

Overview of Wetlands and Riparian Areas in the Red Deer River Watershed

Image: Cows and Fish



March 4, 2026
RDRWA
Spring Forum



Wetlands

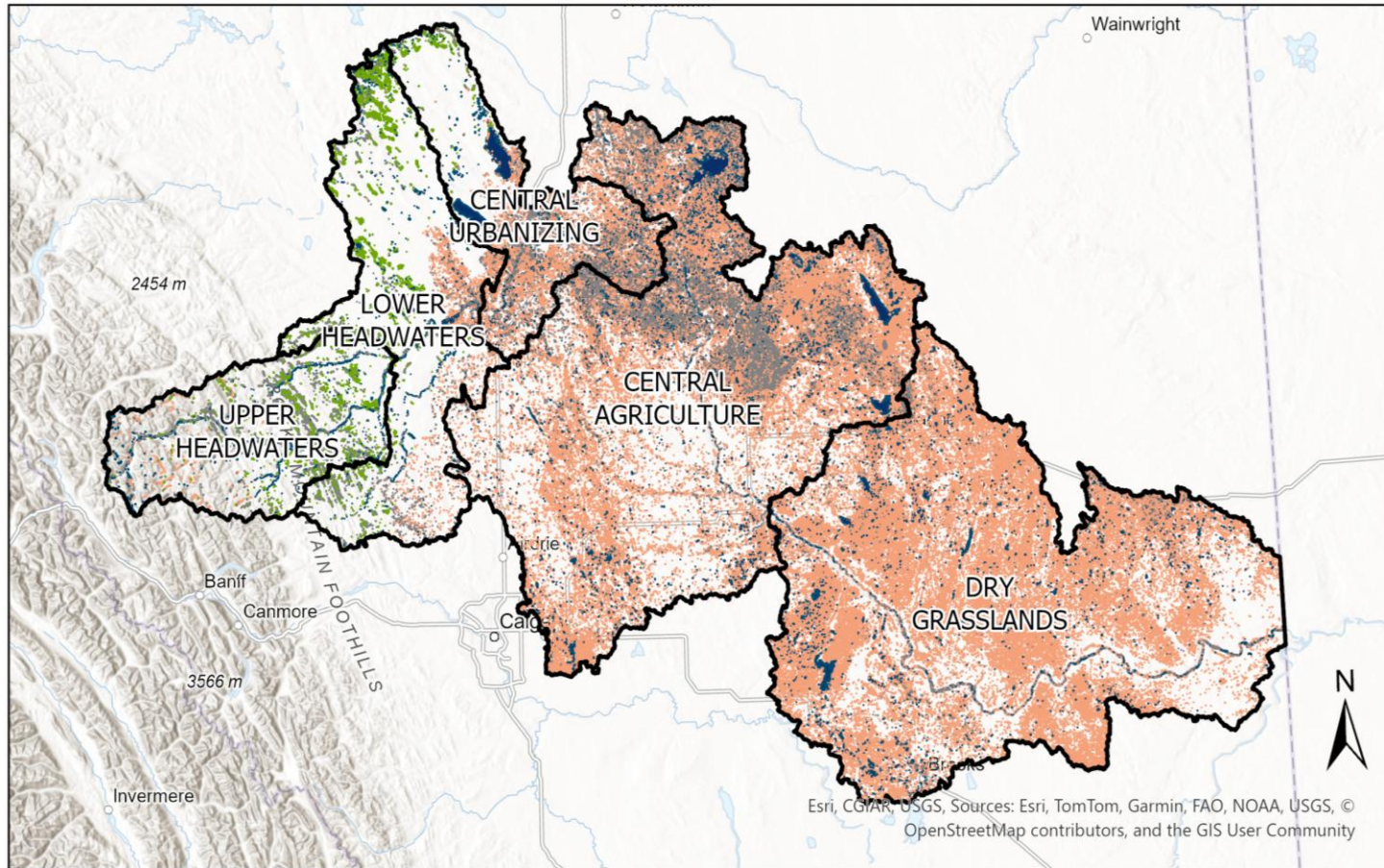
Land that is saturated with water, either permanently or temporarily

- **Flood mitigation**
- **Aquifer recharge**
- **Biogeochemical cycling**
- **Wildlife habitat provision**
- **Outdoor recreation**
- **Environmental education**



Photo Credit: Ducks Unlimited Canada

Wetland Distribution in the Red Deer River Watershed



Wetland Class	Distribution (%)
Marsh	2.77
Shallow Open Water	1.75
Swamp	0.51
Fen	0.37
Bog	0
Total	5.4

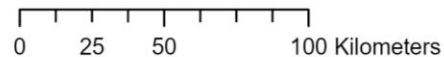
Small in area, but mighty in function!

