Conserving and Restoring Wetlands and Grasslands for Climate Resilience

Conserving Canada's Wetlands

Climate West Conferenced June 18, 2025

Chuck Deschamps
Ducks Unlimited Canada

Presentation Overview:

- Who is Ducks Unlimited Canada
- Wetlands and the Ecological Goods and Services they provide
- DUC’s Natural Solutions

Conserving Canada’s **Wetlands**

Who is Ducks Unlimited Canada?

More than 80 years of experience in conservation.

A registered charity, we partner with landowners, government, industry, and other non-profit organizations to conserve wetlands that are critical to waterfowl, wildlife and the environment.

Since 1938, DUC has been working with landowners, farmers and ranchers in Saskatchewan.

Saskatchewan's First project

Waterhen Marsh, Kinistino, SK

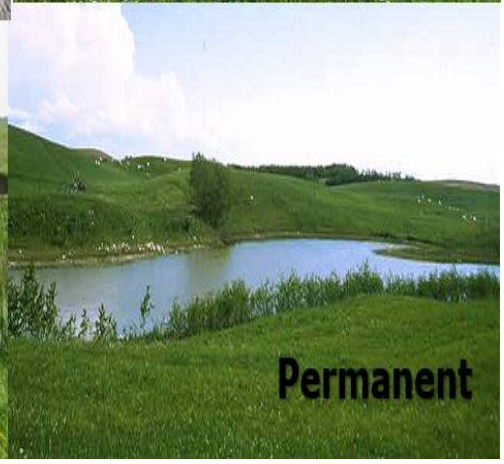
Conserving Canada's **Wetlands**

Institute for Wetland and Waterfowl Research

Our science brings conservation to life.

The Institute for Wetland and Waterfowl Research powers Ducks Unlimited Canada's conservation work. Our science shapes the future.

Wetlands



Wetlands Come in many types

Ducks Unlimited Canada

RESCUE OUR WETLANDS

Wetlands are found with other Prairie Habitats work together to fight climate change

Conserving Canada's Wetlands

What do wetlands do for you?

What are Ecological Goods and Services?
Putting a Price Tag on Wetlands

<u>Ecological Goods:</u>

Fresh Water, Forage, Fish and Wildlife

<u>Ecological Services:</u>

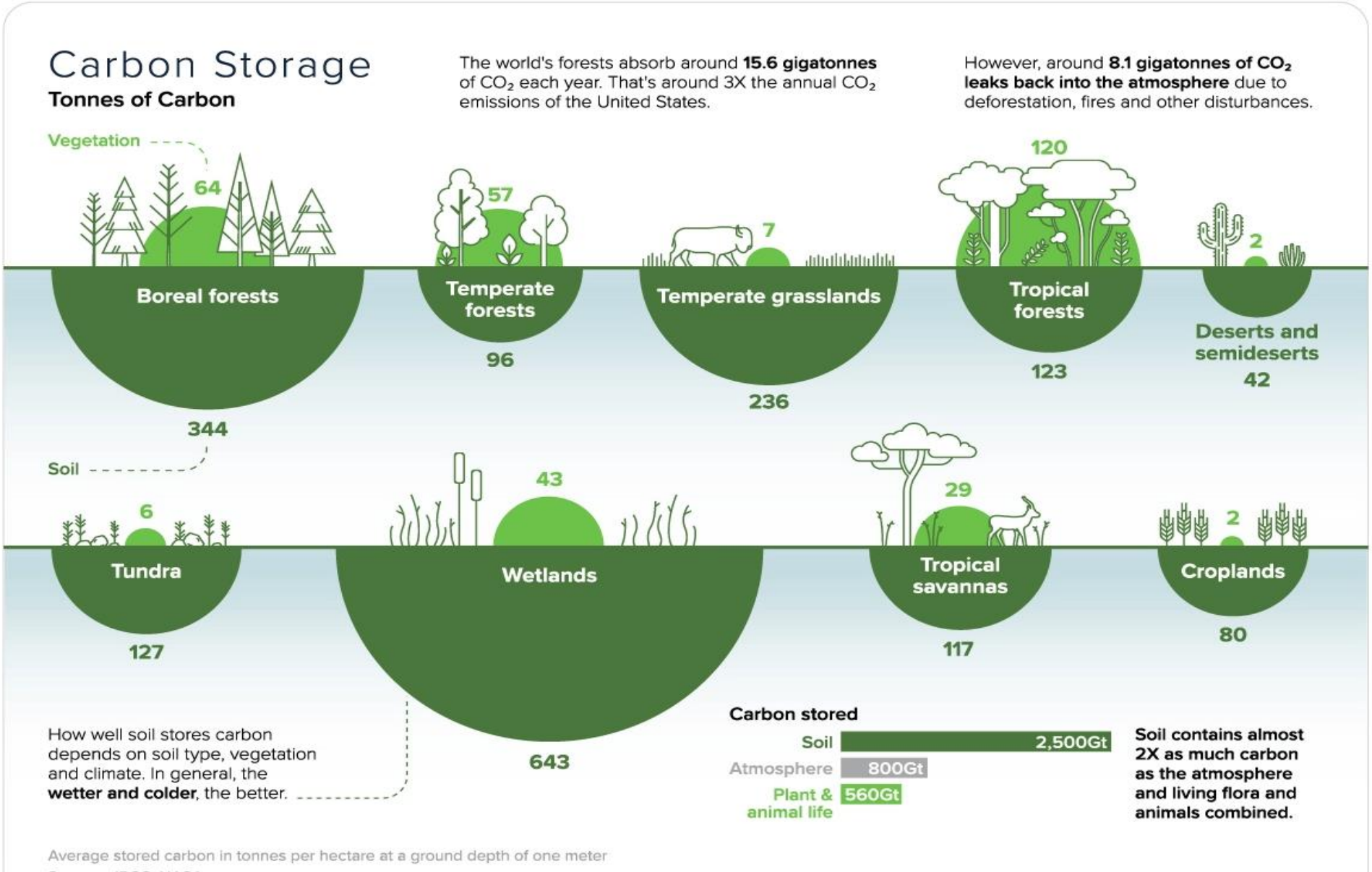
Water Purification, Waste Treatment, Erosion Control, Carbon Capture, Flood/Drought Protection, Habitat/Biodiversity, Pollination, Recreation, Aesthetics

