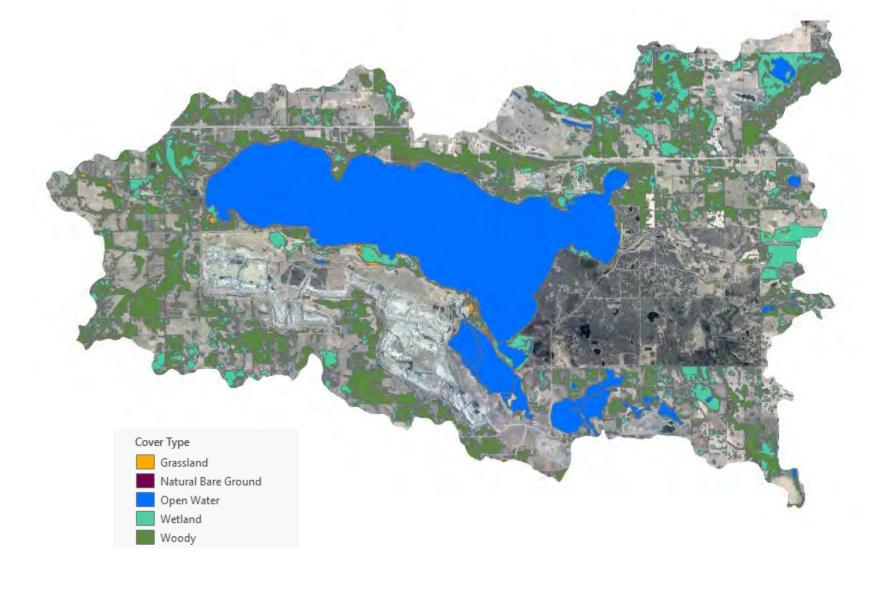
 1,324 assets covering 22320 ha





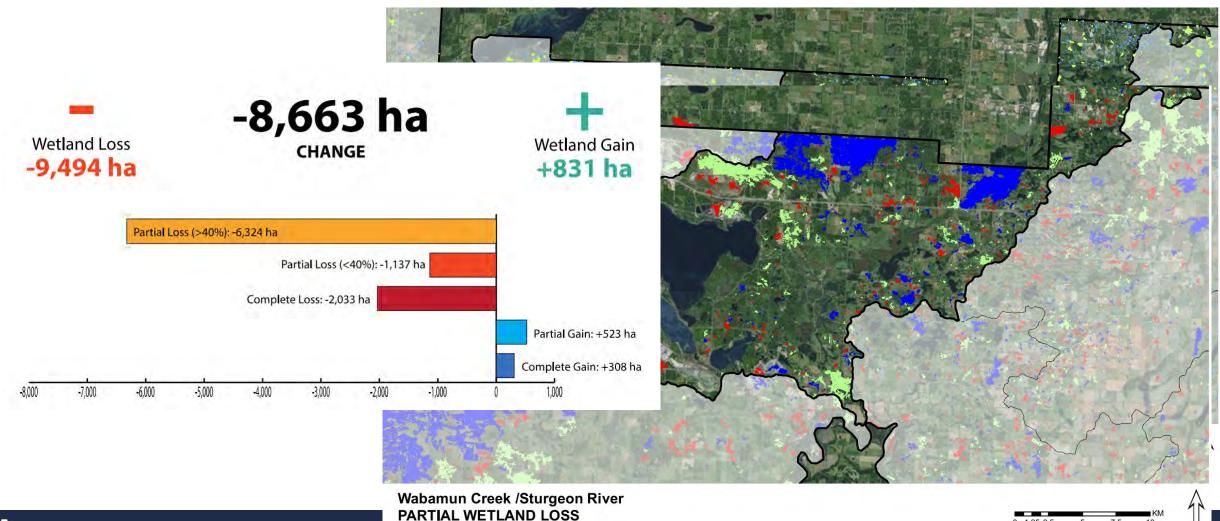
Asset by Type

	Area ha
Grassland	222
Natural Bare Ground	1.9
Open Water	9408
Wetlands	4539
Woodlands	8150
Total	22320.9





