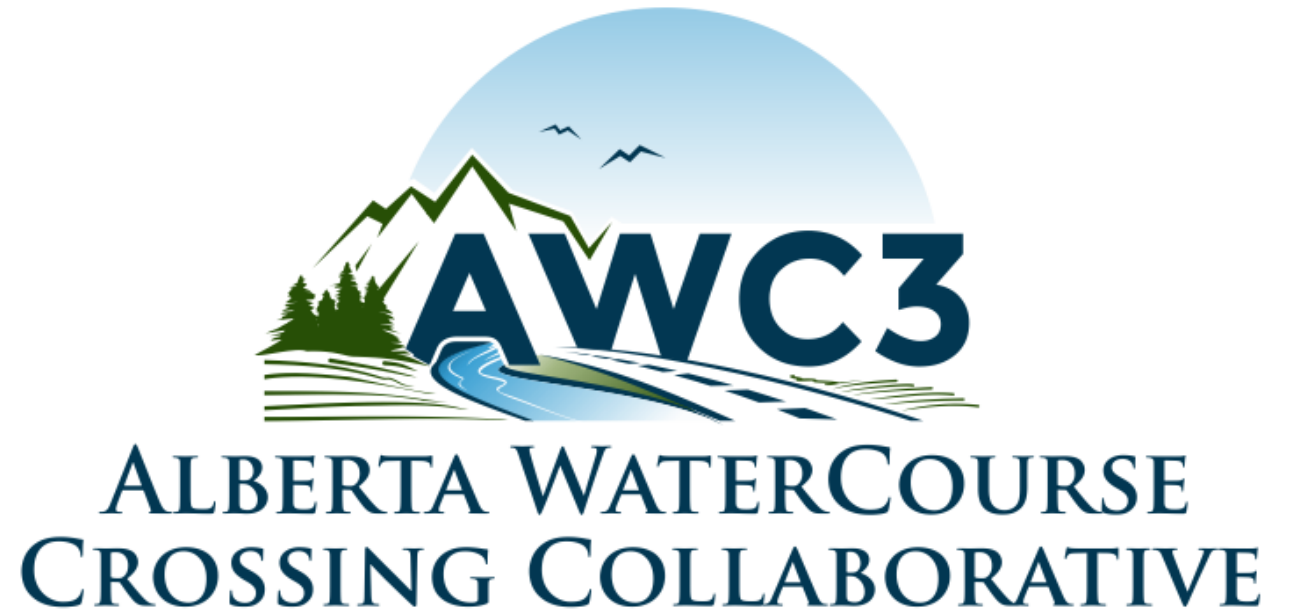


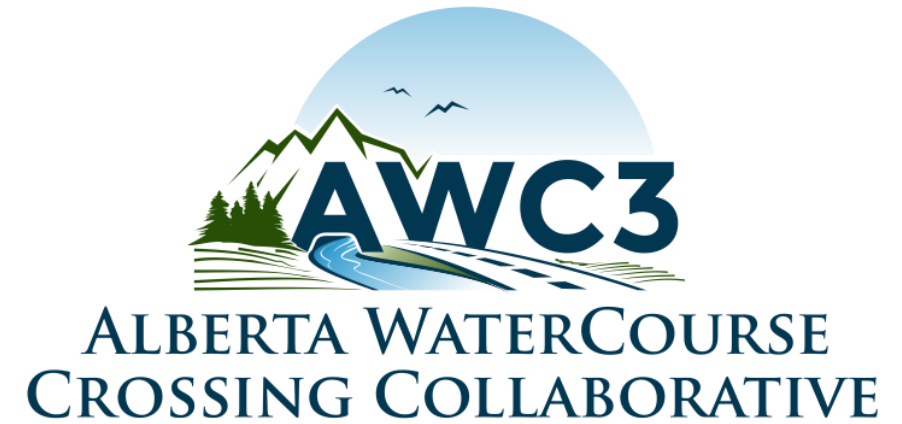
Watercourse Crossing Restoration

A collaborative approach



Presentation Outline:

