

Restoration & Enhancement of the Vermilion River Watershed

Partnership is Key to Success

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& Dave Berry, President, Vermilion River Watershed Alliance



Vermilion River
WATERSHED ALLIANCE

The **Vermilion River Watershed Alliance** and
the **North Saskatchewan Watershed Alliance**
gratefully acknowledge our Vermilion River
Watershed Restoration & Enhancement Project
financial partners:

Watershed Resiliency &
Restoration Program



National Wetland
Conservation Fund

This project was undertaken with the financial support of:
Ce projet a été réalisé avec l'appui financier de :



Environment and
Climate Change Canada

Environnement et
Changement climatique Canada

EcoAction Community
Funding Program

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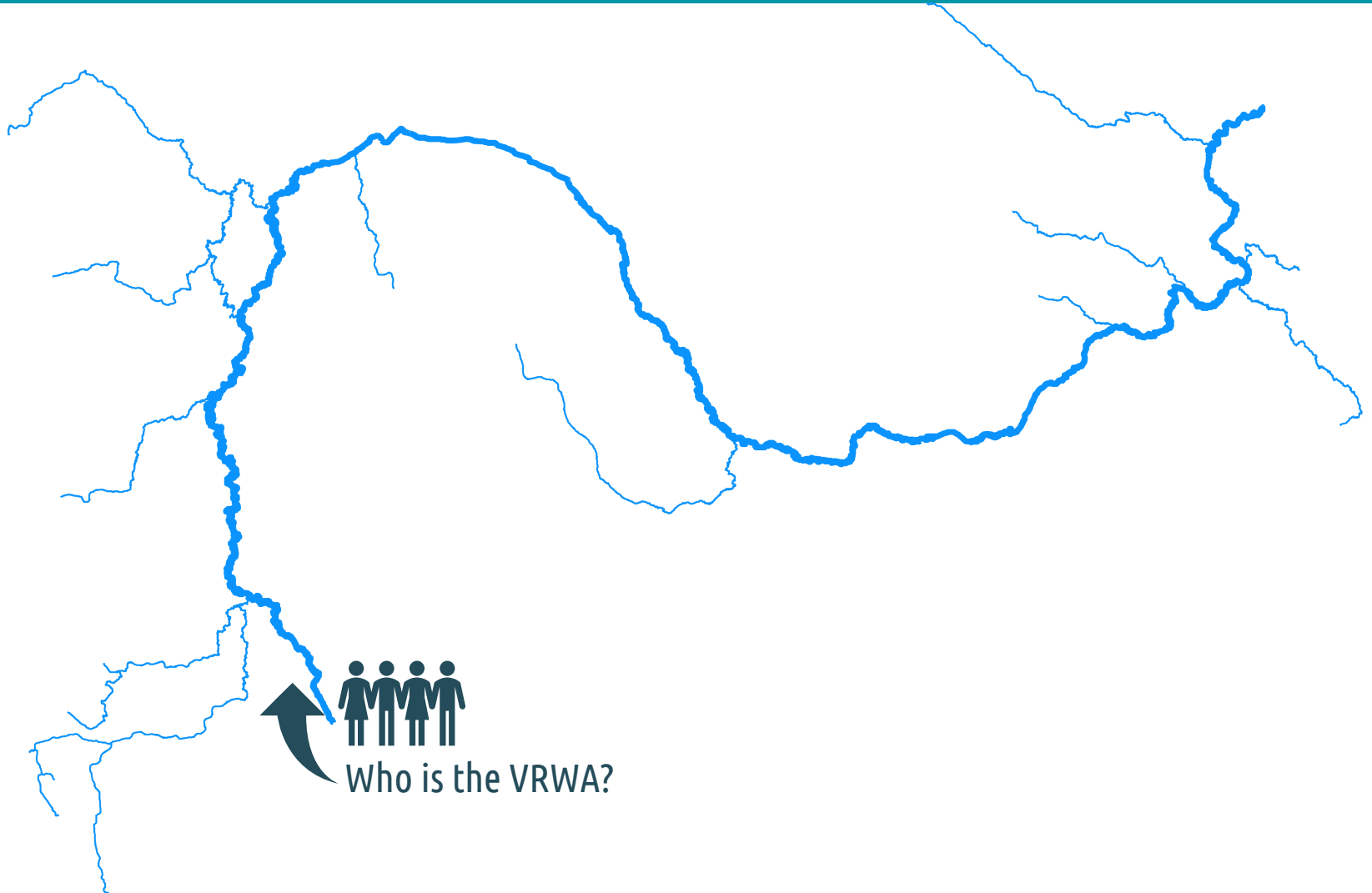


Also, thank you to many municipalities, counties, towns and villages for their
generous financial support of the NSWA and VRWA

Outline



Outline



Who is the VRWA?