Highly productive

Important for drought mitigation

Wetland Class

- Fen
- Marsh
- Open water
- Swamp



Riparian Areas

Transition zone between a waterbody and its surrounding upland

- **Fish and wildlife sustenance**
- **Water quality improvement**
- **Erosion control**
- **Flood and drought resilience**

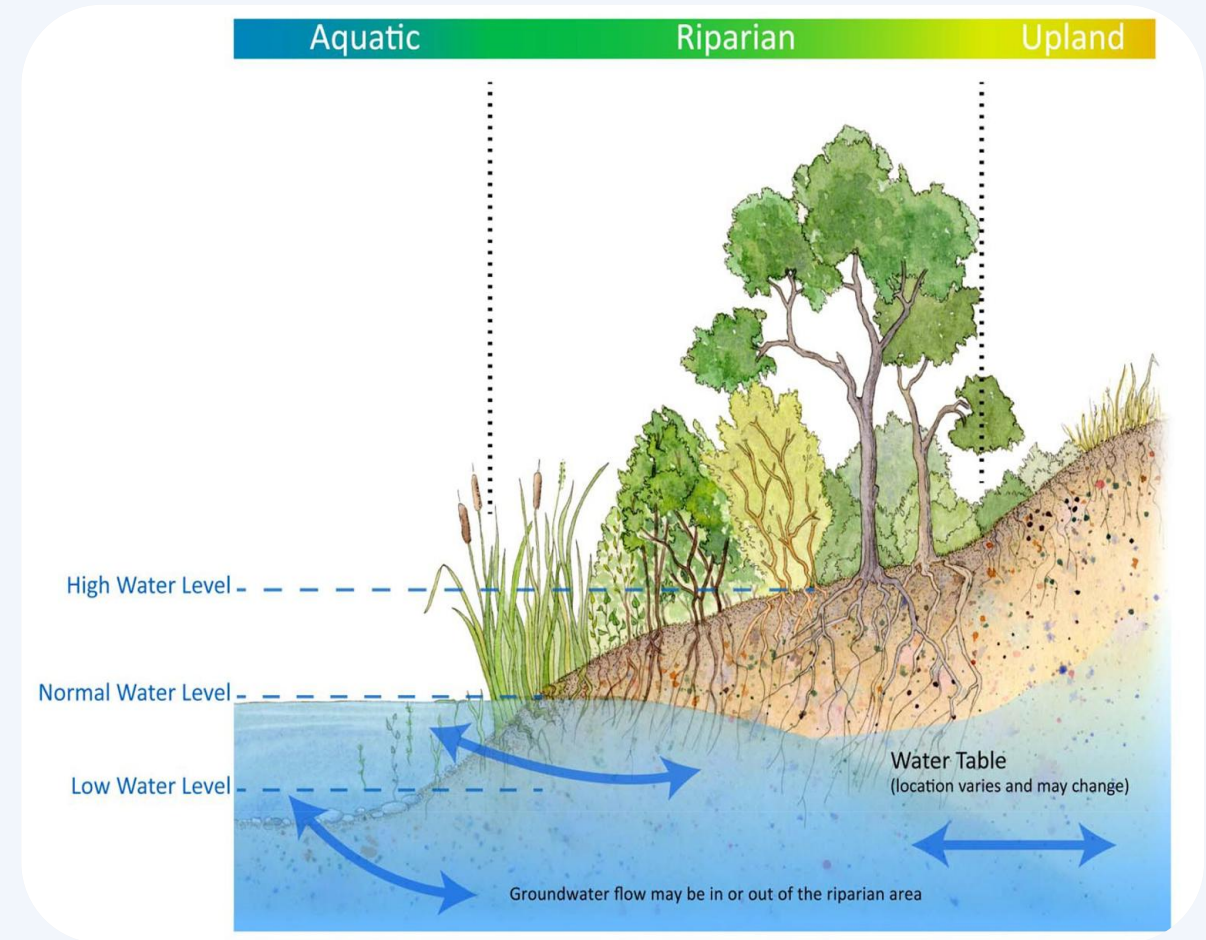


Photo Credit: Cows and Fish

Methods for Assessing Riparian Area Condition

Assessment area increases
Cost per kilometer decreases



Field-based Method
~1 kilometer per assessment



Aerial Videography Method
~100 kilometers per assessment



Satellite Data Method
~1000 kilometers per assessment

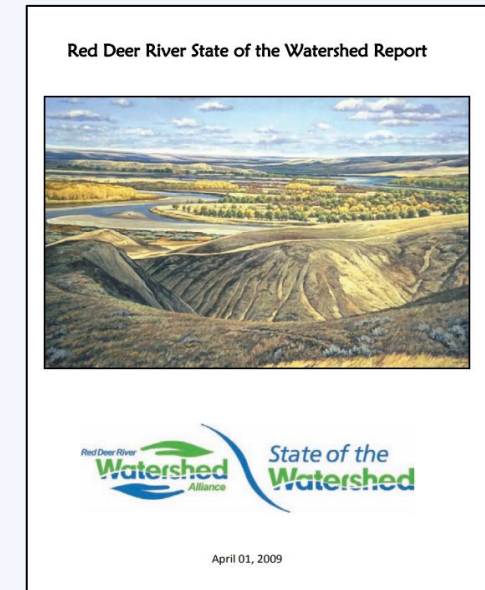
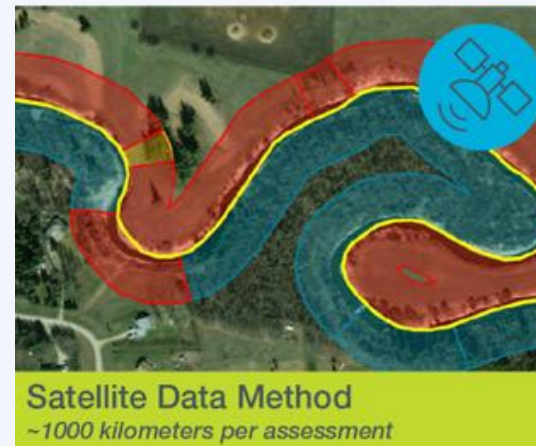