Wetland Loss



61 to 80% Loss

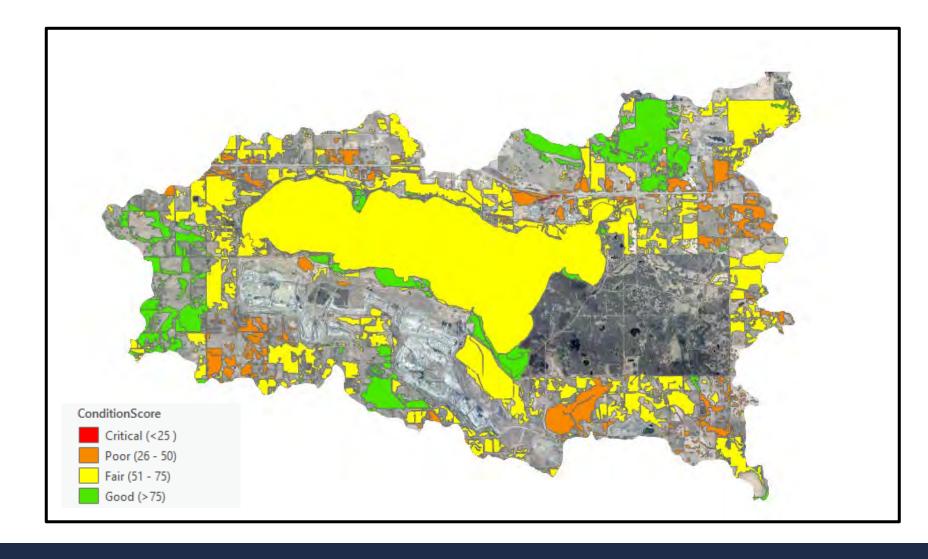
>80% Loss

40 to 60% Loss



Relative Condition Scores

 66% of assets were rated as good to fair





Ecosystem Services Benefits of the Wabamun Lake Watershed

Ecosystem Service	Monetary Estimate (\$2023)	Confidence in Estimate
Atmospheric Regulation	\$654 million	
Water Flow Regulation	Captured in Atmospheric Regulation	
Temperature Regulation	Captured in Atmospheric Regulation	
Nature-based Recreation	\$400 million	
Water Quality Regulation	\$13 million	
Control of Soil Erosion	\$2.5 million	

Total Quantified Monetary Estimate

\$1.0695 billion

Confidence Estimate Notes:

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Why Conserve Nature?

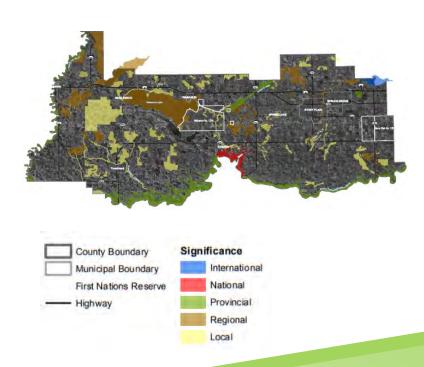
Council's Strategic Plan

Goal C1 — To develop a policy framework that ensures protection of environmentally significant areas.

Priority Strategy —
Review and update the
County's framework
on environmentally
significant areas to
support responsible
management of natural
assets and amenities.