Who is the VRWA?



Beaver Management Workshop 2018

- Local volunteers working side by side in the watershed



Lakeland Willow Staking 2018

Who is the VRWA?



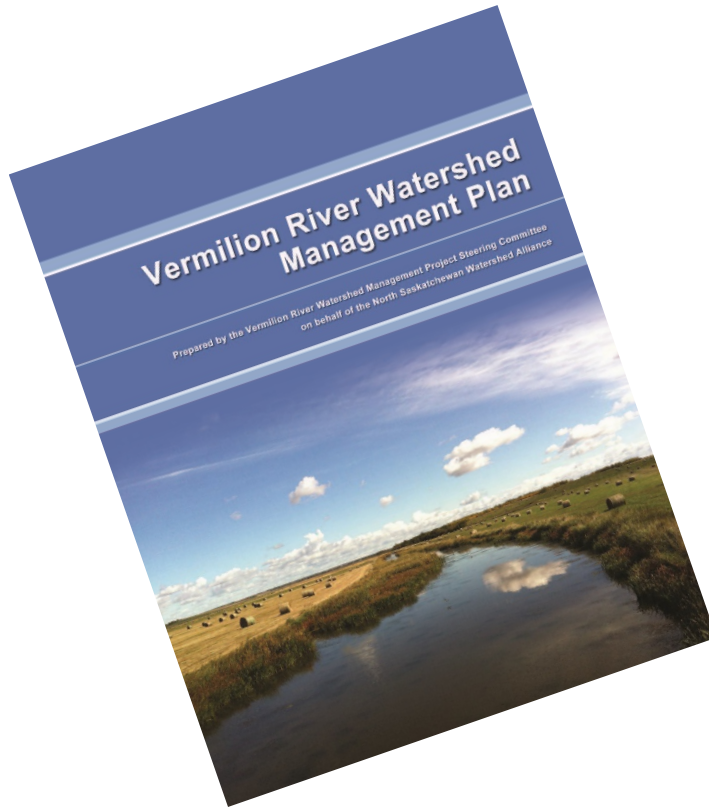
- Local volunteers working side by side in the watershed
- Incorporated as a non-profit society in 2015

Vermilion River Watershed Management Team, 2014

Who is the VRWA?



Guided by 2012 Vermilion River Watershed Management Plan



- Local volunteers working side by side in the watershed
- Incorporated as a non-profit society in 2015
- Members come from:
 - ✓ town and county councils
 - ✓ federal and provincial governments
 - ✓ conservation groups
 - ✓ the general public

Vision: The Vermilion River Basin is a healthy and sustainable watershed

Outline



What are our goals?