Ability to observe detail (resolution) increases
Ability to engage landowners increases

Methods for Assessing Riparian Area Condition

2009 State of the Watershed Report identified a lack of data on riparian area condition

- 2016 Integrated Watershed Management Plan recommended targeted actions to address data gaps
- Funding support from the Watershed Restoration and Resiliency Project
- Collaboration with many partners



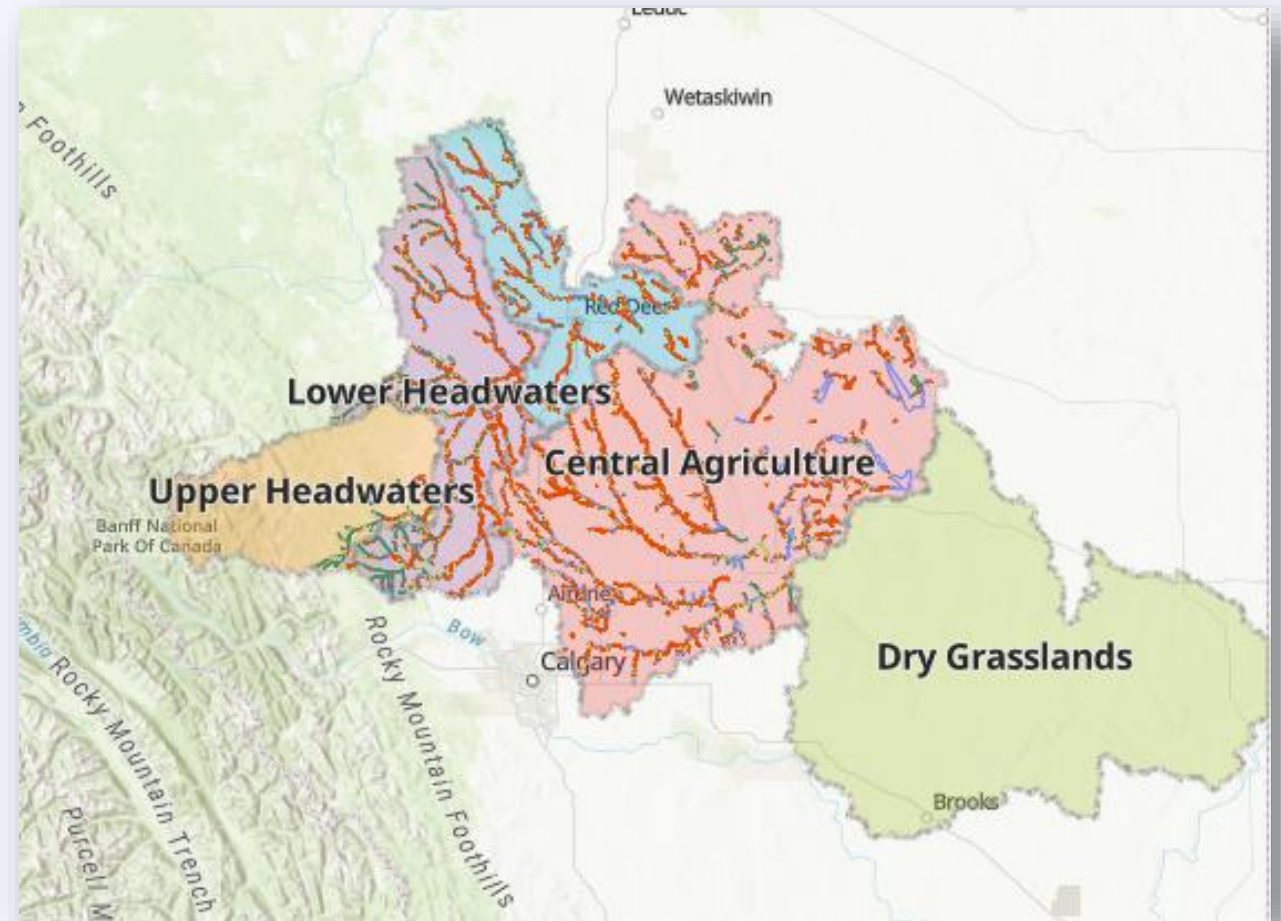
Riparian Intactness

Fiera Biological Consulting

>12,000 km of shoreline