Conserving Canada's **Wetlands**

Carbon Storage and Climate Regulation:

- Wetlands are important terrestrial **carbon stores or sinks** and have a **net-cooling effect** on the atmosphere.

Carbon storage

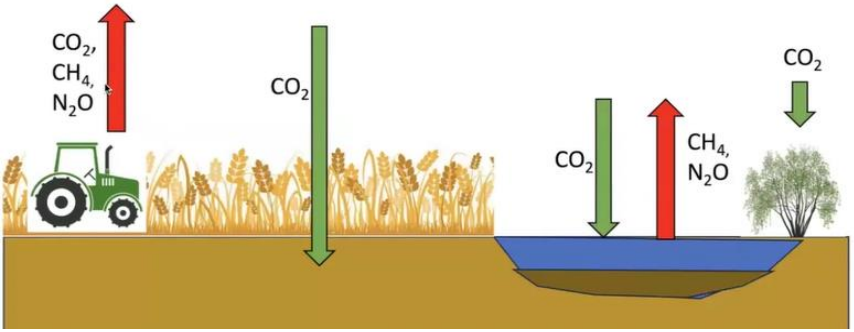


Effects of Drainage on Carbon Emissions from Wetlands in the Canadian Prairie Pothole Region

Sydney Jensen (U of R), Lauren Bortolotti (DU), Colin Whitfield (U of S), Kerri Finlay (U of R), Darrin Qualman (NFU), Murray Hidlebaugh, Scott Beaton