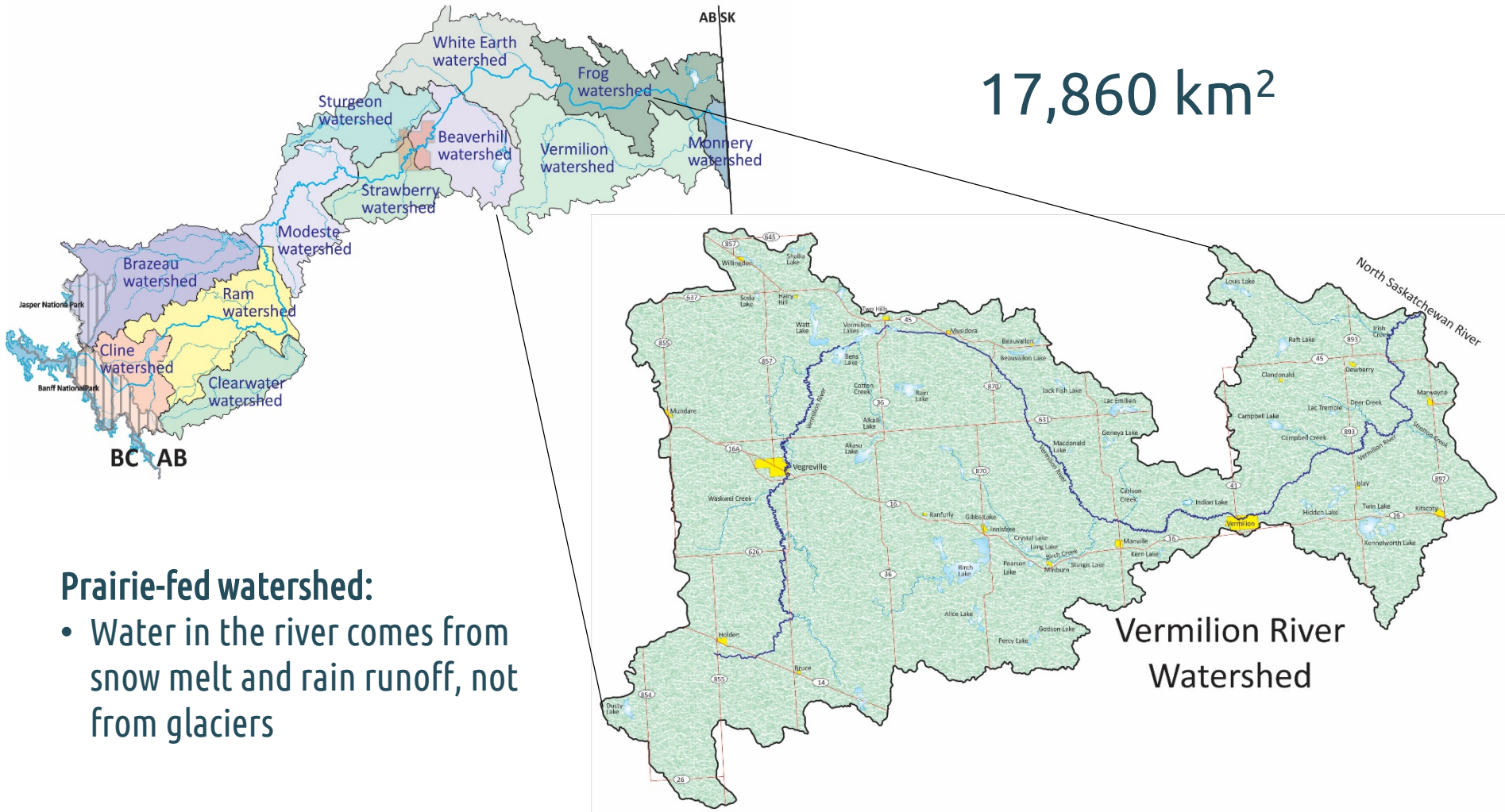
VRWA Activities Guided by VRWMP Goals

- Develop capacity and knowledge in the watershed
- Improve reliability of surface water supply
- Improve and maintain surface water quality
- Improve and maintain water ecosystem health
- Protect and sustain groundwater quality and supply