assessed between 2018-2023



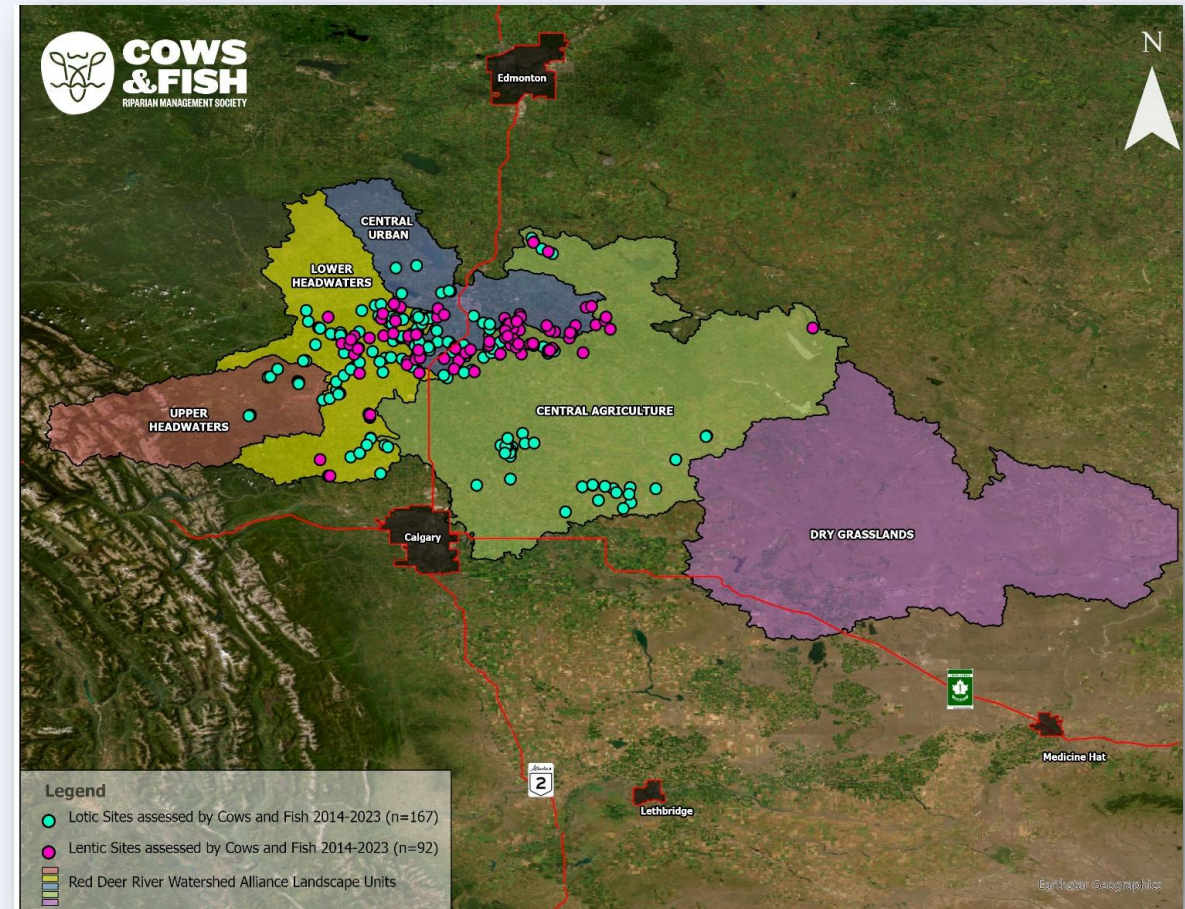
Photo Credit: Fiera Biological



Riparian Health

Cows and Fish

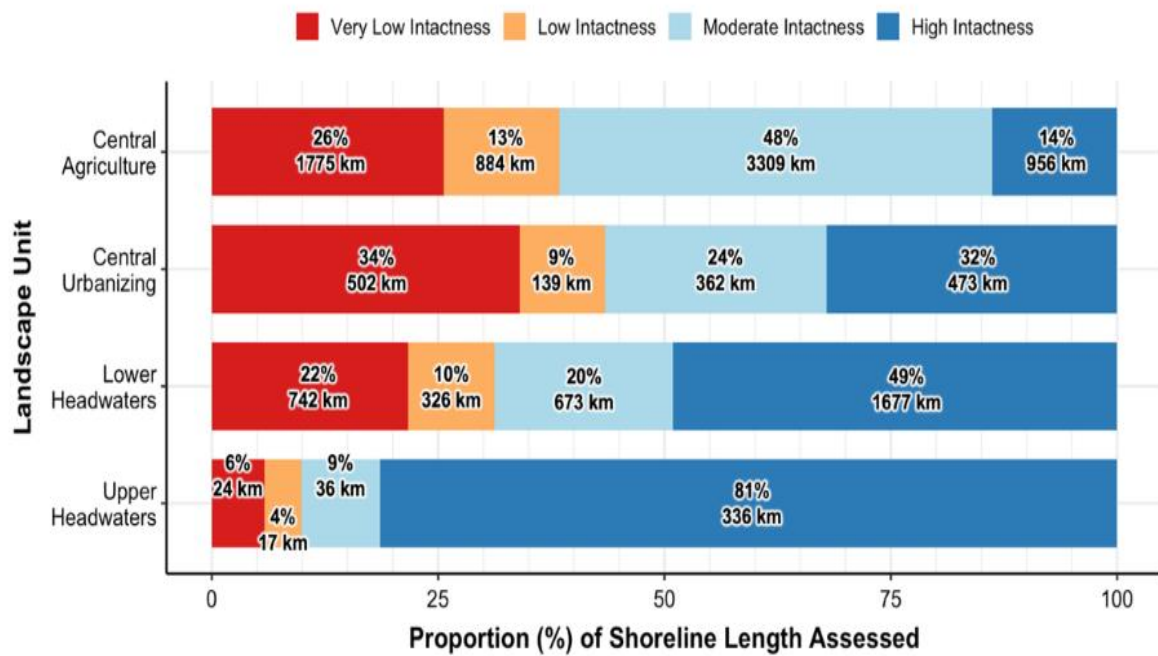
250 local sites assessed
between 2014-2023



Health Category	Score Ranges	Description
Healthy	80-100%	little to no impairment to any riparian functions
Healthy but with problems	60-79%	some impairment to riparian functions due to management or natural causes
Unhealthy	<60%	severe impairment to riparian functions due to management or natural causes

Riparian Area Condition (Basin Wide)