GHG emissions with intact wetlands

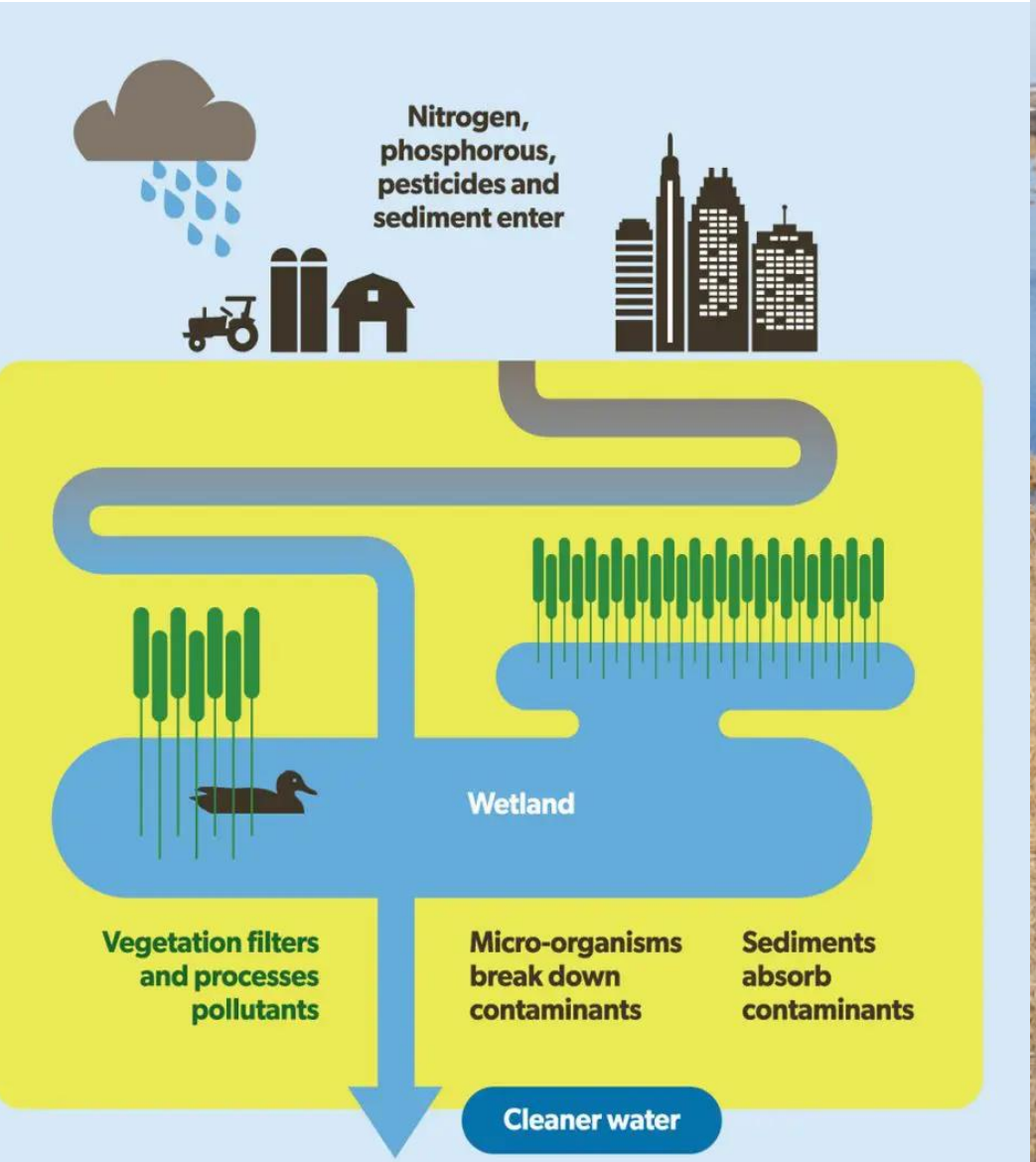
- Farming emissions (fertilizer, machinery) and C storage in soils
- Wetland emissions (CH_4) and uptake (C storage in sediments and vegetation)