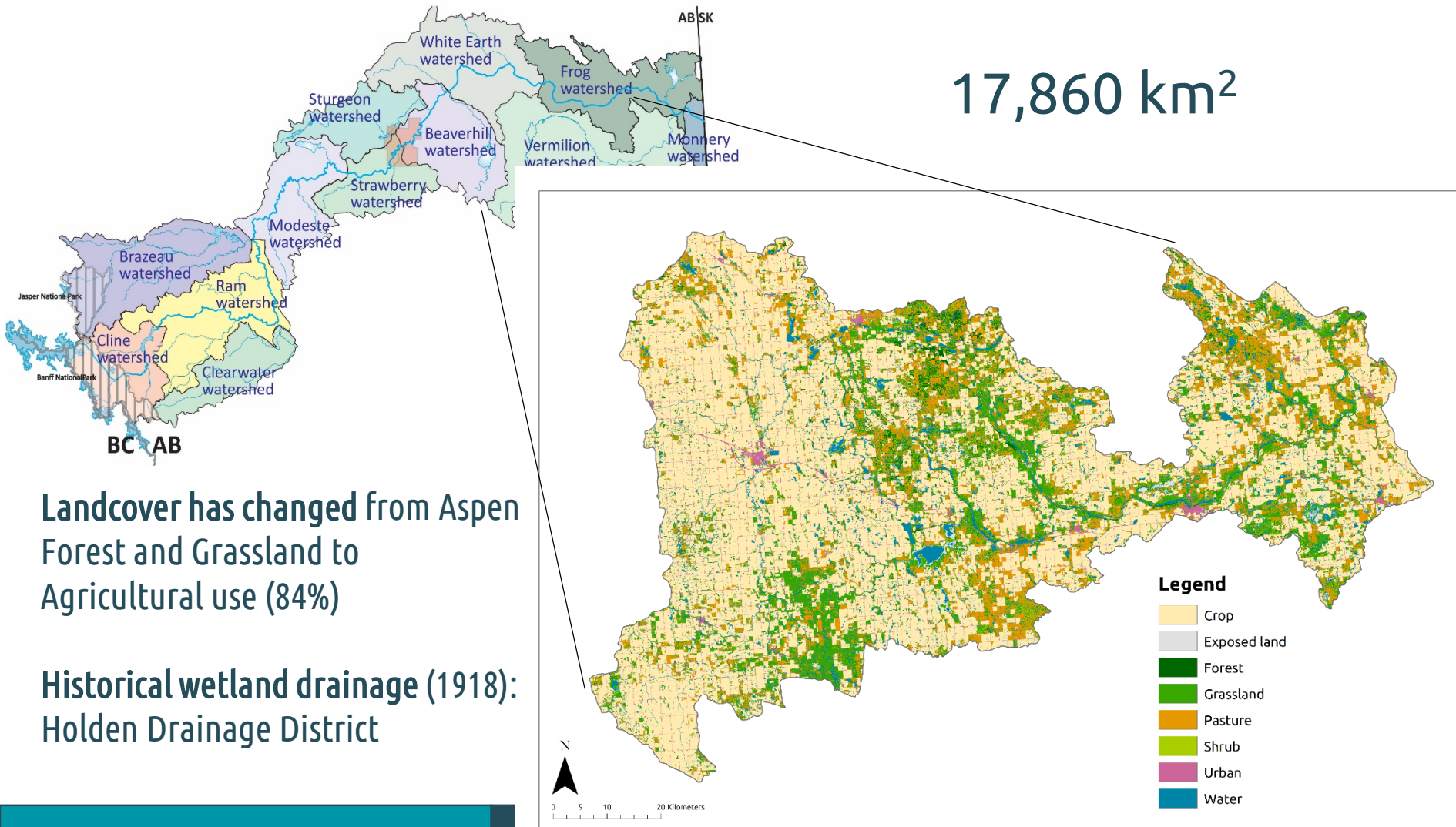


Vegreville River Revival Community Event 2019

Where is the Vermilion Watershed



Landcover in the Vermilion Watershed



State of the Vermilion Watershed



2005 State of the North Saskatchewan Watershed Report

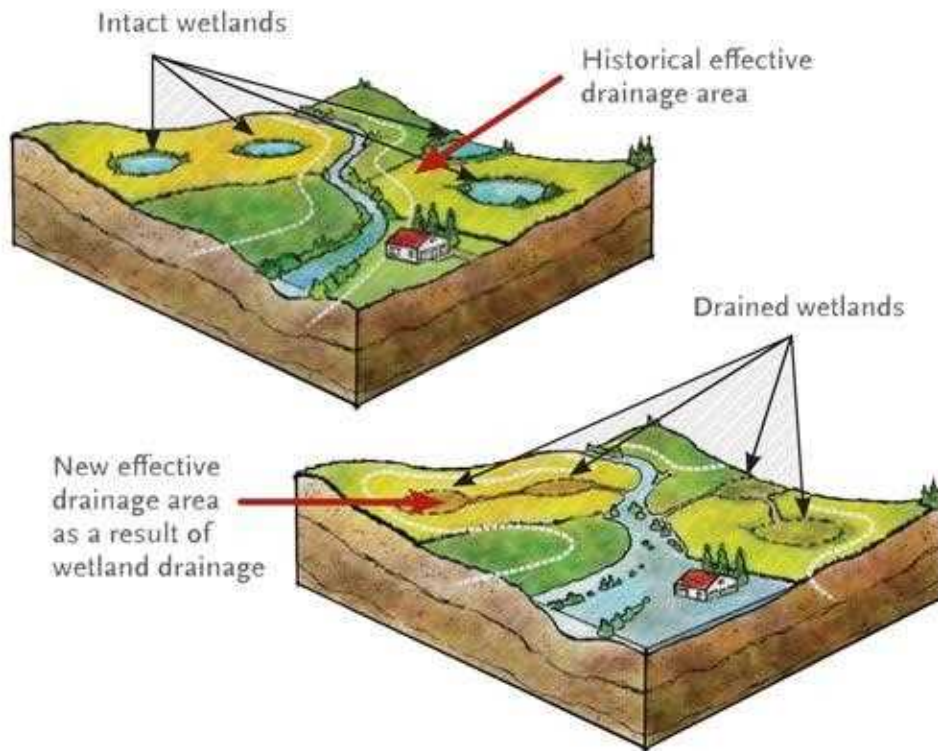


- Vermilion watershed one of the most altered within the NSR
- **Wetland drainage** biggest concern
- Health of the Vermilion watershed rated as “poor”
- Many knowledge gaps