Main Drivers

- Loss of community wealth
 - > \$4 billion is the tip of the iceberg
- Public desire to protect ESAs
 - Controversial developments
 - > MDP public engagement
- Local Drainage Challenges
- Creating efficiencies
 - Infrastructure projects that produce multiple benefits
 - Saving money



Servicing with Nature

How can we integrate natural infrastructure to:

Provide stormwater management

Reduce water treatment

- Limit erosion and improve slope stability
- Protect roads/trials and increase lifespan
- Decrease design standards
- Support recreation and tourism

Benefits:

- Functionality
- Efficiency
- Low cost
- Low maintenance
- Co-benefits
- Rural character



Protect & Restore Natural Assets

Policy & Regulations

- MDP
- LUB
- Nature PolicyFramework

Stewardship & Incentives

- ALUS
- Green Acreages
- ShorelineNaturalization
- Bioengineering
- Wetland Replacement

Education & Outreach

- Interactive Videos
- Inspections
- Skills Development
- Information Sharing
- Student Fieldtrips

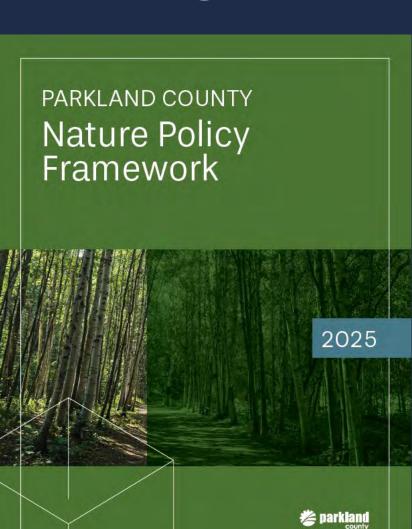




Policy Development

- Use regulation to move from identification to conservation
- Require development to be nature-positive
- Prioritize protection based on value and condition
- Focus on preserving function
- Create the space for innovation







PURPOSE

The purpose of this policy is to ensure the following:

- That the natural features and functions within the County's Environmentally Significant Areas (ESAs) can continue to provide the Beneficial Ecosystem Services needed and desired by residents, businesses, and victors:
- That protection of Environmentally Significant Areas is integrated into nature-positive planning, subdivision and development.
- That development proponents have clarity on the limitations, requirements and opportunities associated with development within or adjacent to Environmentally Significant Areas.

POLICY STATEMENT

Ensuring natural systems are protected from being degraded, destroyed, or fragmented is one of the County's core values. Maintaining and protecting the function of natural features and systems within Environmentally Significant Areas is key to achieving this core value. The County is committed to ensuring that growth and development of the community is nature-positive and does not impair Environmentally Significant Areas and the Beneficial Ecosystem Services theylprovide.

DEFINITIONS

The following terms as defined in the Nature Policy Framework apply in this policy:

- 1 Beneficial Ecosystem Services
- 2. Biophysical Assessment
- 3. Conservation Reserve
- 4. Environmental Conservation Master Plan
- 5. Environmental Reserve
- 5. Environmental Reserve Easement

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NEXT STEPS



Support land use planning decisions



Integration into design standards & asset management system



Identify priority areas for conservation and restoration







Phased Approach

Phase 1: Overarching Policies Phase 2: Natural Feature-Specific Policies Environmentally Significant Areas Policy Project natural asset valued at \$4 billion **Protected Natural Areas Policy** Improve flexibility and clarity for development Innovative Conservation Approaches Policy Sets targets for conservation **Local Conservation Fund Policy** Standardizes setbacks & buffers, including allowances for modification Provides options for mitigation and offsetting

Conservation Tools

Direct Securement

- Environmental Reserve
- Environmental Reserve Easements
- Conservation Reserve
- Conservation Easements

Administrative

- Local Conservation Fund
- Sustainability Committee

Planning

- Conservation Design/Cluster Development
- Conservation Offsets
- Transfer of Development Credits
- High-Ratio Wetland Replacement

On-Farm Projects

How ALUS Makes a Difference

- » ALUS is an economic driver that benefits agricultural producers, the environment, and the entire local community
- » ALUS National sources funding through corporate sponsors and grant opportunities, and allocates funds to participating ALUS communities
- » ALUS funds support on the ground project establishment, as well as provide ongoing annual payments, as recognition for the ecosystem goods and services produced
- » ALUS is community-developed, and farmer-delivered





Shoreline Naturalization



Bioengineering

Use of living plants to stabilize steep and unstable slopes.