RIPARIAN INTACTNESS

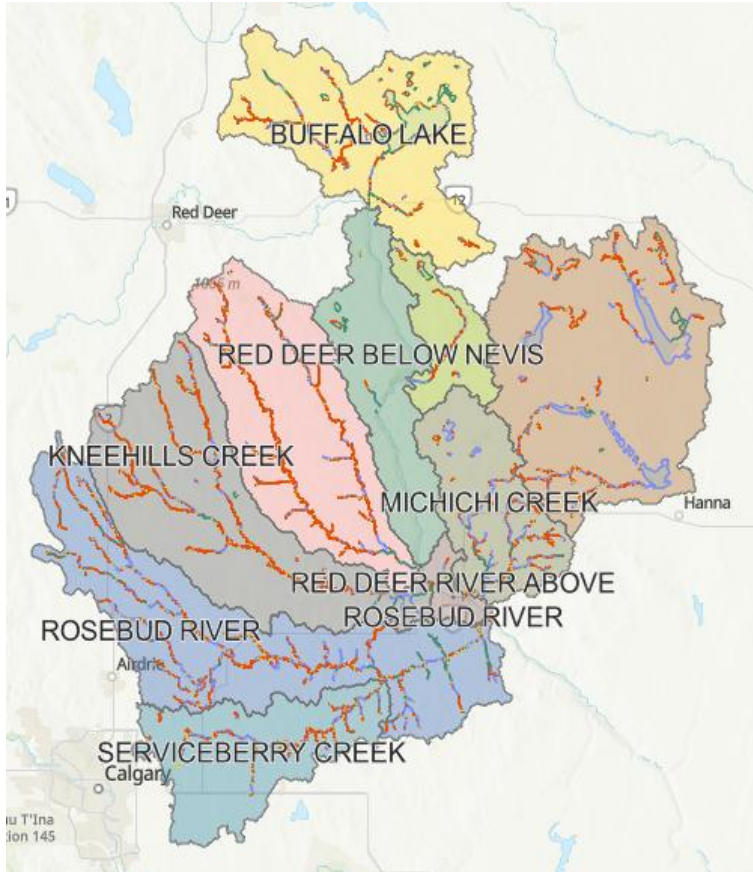


RIPARIAN HEALTH

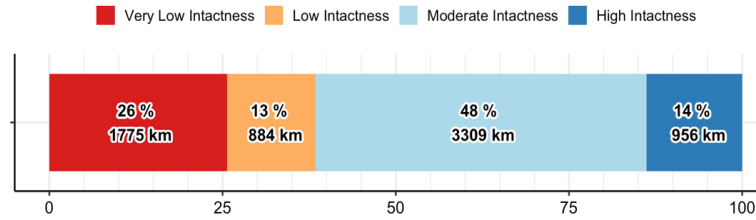


Riparian Area Intactness (Central Ag) *example*

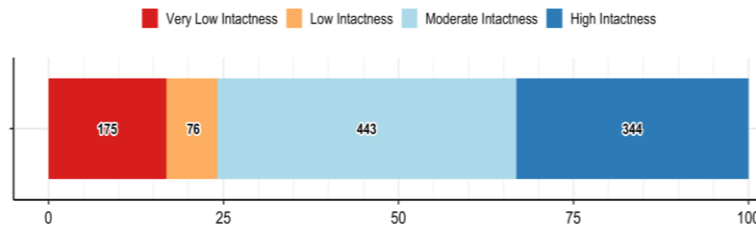
RIPARIAN INTACTNESS



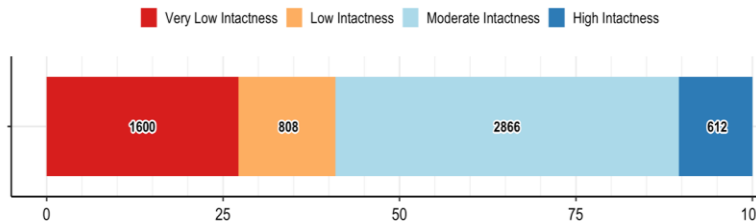
Overall



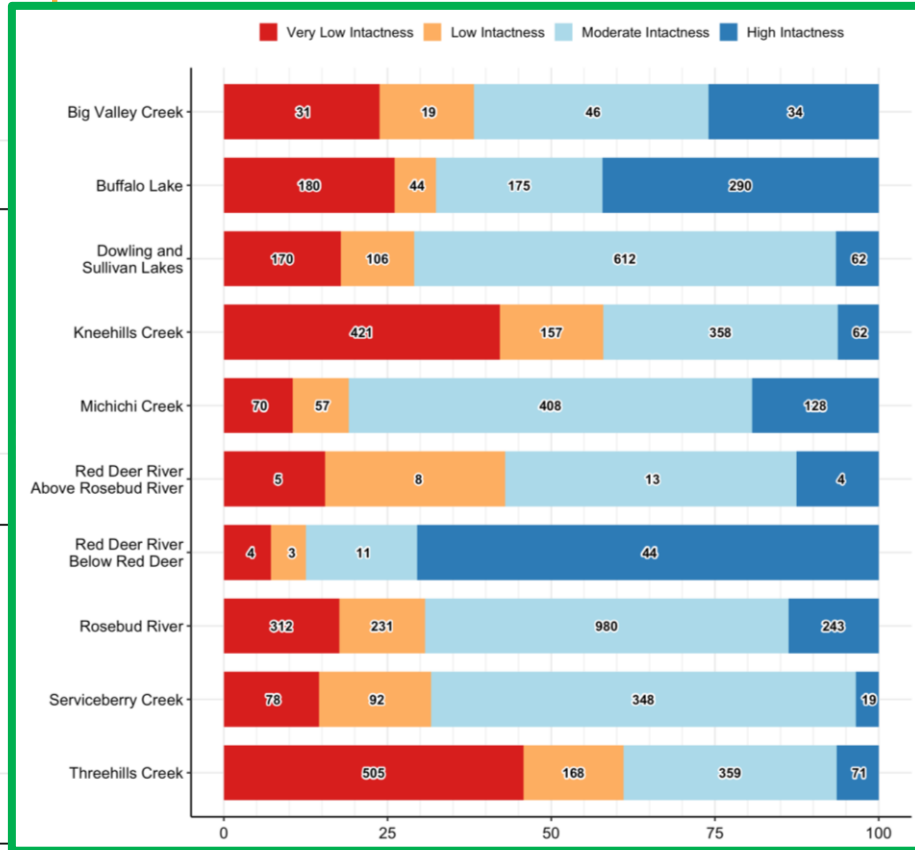
Lakes and Reservoirs



Streams and Creeks



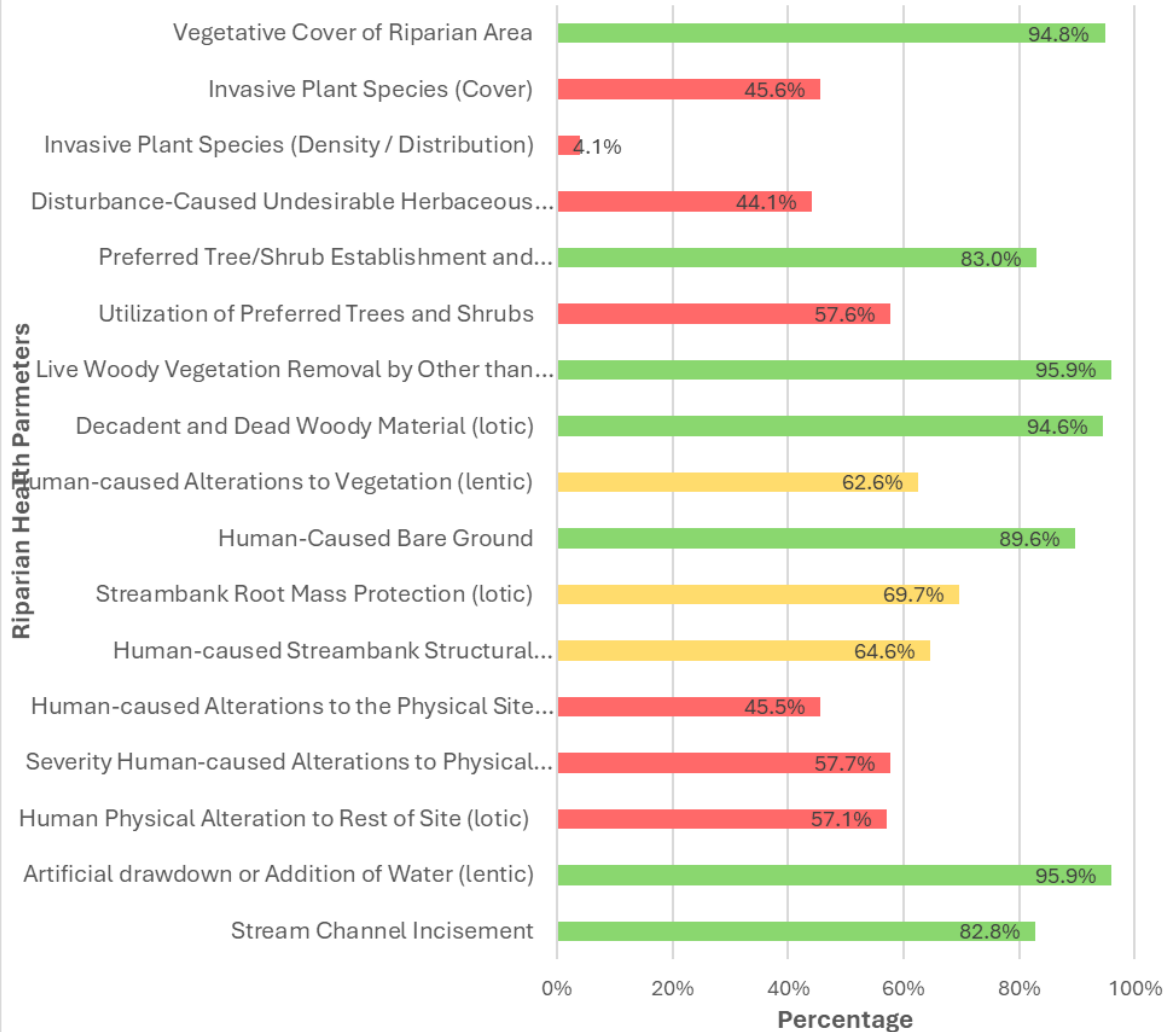
Subwatersheds