State of the Vermilion Watershed



Concerns associated with wetland drainage:



Historically done to facilitate settlement and agriculture

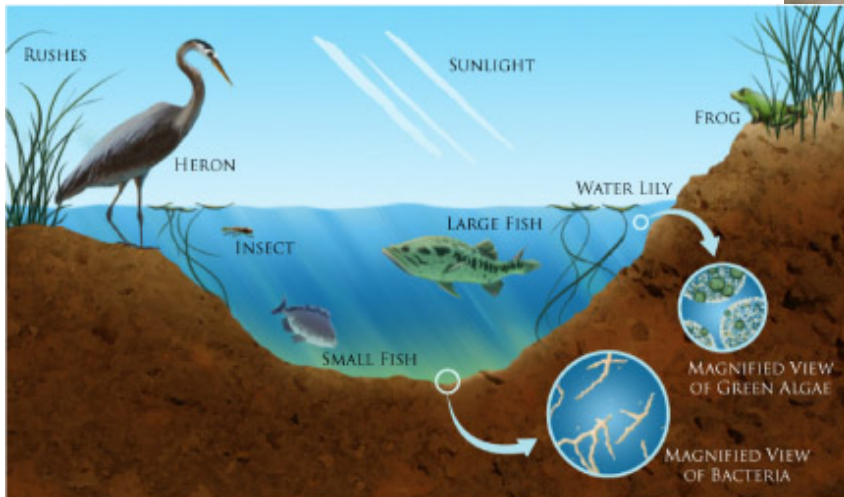
Extensive drainage of wetlands throughout the watershed has led to increased flooding events, reduced water storage, and reduced duration of water flow.

State of the Vermilion Watershed



Concerns associated with wetland drainage:

- Enhanced flooding
(Erosion, siltation, and riparian damage)
- Deterioration in water quality
(Nutrient and pollutant loading)
- Impacts on the aquatic ecosystem
(Changes in species diversity & abundance)



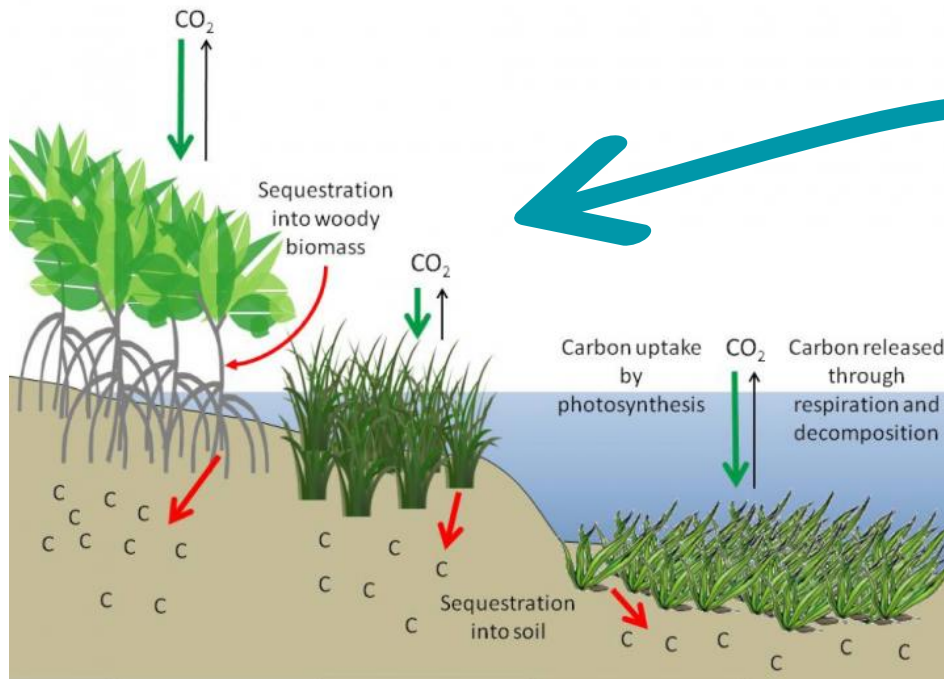
Pomeroy, et al., 2012

State of the Vermilion Watershed



Concerns associated with wetland drainage:

- Reduced climate mitigation



Riparian vegetation!