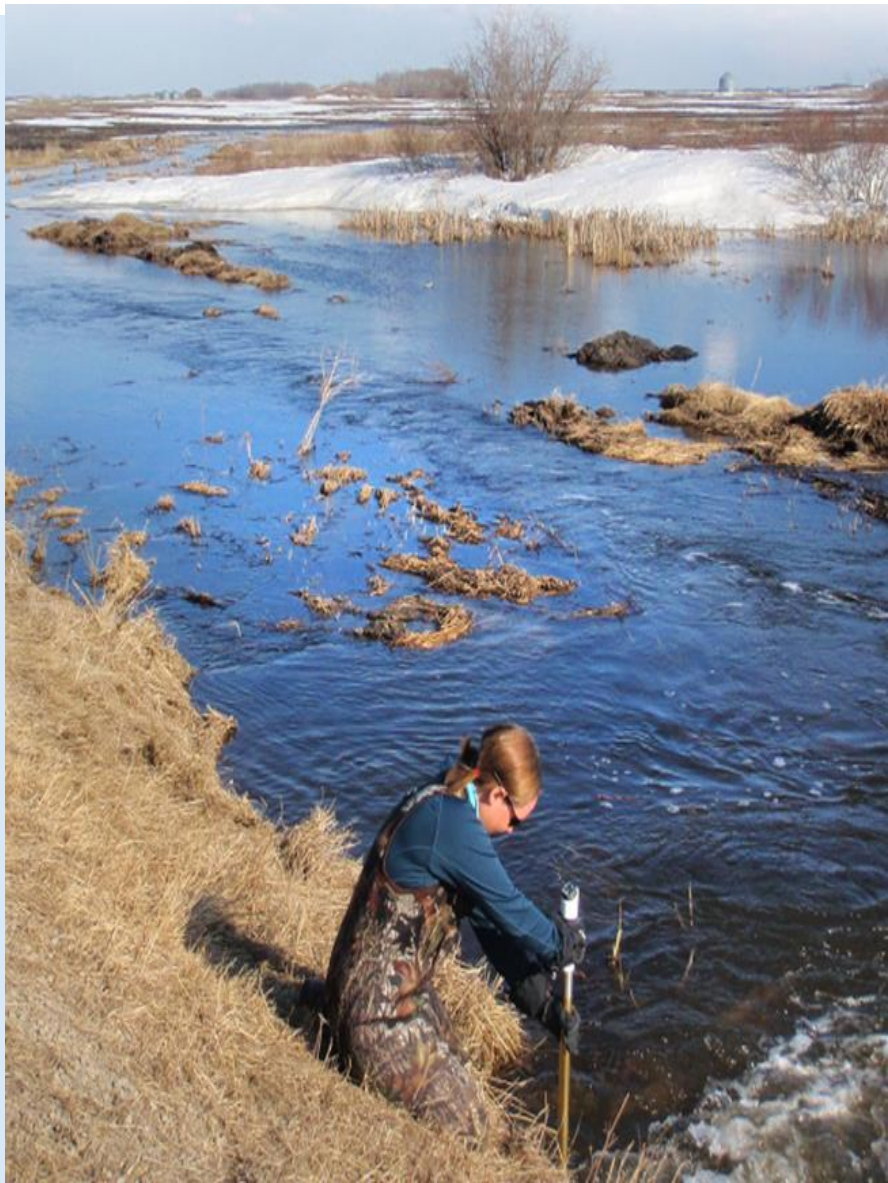


Total Carbon Lost from Wetland Drainage

- Agriculture total emissions 2021 = 54 Mt $CO_{2\text{-eq}}$ yr^{-1}
- Prairie provinces are responsible for 64% of this
  - Wetland drainage can add ~ 10% to Prairie province's agricultural GHG emissions

Water Quality / Flood Protection



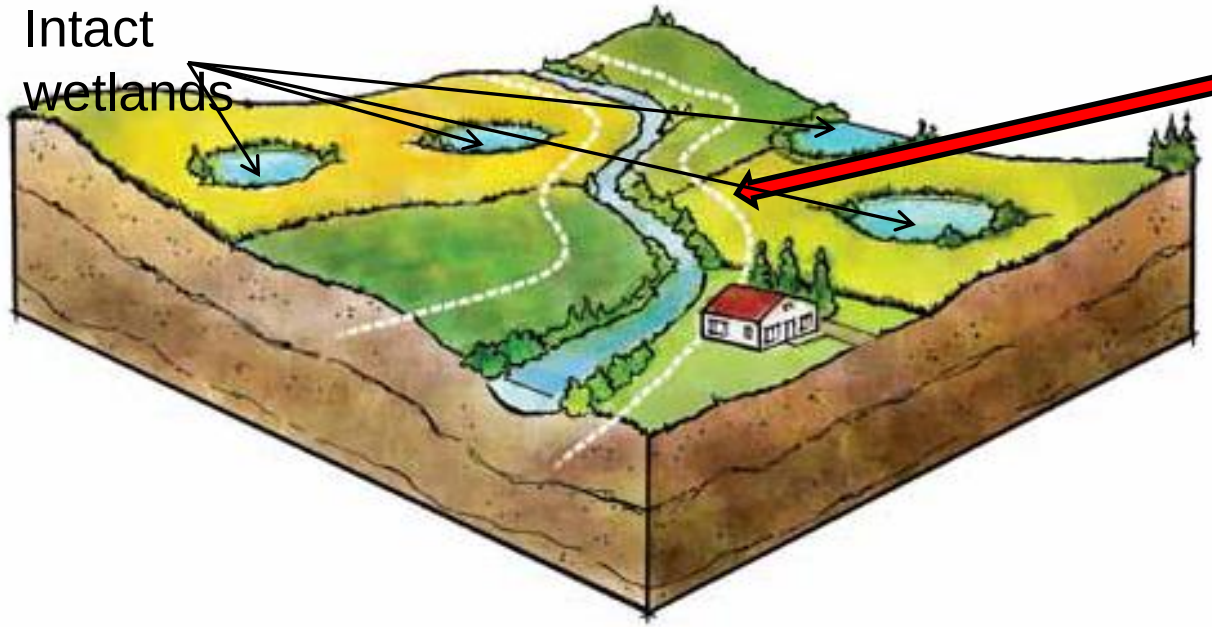


Wetlands act like giant sponges, capturing water, storing water, and slowly releasing it.