Riparian Area Health (Central Ag) *example*

RIPARIAN HEALTH

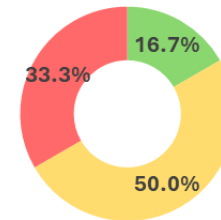
Central Agriculture Landscape Unit: Evaluation of Riparian Health Parameters 2014-2023 (n=90)



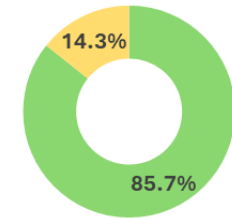
Riparian Health in the Central Agriculture Landscape Unit (n=90)	Percent of Sites	Number of Sites
Healthy	26.7%	24
Healthy but with Problems	52.2%	47
Unhealthy	21.1%	19
Total	100.0%	90

Subwatersheds

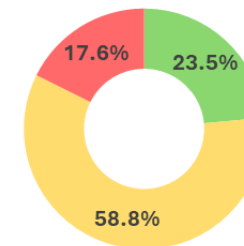
Kneehills Creek Watershed (n=18)



Buffalo Lake Watershed (n=7)



Rosebud River Watershed (n=12)



Riparian Area Condition (Central Ag) *example*

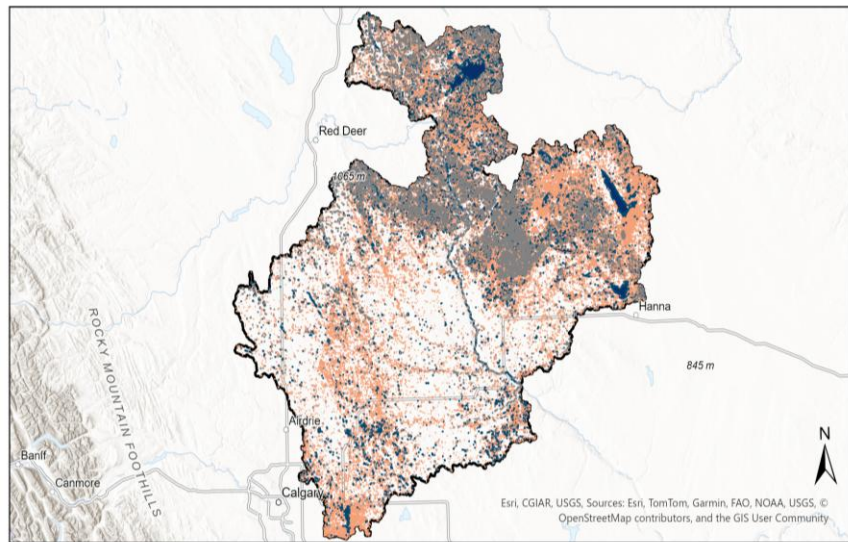


Rosebud River

Photo Credit: Alberta Wilderness Association

RIPARIAN HEALTH in the Central Agriculture WMZ (n=90)	Percent of Sites	Number of Sites
Healthy	26.7%	24
Healthy but with Problems	52.2%	47
Unhealthy	21.1%	19
Total	100.0%	90