Howard, et al., 2017, Frontiers in Ecology and the Environment

State of the Vermilion Watershed



2015 Aerial assessment of the riparian areas of the Vermilion River and its major tributaries



- Aerial assessment and assessment maps are useful tools
- Ratings of riparian areas:
 - 19% good condition
 - 27% fair condition
 - 54% poor condition
- Riparian health trends vary between drainages

State of the Vermilion Watershed



2015 Vermilion River Aquatic Ecosystem Assessment



CPP
ENVIRONMENTAL
#154 - 100 Chippewa Road
Sherwood Park, AB, T8A 6A2
P: 780.570.5515
Charette
Pati
Desautels

The river, except for the lowest reach, ceases to flow in mid-to-late summer in most years, which dictates many ecosystem processes

Vermilion River: diverse in aquatic habitats and life, but generally an unhealthy system

- characteristic of a small, slow-moving mud-bottom prairie river
- widespread degradation of riparian areas and wetlands
- poor macroinvertebrate Family Biotic Index (FBI)
- fish, predominately tolerant species, indicative of poor habitat conditions

Outline



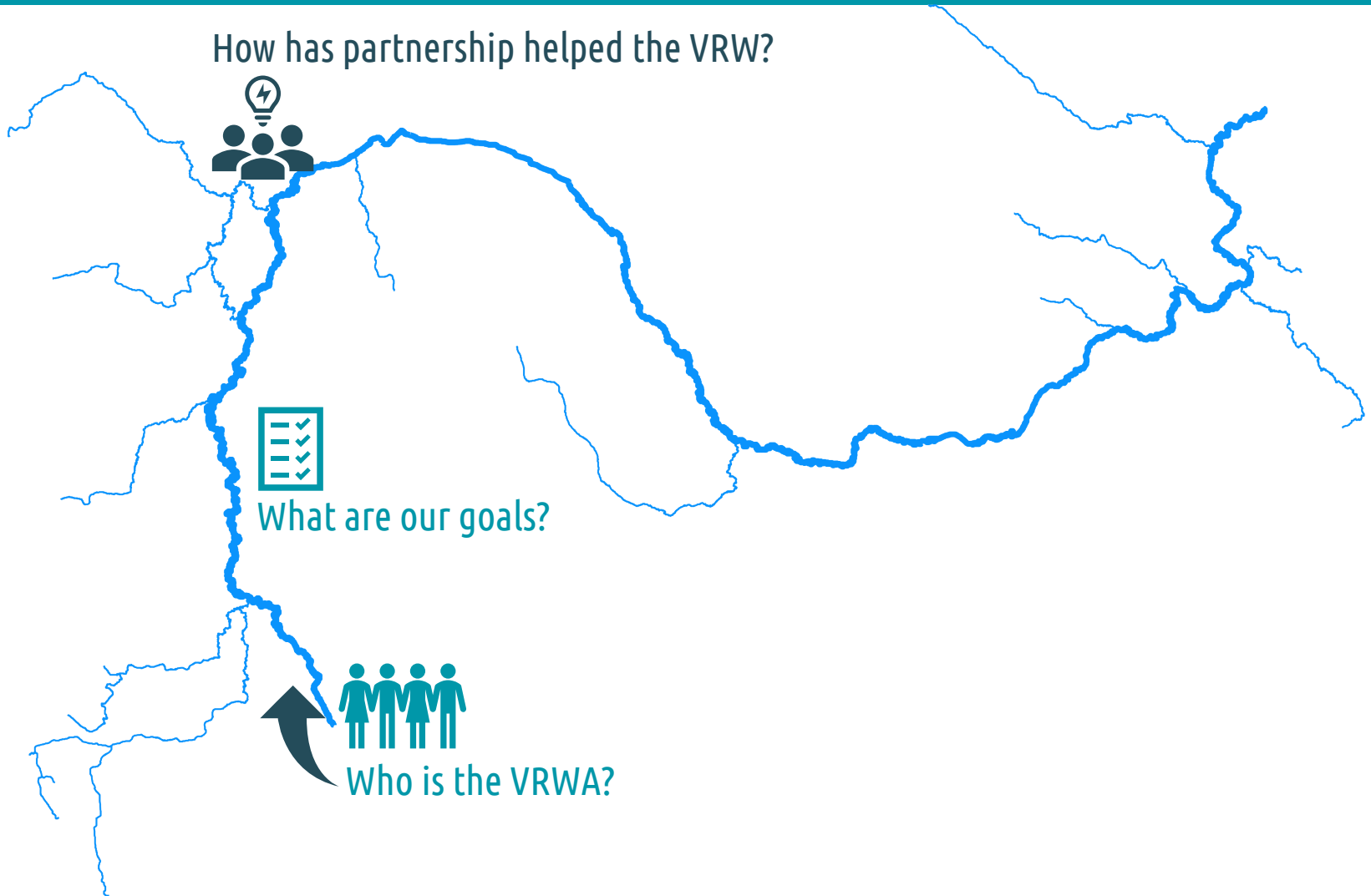
How has partnership helped the VRW?