- Functionality
- Low cost
- Low maintenance
- Habitat creation
- Rural character
- Carbon sequestration



Education and Outreach

















Education/Outreach

Waterbody Protection

PROTECTING YOUR WATERFRONT

WETLANDS ON YOUR LAND

on your land? If you use the terms slough,

swamp, swampy area, muskeg, low area

or marsh to describe an area on your land,

then you likely have a wetland. Water may

Are you planning to subdivide or develop your land in the future! It is important to understand that wetlands are protected under the Alberta Wetland Policy and the overarching Water Act.

What is a wetland? The Ailberta Wetland Policy defines wetlands as "...land saturated with water long enough to promote wetland or aquatic processes as indicated by poorly drained soils, hydrophytic (water loving) vegetation and various kinds of biological activity that are adapted to the wet environment." It is estimated that Ailberta has lost approximately 60 – 70% of the wetlands

in settled areas and Parkland County has lost approximately 56% of its wetland area since to natural fluctuations; however, they are still orderected!

Why are they important? Wetlands play an important role in improving water quality and quantity of water supplies, providing critical wildlife habitat, supporting biodiversity, recharging groundwater and reducing the effects of drought and flooding. How do you know if you have a wetland

For more information, please view the Alberta Wetland Policy and the Landowner Guide to the Alberta Wetland Policy, available at www.WetLandsAlberta.ca.

such as excess fertilizer before they reach the lake. When designing a buffer, a minimum 30-meter width is recommended. The larger the buffer the better, however, any width is better than none. More benefits provided by shoreline buffers are listed below. Please note that work in and around water bodies may require regulatory approval. Checkout the "Waterfront Living" page on the Parkland County website for more tips on how to protect our lakes!

BENEFITS OF ESTABLISHING A LAKEFRONT RIPARIAN BUFFER

- · Improved water quality
- Increased wildlife biodiversity, habitat and connectivity
- Decreased shoreline erosion
- Protect and possibly increase property value and aesthetics
- · Flood protection and mitigation
- Less maintenance for landowners than lawns

BUFFER DESIGN

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- A. Trees like poplar (15 25m) and Birch (10 – 15m) can be planted strategically to preserve your view and stabilize the soil.
- B. Paths should be made of permeable materials and meander along the slope instead of straight down.
- C. Wildflowers like goldenrod (1m) and fireweed (1.5m) add habitat for pollinators.
- D. Some local species to plant include red osier dogwood (1 – 4m), wild rose (1.5m) and willow species like sandbar (4 – 6m) and beaked (0.5 – 10m).
- E. Plants in the lower areas including cattails (1.5–3m), sedges (up to 1m) and other aquatic species will often revegetate on their own.
- F. If you build a dock, try less damaging options like a raised dock.

USE OF FERTILIZER

Fertilizer runoff is identified as a nonpoint source pollution, meaning it doesn't come from just one location but rather multiple dispersed areas — complicating its regulation.

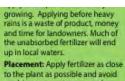
in Alberta, which features some of the highest household fertilizer usage rates, the consequences are particularly severe, as most lakes in the region are already eutrophic—rich in nutrients. The additional nutrients from fertilizer runoff further increase this condition, elevating nutrient levels and contributing to the growth of blue-green algae, which poses risks of skin irritations upon contact and illnesses if ingested.

Over-fertilizing also leads to runoff that degrades water quality and undermines long-term soil fertility.

Residents in Parkland County can utilize funding available through programs like the Land Stewardship Centre's Green Acreages Program to support sustainable land use practices that benefit local waterbodies.