WETLAND DISTRIBUTION

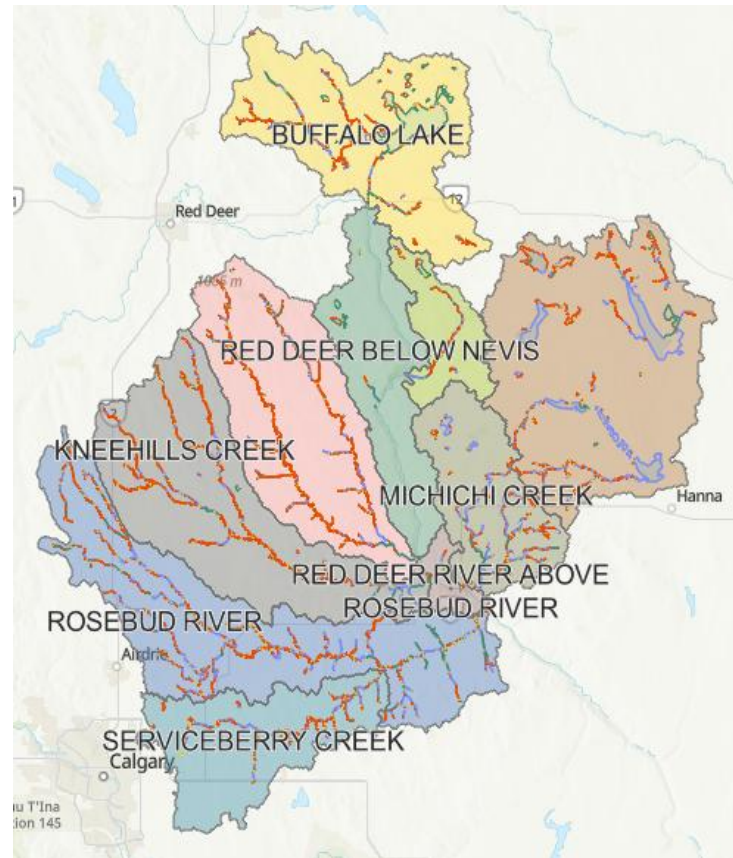


WetlandClass
 Fen
 Marsh
 Open water
 Swamp

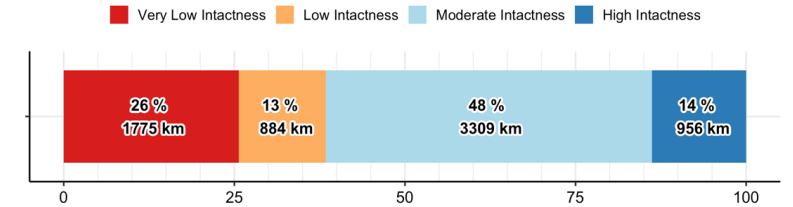


0 12.5 25 50 Kilometers

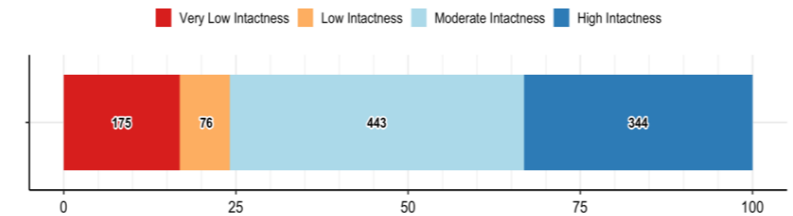
RIPARIAN INTACTNESS



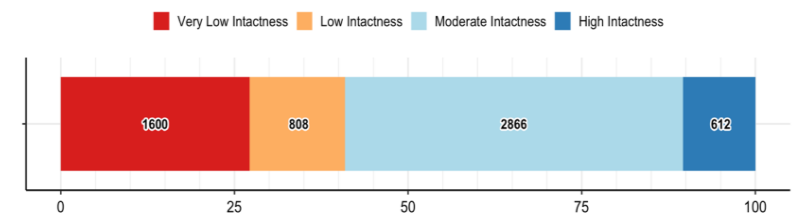
Overall



Lakes and Reservoirs



Streams and Creeks



Working Conclusions

Across the basin...

- Marshes > swamps > shallow open water > fens
- **Identified opportunity to develop a comprehensive wetland inventory**
- Integrated monitoring efforts for riparian condition support **effective watershed planning and management**
- Riparian areas in highly impacted zones should be targeted for restoration to improve both **intactness** and **health**
- Riparian areas with **High Intactness** should be conserved and protected, with targeted actions to further enhance **health** where needed

*“The land is the real teacher, all we need as students is mindfulness”
Dr. Robin Wall Kimmerer*