What are our goals?



Who is the VRWA?



How has partnership helped the VRW?



VRWA Partners:

- North Saskatchewan Watershed Alliance (NSWA), and funding supporters, the City of Edmonton and EPCOR
 - Executive and Administrative assistance
 - Successful grant funding:
 - ✓ Government of Alberta Watershed Resiliency & Restoration Program (WRRP)
 - ✓ The National Wetland Conservation Fund (NWCF), Environment Canada
 - ✓ EcoAction Community Funding Program, Environment Canada
- partnering with ALCES, DUC and ALUS helped complete various projects on time
- partnering with COWS and FISH improved communication and education programs
- partnering with LAKELAND COLLEGE involving staff and students in aquatic studies
- partnering with LANDOWNERS, without whom success is not possible

How has partnership helped the VRW?



Example:

Vermilion River Watershed Restoration and Enhancement Project

5 Types of Projects



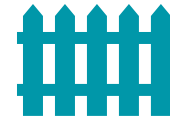
Wetland Restoration
refilling drained wetlands



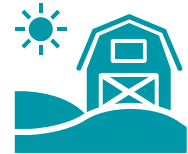
Off-Stream Watering Systems
a water line paired with a pump and trough



Revegetation
seedlings planted in bare patches



Fencing
To keep livestock out of riparian zones



Grass Buffers
planted between crops and riparian zones

How has partnership helped the VRW?



Vermilion River Watershed Restoration and Enhancement Project



3 Years



30 + Landowners



150+ Hectares Wetlands
Enhanced/Restored

20+ km Riparian Areas
Enhanced

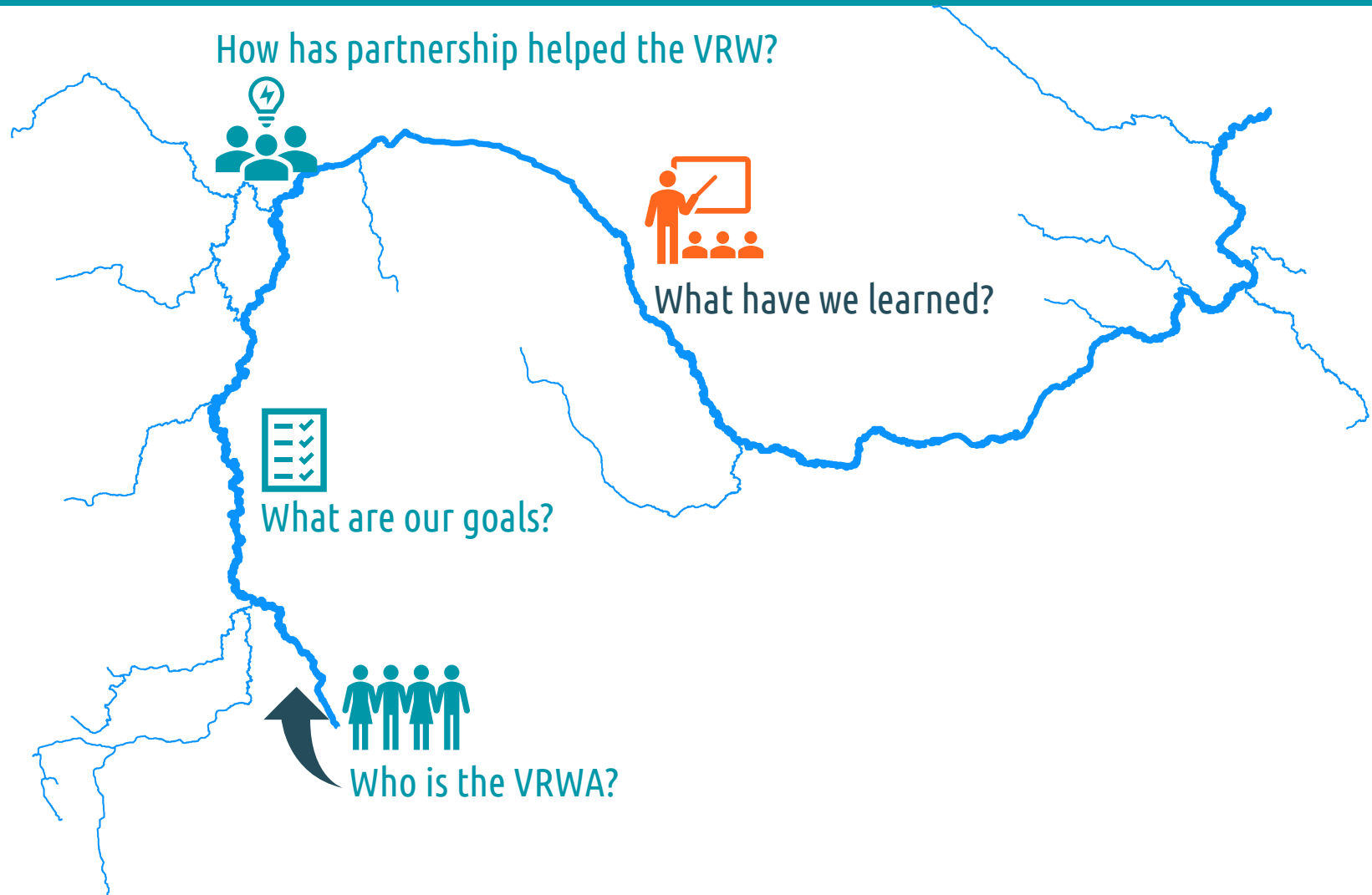
How has partnership helped the VRW?