PRACTICES THAT CAN HELP REDUCE IMPACTS OF FERTILIZER USE:

- Maintain a Healthy Buffer Zone: Maintaining a strip of healthy native vegetation along shoreline areas can help filter runoff, while also improving shoreline stability. The wider the buffer width, the greater the filtering capacity for stormwater runoff.
- Alternative Landscaping: Native plants are an alternative to lawns that require less water, fertilizer and maintenance. This is because they are already adapted to local conditions. Decreasing hard surfaces can also reduce runoff from your property.
- Soil Testing: Testing soils prior to fertilizer application can help analyze nutrient content in relation to plant nutrient needs. This can provide essential information to prevent over-fertilizing.



 Placement: Apply fertilizer as close to the plant as possible and avoid applying near waterways and on hard surfaces.

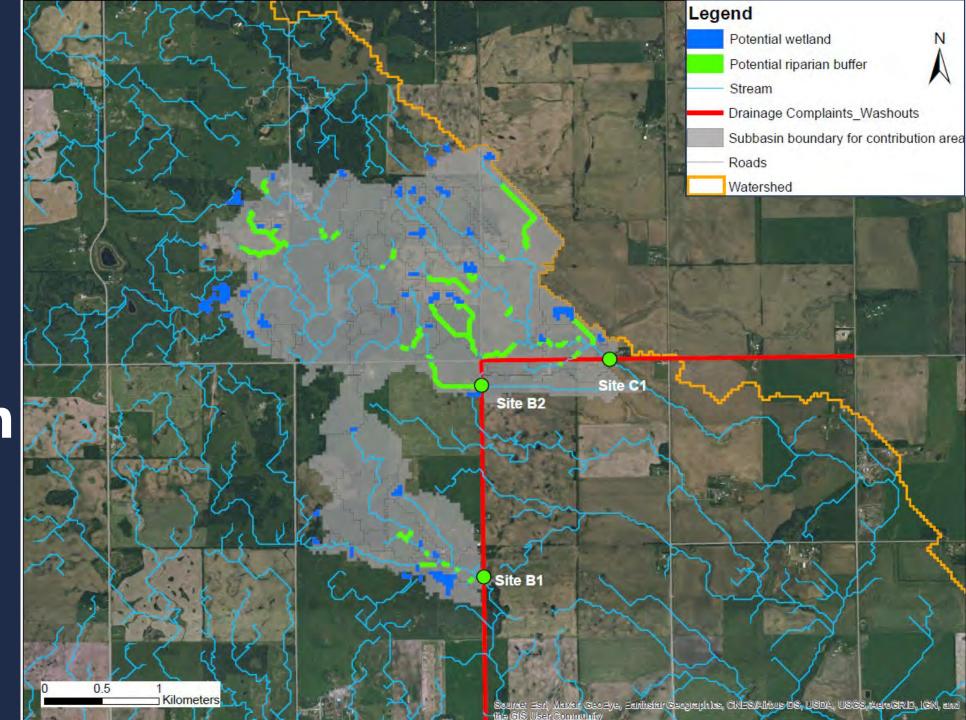
6. Alternatives to Synthetic Fertilizers: Synthetic fertilizers do little to improve long-term soil fertility and are higher in nutrients than most plants can uptake. Although overuse can still lead to runoff, organic fertilizers act as slow-release fertilizers with lower nutrient values. Many organic fertilizers can also contribute to improvements in overall soil health and water retention, if used appropriately.