Conserving Canada's **Wetlands**

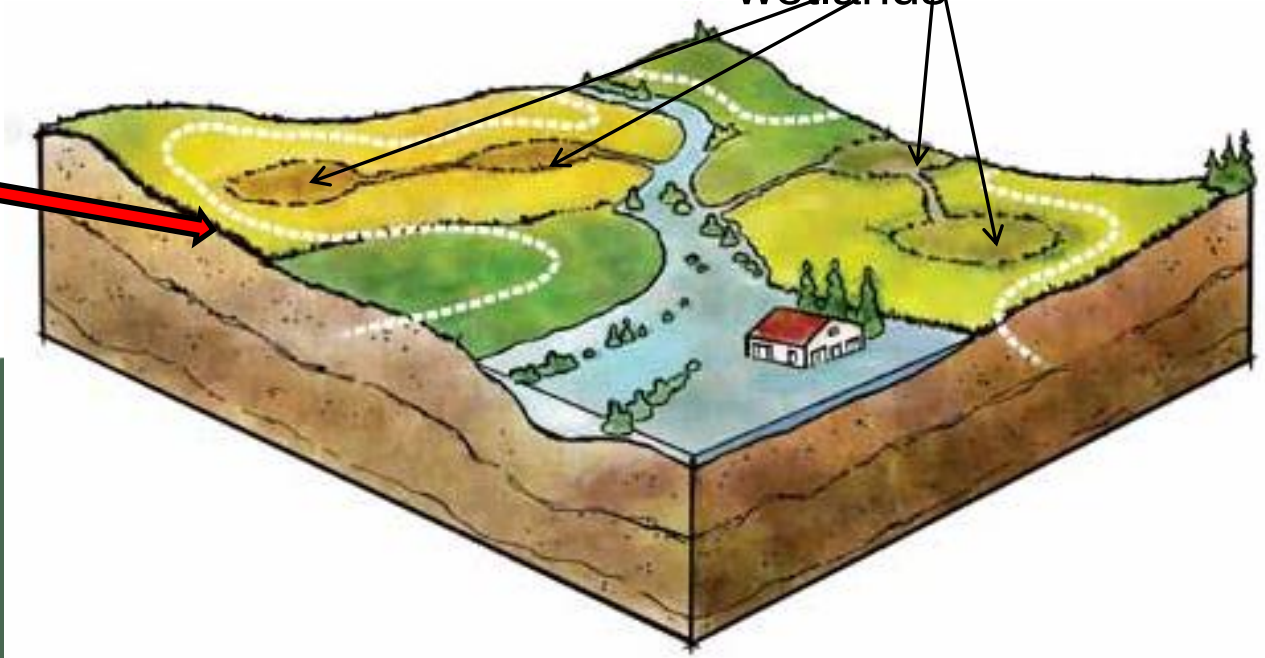
Intact wetlands

Historical Effective Drainage Area



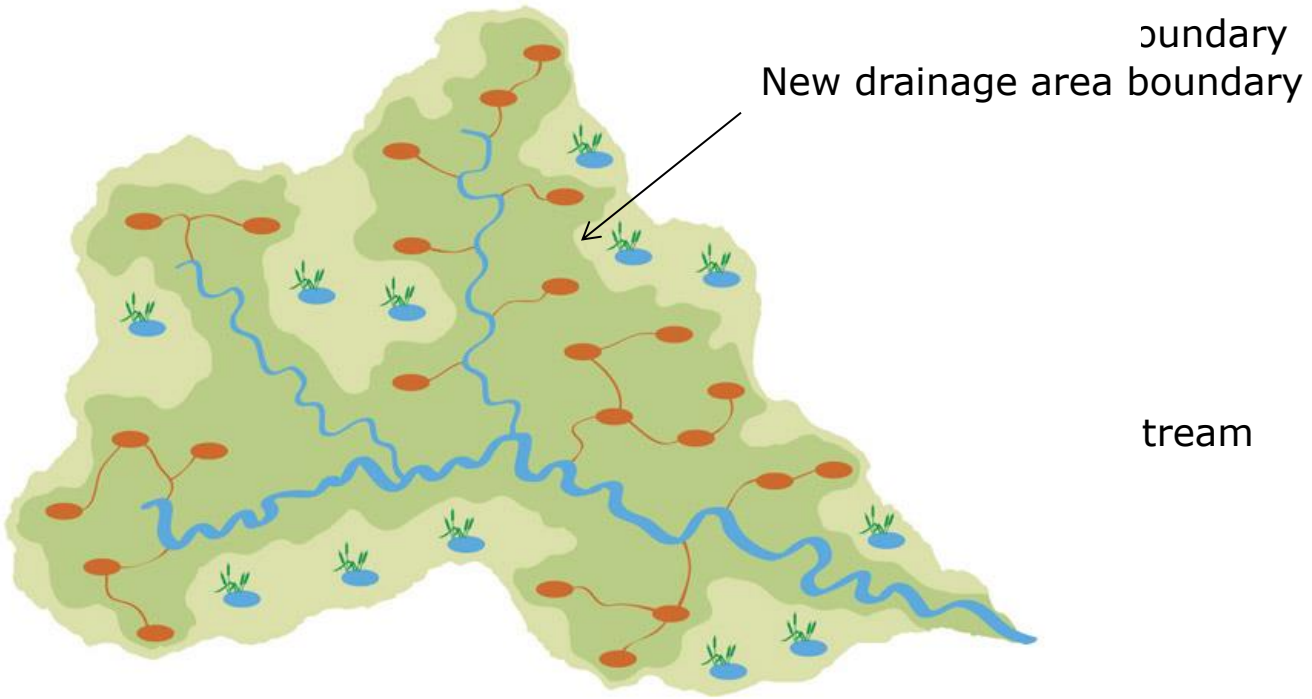
New Effective Drainage Area as a result of wetland drainage