Example: River Revival 2019—Birds, Bees and Butterflies

- A Riparian Eco-buffer of native trees, fruit-bearing shrubs and wildflowers in a pattern to become a strip of natural forest along the bank of the Vermilion River
- A demonstration site for the public to visit, learn, and understand the importance of protecting riparian areas and watersheds
- Improved habitat for wildlife such as birds and pollinators (bees and butterflies)
- A partnership between **VRWA**, **NSWA**, Agroforestry and Woodlot Extension Society (**AWES**), the **Town of Vegreville**, and **the public**



Outline



What have we learned?



The Vermilion River Watershed has been subjected to extensive alteration:

- wetland drainage, river channelization, landcover shift from aspen forest and grassland to agriculture, roads and municipal development

Alteration of the watershed's hydrology (including wetland drainage) has led to:

- increased flooding events, reduced water storage, reduced duration of water flow, erosion, siltation, nutrient and pollutant loading, shifts in aquatic species diversity and abundance

The Vermilion River has diverse aquatic habitats/biota, but unhealthy system:

- degradation of riparian areas and wetlands, poor macroinvertebrate FBI, fish predominately tolerant species indicating poor habitat conditions
- only 19% of riparian areas are in good condition, 27% in fair condition, and 54% are in poor condition
- wetland recovery, riparian buffers, and nutrient management are needed

Outline



What are the next steps?



Monitor the recovery of wetlands and riparian areas enhanced under the Vermilion River Watershed Restoration and Enhancement Project



Implement the water quality sampling partnership between VRWA/NSWA and Lakeland College



Continue to promote the Vermilion River Watershed Management Plan in order to:

- Improve reliability of surface water supply
- Maintain or improve surface water quality
- Maintain or improve aquatic ecosystem health



Develop and promote wetland and eco-buffer demonstration sites as education and information tools

SPRING 2020

TWO HILLS



Vermilion River
WATERSHED ALLIANCE

In partnership with:



COUNTY OF
TWO HILLS



AWES
Agroforestry & Woodlot
Extension Society



NSWA
NORTH SASKATCHEWAN
WATERSHED ALLIANCE

Stories of Stewardship

Join us in celebration of landowners who have worked to improve the health of the land and water in the Vermilion River watershed.

Friday | Mar. 27 | 5:30pm to 9pm

Red Feather Ridge, Vermilion, AB

FREE Community Event

FEATURING

Story telling

Info tables

Live music

Silent Auction

Prizes

Food and Beverages

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587-525-6829



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NSWA
NORTH SASKATCHEWAN
WATERSHED ALLIANCE



Thank You!



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