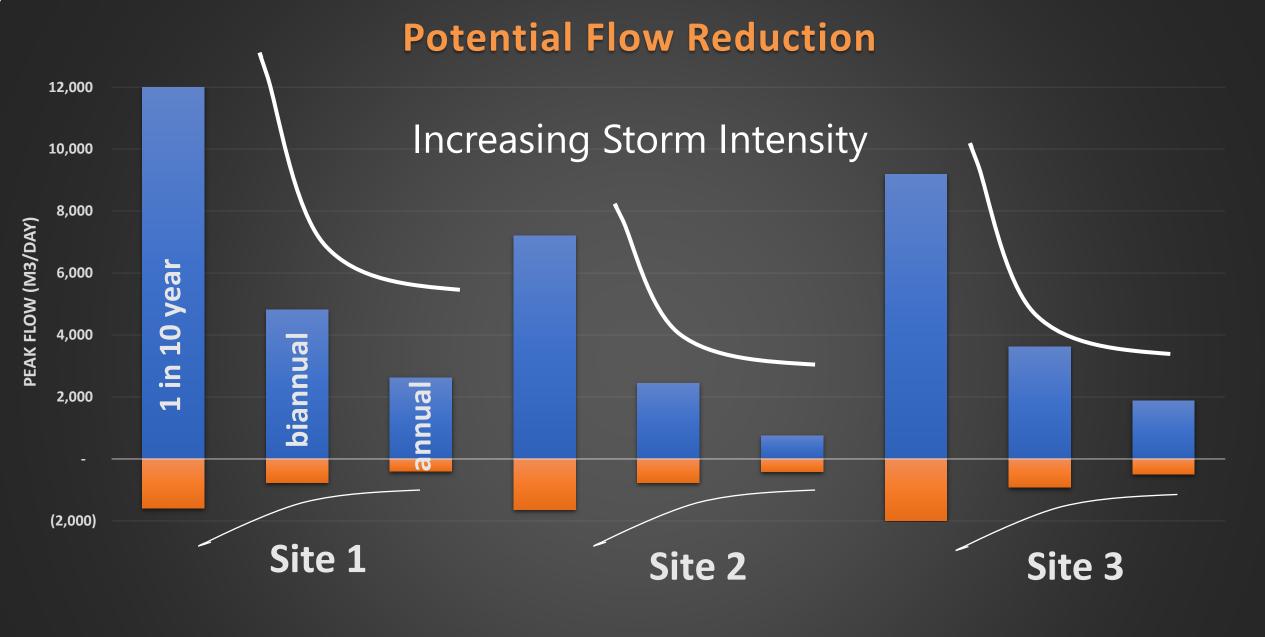






Wetland & Riparian Restoration





Increasing Benefit

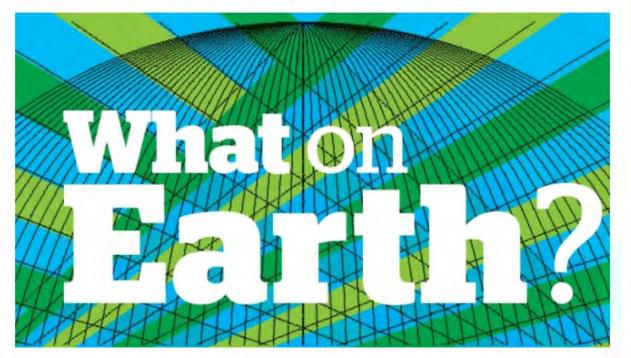
National Recognition

Science · What on Earth?

Restoring nature can lead to fewer road repairs, Alberta study shows

Also: How the rich are jeopardizing the water supply

CBC News · Posted: Apr 13, 2023 12:05 PM MDT | Last Updated: April 13, 2023



LOCAL NUTS & BOLTS OF NATURAL INFRASTRUCTURE BY INTRODUCING CLANT BIODIVERSITY, MAKE WE CAN EDUCATE NATURAL CITIZENS OF ITS ASSET INTEGRATION Source of BORING! INSDIRATION! NICOL THINK IN CITY of NATURAL LONG-TERM SELKIRK, **ZT922A** Timeframes. IT'S ABOUT INITIATIVE CONVINCING THE PUBLIC THAT NATURAL ASSET POLICY IS A POSITIVE! HOW CAN WE INTEGRATE NATURAL INFRASTRUCTURE To SOLVE OUR PROBLEMS IN THE MOST EFFICIENT CAN MAKE A BIG Way possibles MUNICIPALITIES FACE WE THE LOOKING FOR A PARADIGM REGARDING FUNDING & PERSONNEL. CHANGING THE PERSPECTIVE OF NATURAL ASSETS AS A HINDRANCE To progress! PARKLAND COUNTY, AB

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(Sködt McNalty/CBC)

Education/Outreach

Newsletters



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Why are they important? Wetlands play an important role in improving water quality and quantity of water supplies providing critical wildlife habitat, supporting biodiversity, recharging groundwater and reducing the effects of drought and flooding.