Drained wetlands



Ducks Unlimited Canada
Conserving Canada's Wetlands

Hydrologic response to draining wetlands



Wetlands and natural areas continue to be lost at an alarming rate. Sask remains the only province without wetland conservation policies.

"In the Canadian Prairies, wetland drainage has resulted in the loss of more than 40 percent of natural wetlands. The impacts associated with this drainage are largely unmitigated".

Why Is It Important to Incorporate Wetland Benefits as Natural Infrastructure

- Leads to more efficient decision making
- Avoids overuse, loss, and ensures sustainability
- Ensures the continued generation of EGS
- Typically, more cost effective than grey infrastructure
- Provides multiple benefits

"Protecting wetlands isn't anti-development. It's about smart development and making better, more informed land use decisions"

Conserving Canada's **Wetlands**

"It's building with nature instead of concrete".

DUC Trusted Natural Solutions

Cost-effective means to fight climate change, create resiliency, and improve biodiversity

Wetland restoration

Conservation easements

Forage program

Revolving Land Conservation Program

Natural stormwater reservoirs and ponds

Capturing excess nutrients

DUC has constructed wetlands

Wetlands as Natural Solutions

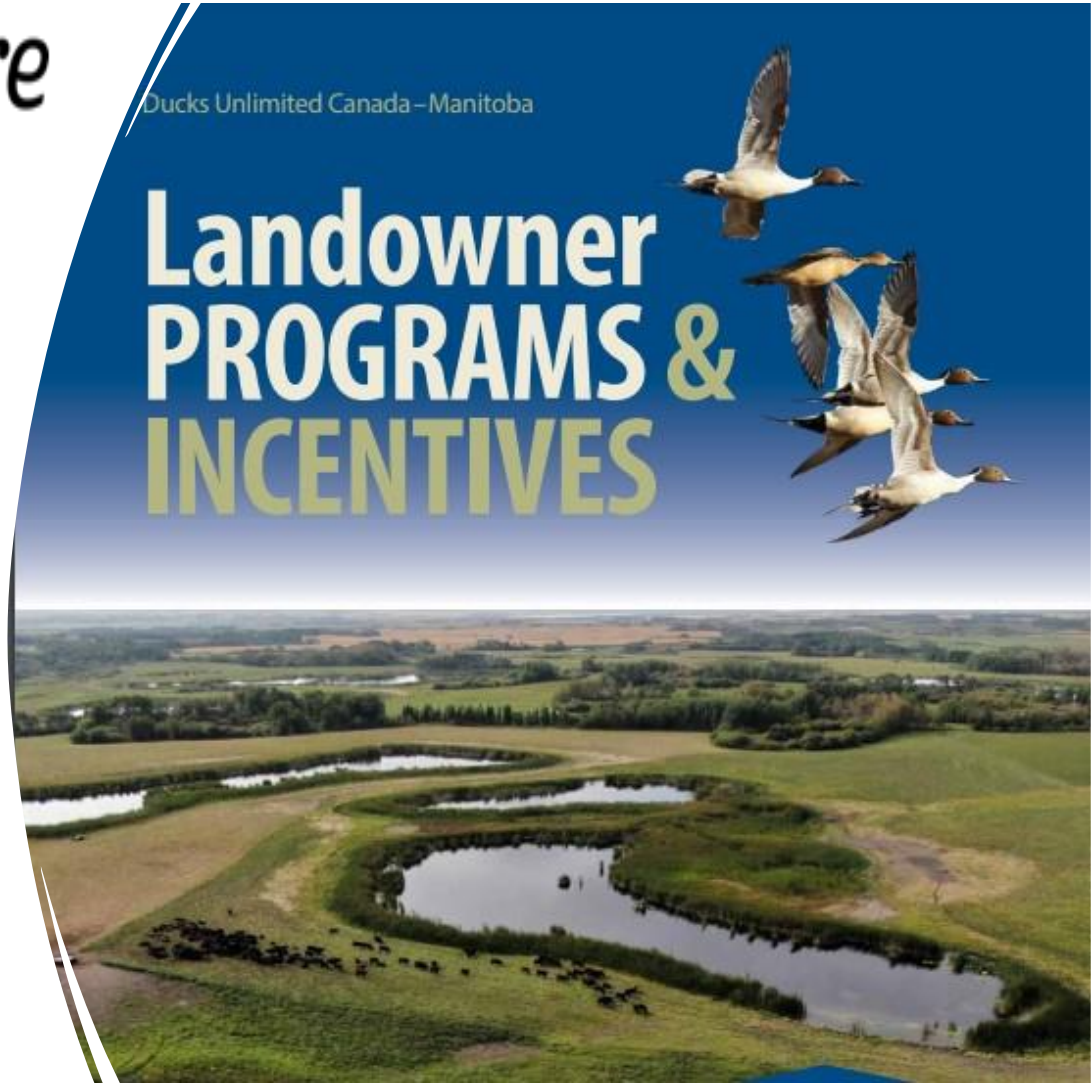
Water Control Projects

"Drought proofing the Prairies"

Agriculture

www.ducks.ag

- **Purchase of Land**
- **Long-term Lease**
- **Habitat Management**
- **Conservation Easements (CEs)**
- **Forage Programs**
- **Wetland Restoration**
- **Rangeland Programs**
- **Winter Cereals**



Conserving Canada's Wetlands

McKell Wascana Conservation Park

- 71-acre park space in the city of Regina dedicated to conserving and restoring native prairie and wetland habitat.