How do you know if you have a wetland on your land? If you use the terms slough, swamp, swampy area, muskeg, low area or marsh to describe an area on your land, then you likely have a wetland. Water may to natural fluctuations: however, they are still protected!

How can this impact your subdivision or development plans? Upon review of your application, Parkland County may require the use of setbacks from or avoidance of wetlands. Land dedication or technical studies may also be necessary to protect these environmentally sensitive features.

For more information, please view the Alberta Wetland Policy and the Landowner Guide to the Alberta Wetland Policy, available at www.WetLandsAlberta.ca,



pruned between October 1 and March 31 annually?

summer months is provincially legislated in the Alberta Pests Act to prevent the spread of the devastating Dutch Elm Disease (DED)

under the bark.

Leaves that droop and turn yellow and

edges and veined leaves.

STOPDED hotline: 1-877-837-ELMS (3567). Follow best practices to keep your trees

Do not transport firewood from other provinces into Alberta. Buy locally and burn onsite.

County Transfer station at 52514 Range (fees may apply).

testing, please contact the Agriculture and Environment Services Building at

2025 SPRING 11



NATIVE PLANT GARDENING

Plants native to Parkland County make a beautiful addition to any garden. Native plants are perennial, naturally adapted to local pants are pereinner, naturally assigned to loc conditions and, if planted in the right place, require little maintenance once established. Using native plants in your garden enhances biodiversity, helps native pollinators and

POLLINATOR GARDENS

Planting a diversity of flowers of different shape pollinators to your garden. Clumps of 3 to 8 native plugs or seeds of varied species together

FLOOD-TOLERANT GARDENS with decaying wood, hollow stems and patches of undisturbed bare soil will also provide habitat Flood-tolerant plants include: fireweed

hyssop, blanket flower, beebalm, bearberry and

DROUGHT-TOLERANT GARDENS

Drought-tolerant plants include: Little bedstraw, smooth fleabane, blue-eyed grass heart-leaved Alexanders and smooth aster.

Shrubs and trees include: jack pine, junipers

hedstraw early blue violet and blue-eved grass

GROWING YOUR OWN FOOD

for bees.

- · Planting in the ground Using garden boxes
- · Container gardening
- Double-check wildflower mixes to ensi they do not contain invasive weeds. A full list of invasive plants can be found at
- www.abinvasives.ca Place plants with similar lighting and water

- a rain barrel and directing water to the base of the plants with a hose or a drip irrigation system.
- · Use FireSmart landscaping to keep your property safe. Check your soil. Good garden soil is deer
- loose, well-drained and contains decayed organic matter.
- Choose your plants by talking to a focal horticultural club or supplier
- Use a planting calendar to determine vegetable planting times. Harden off seedlings prior to planting to
- increase plant survival. Use compost to help your plants thrive! Compast should be added into holes when planting and placed around the base of
- Plants in garden beds benefit from fertilizers

Water plants in the early morning or in the evening and direct the hose to the base of the plant to maximize absorption and

www.parklandcounty.com/Grou

Remember to check local bulgues for any are planting in the ground.