- Partnership with the City of Regina and the Bob McKell family.
- Groomed nature trails with interpretive stations and benches, a dock for pond dipping, and amphitheatre for educational programming.

Chappell Marsh Conservation Area and Hyde Park
RM of Corman Park

Conserving Canada's **Wetlands**

NATURE FORCE

- Nature Force: a new climate resilience initiative using natural infrastructure.
- Canadian insurance industry and funding community-based natural infrastructure projects in urban adjacent areas and upstream watersheds

Restoring the Lorette River Watershed to Reduce Flood Risks

- flows through Quebec City and the town of L'Ancienne-Lorette, has long been prone to flooding.
- Restoring wetlands, waterways, and surrounding natural habitats in the upper watershed
- increase water retention at the source, to reduce the risk of flooding downstream.

Conserving Canada's **Wetlands**

- Native grassland Restoration
- Naturalized stormwater systems
- Treatment wetland systems
- Remediation & restoration of altered lan
- Riparian zone restoration
- Green roofs
- Performance improvement solutions
- Environmental services

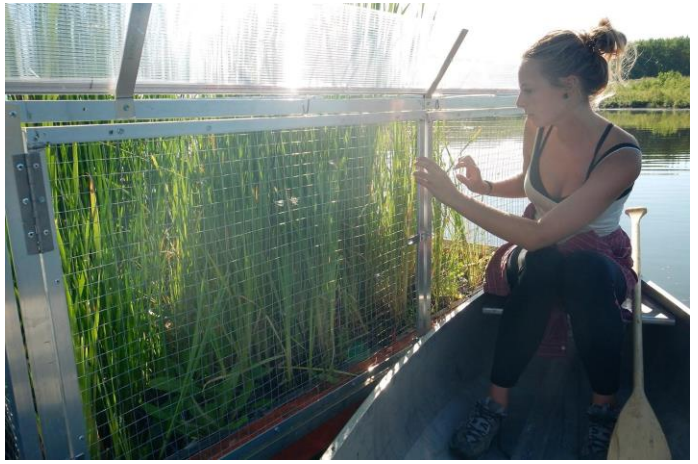
Swift Current - Old Man On His Back Prairie Heritage Conservation Area

- Hired by the Nature Conservancy of Canada to develop, design and implement a revegetation program native species on 1120 acres of cultivated land.
- Working ranch that also serves as a conservation area

Native Plant Solutions

Floating Cattail Bioplatforms

The Floating Cattail Bioplatform research project was designed to develop and evaluate an innovative new technology for the removal of phosphorus from natural wastewater systems, leading to its eventual commercial deployment.