COMMUNITY LEADERSHIP **DELIVERS LOCAL SOLUTIONS**

SUSTAINING AGRICULTURE, WILDLIFE, AND NATURAL SPACES

ALUS helps cost-share the establishment of beneficial manageme projects and practices, providing an annual payment for the



USE OF FERTILIZER

In Alberta, which features some

SHARE THE ROAD

particularly severe, as most lakes in the region are already eutrophic— rich in nutrients. The additional nutrients from fertilizer runoff further

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HELP REDUCE IMPACTS OF Maintain a Healthy Buffer Zone: up in local waters.

also improving shoreline stability. The wider the buffer width, the greater the filtering capacity for stormwater runoff.

that require less water, fertilizer and maintenance. This is because they are already adapted to local conditions. Decreasing hard surfaces can also reduce runoff





2025 Weed Control Program

As shown in the image above, we have selected areas of the county where we will focus our resources for 2025. We will start by controlling weeds. on County lands and then begin assessing private properties. Properties with noxious and prohibited noxious weeds will be inspected and given

A weed notice can be issued where no effort is made to prevent the spread of noxious weeds or destroy prohibited noxious weeds.

Vegetation Control

For more information on the Vegetation and Weed Control Programs visit www.parklandcounty.com/weeds





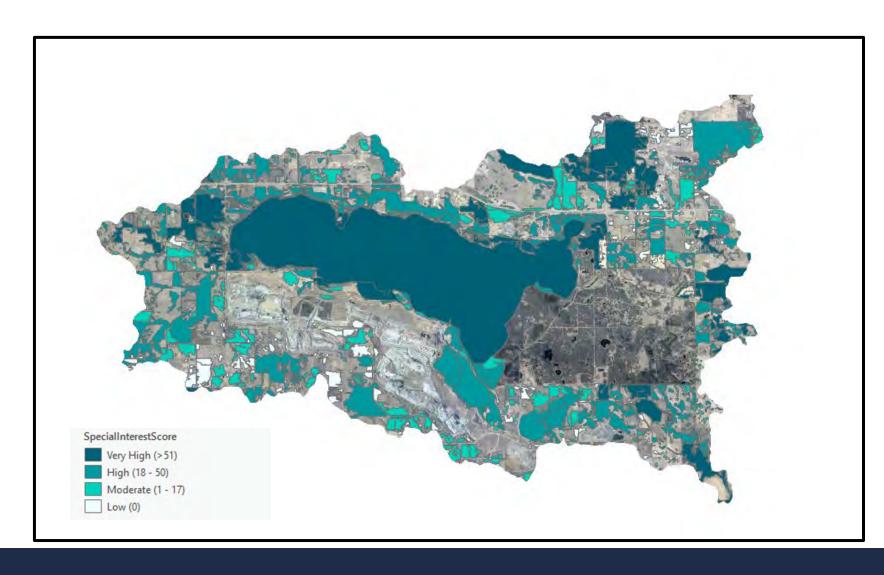




- Communications on invasive plants
- Installation of a watercraft cleaning unit
- Participation at WWMC inspection and weed pull events
- Reporting all active cases to Province

Special Interest Scores

 32% of assets were rated as high to very high







 Program developed for acreage, hobby farm, and recreational property owners

 Involves the implementation of stewardship practices that improve the function of their properties and provide an environmental benefit

Offers publications, workshops and financial support









56% loss of wetlands in Parkland County since 1950s



Healthy Lakes Project



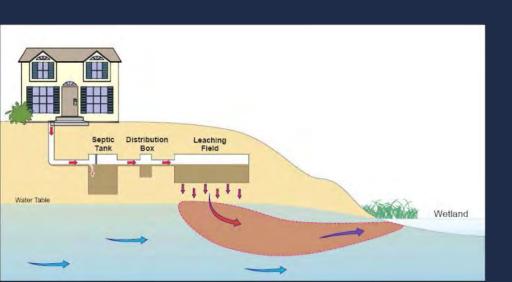


Conduct high level sewage inspections on lake front properties



Goal:

Educate area residents on properly functioning sewage systems to gain voluntary compliance





900 Inspections 4 Lakes

5 Years