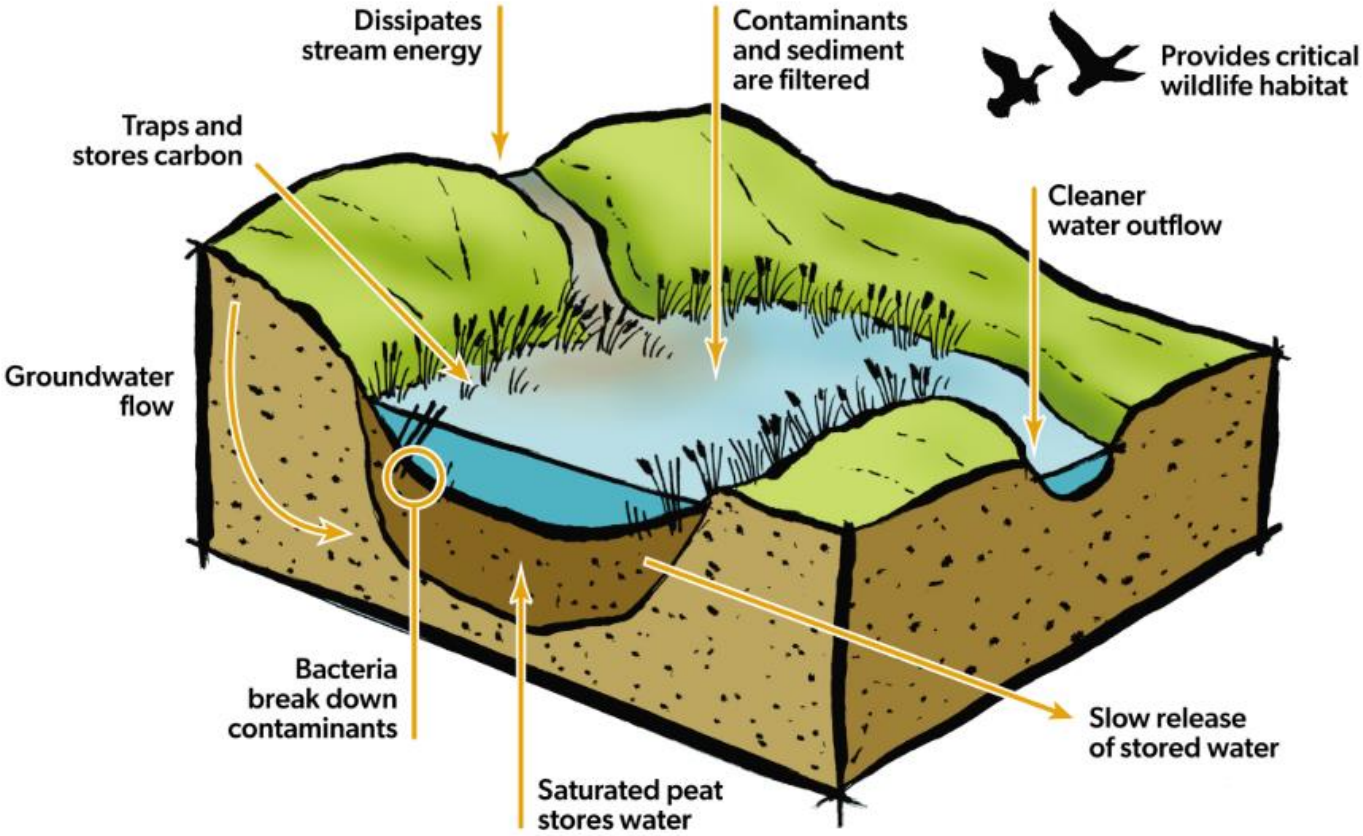


Yorkton, SK – Logan Green

- Settling ponds ensure filter backwash doesn't go through sewage system
- Green space
- Aquifer recharge

City of Yorkton

Natural Infrastructure protects communities from the forces of nature – by using nature itself.



NATURE FORCE

NATURAL INFRASTRUCTURE

Natural infrastructure is a win-win opportunity

Save money

Affordable natural infrastructure complements and extends the life cycle of built infrastructure (sometimes called grey infrastructure) such as municipal drains and conventional stormwater ponds.

Reduce damage

Wetlands slow the flow of water from runoff into rivers and lakes and lessen the impact of flooding.

Protect people

Wetlands are part of healthy landscapes that form buffers against the effects of extreme weather such as flooding, coastal storm surges and drought.

Retain carbon

Wetlands trap carbon and prevent its release into the atmosphere where it would contribute to climate change.

Supply clean water

Wetlands and their vegetation filter water, including removing excess nutrients that would otherwise find their way into streams, rivers and lakes and cause harmful algae blooms. They also store water, helping to protect against drought.

Promote tourism

Wetlands provide food and shelter to wildlife, and they're areas of natural beauty that draw outdoors enthusiasts. Those same qualities increase nearby property values.

Conserving Canada's ***Wetlands***

Want to learn more?
Visit us: www.ducks.ca

Ducks Unlimited Canada

Search: Français

Discover Conservation in Canada | Get Involved | Be Informed | About Us | Sign-up | Donate

Climate Change Resource Pack

Young people hear about climate change on a daily basis.

They know it's an urgent issue that's already having an impact on their lives, and will continue to affect our land, water, and air for years to come. That's why DUC is bringing climate change resources to teachers and students. Our activities help students learn how wetlands play a role in fighting climate change, how to work through emotions associated with climate change, and how we can take action together.

Chuck Deschamps
info@ducks.ca