1. What is the RWCRD
 2. Goals & Targets of the RWCRD
 3. Scope of the problem
 4. Outline of the RWCRD
 5. What is it going to cost?
 6. Introducing AWC3
 7. How it can help
 8. Case study
-



Roadway

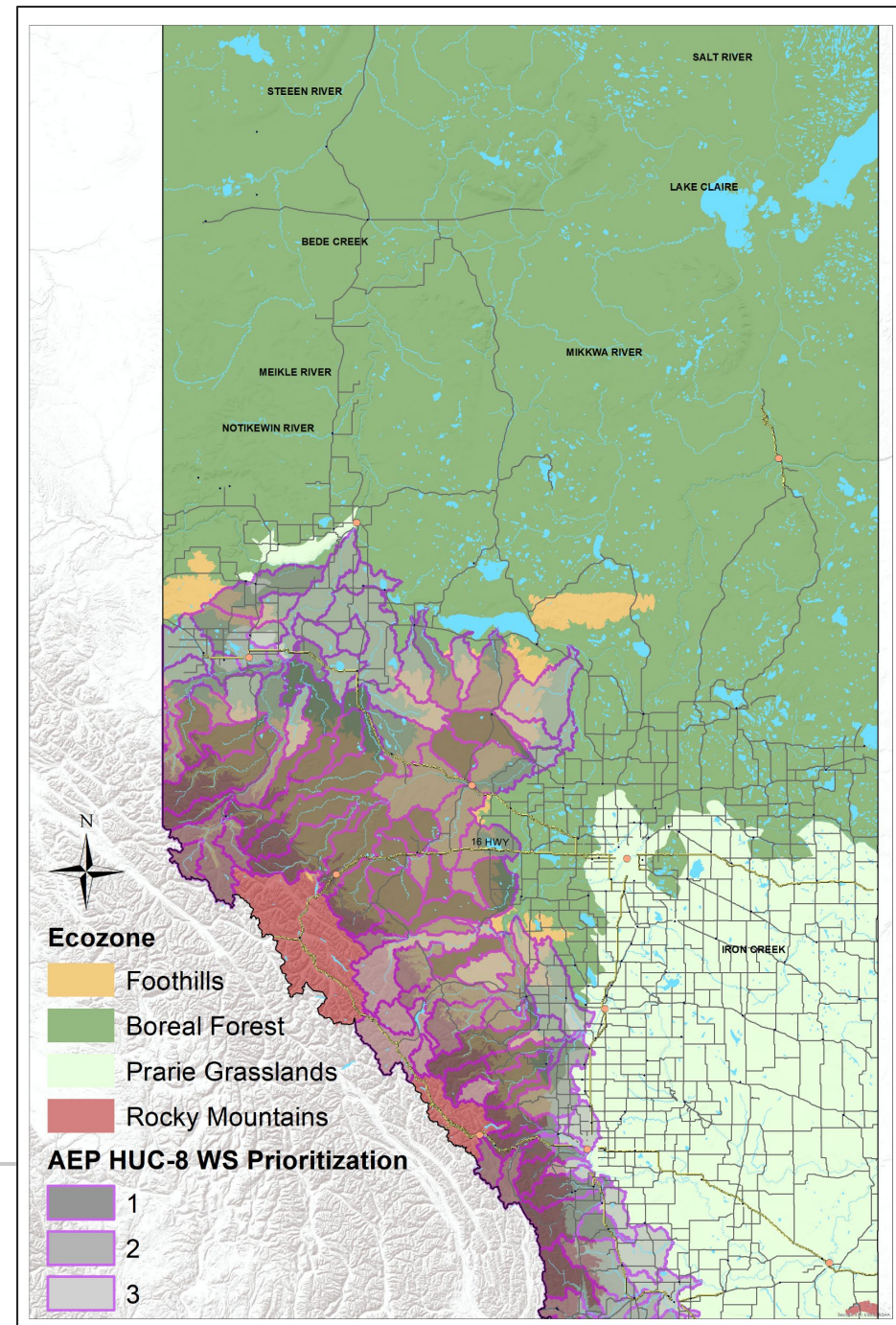
Watercourse

Crossing

Remediation

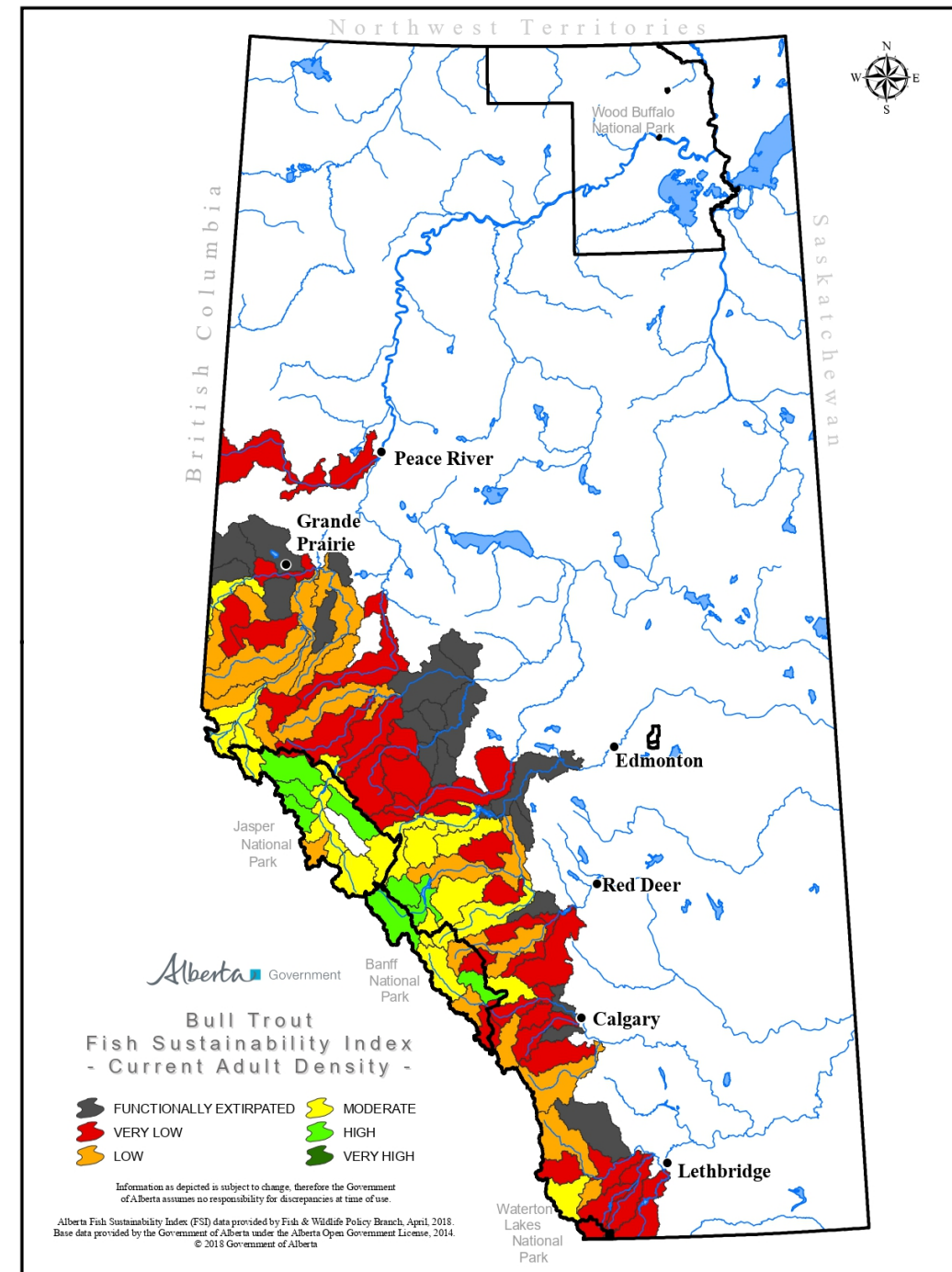
Directive

RWCRD



Goals & Targets of the **RWCRD**:

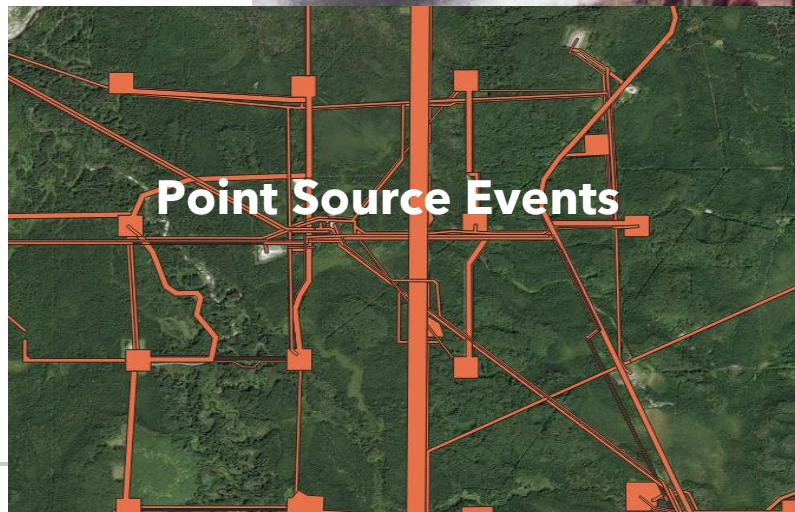
- **Reverse** trends of the **Fish Sustainability Index** for:
 - Arctic Grayling
 - Athabasca Rainbow Trout
 - Bull Trout
 - Westslope Cutthroat Trout
- Identify & report **non-compliant** roadway watercourse crossings
- **Enforce compliance**



What is damaging AB Waterways

Note: Main causes in Alberta for fish habitat destruction - North Central Native Trout Recovery Program (2014):

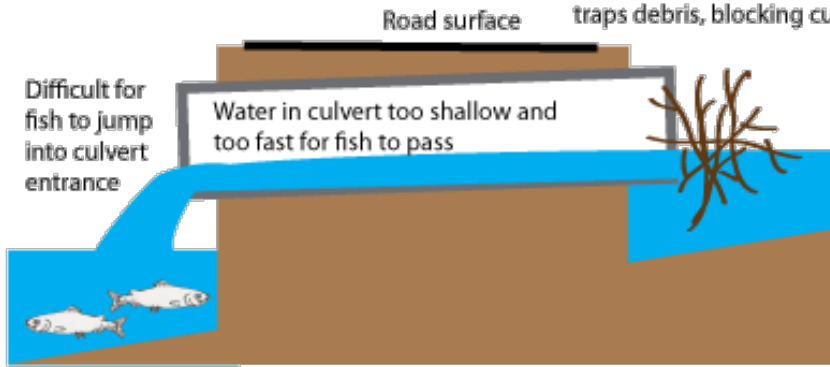
- 1. Fishing
- 2. ATV use
- 3. Cattle
- 4. Industry



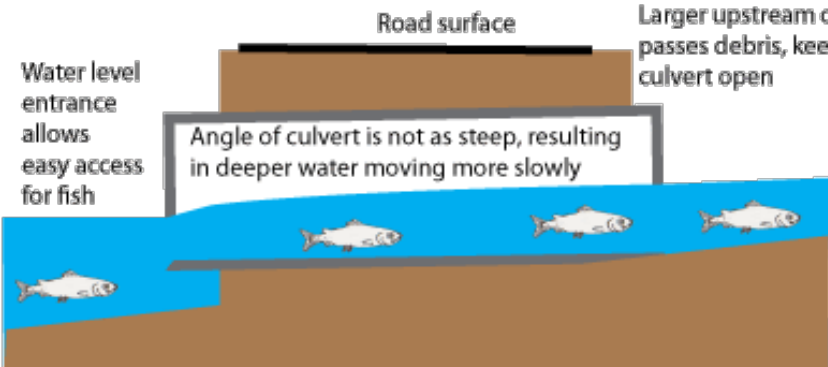
Roadway Watercourse Crossings Effect on Waterways

Culverts

Narrow upstream opening traps debris, blocking culvert



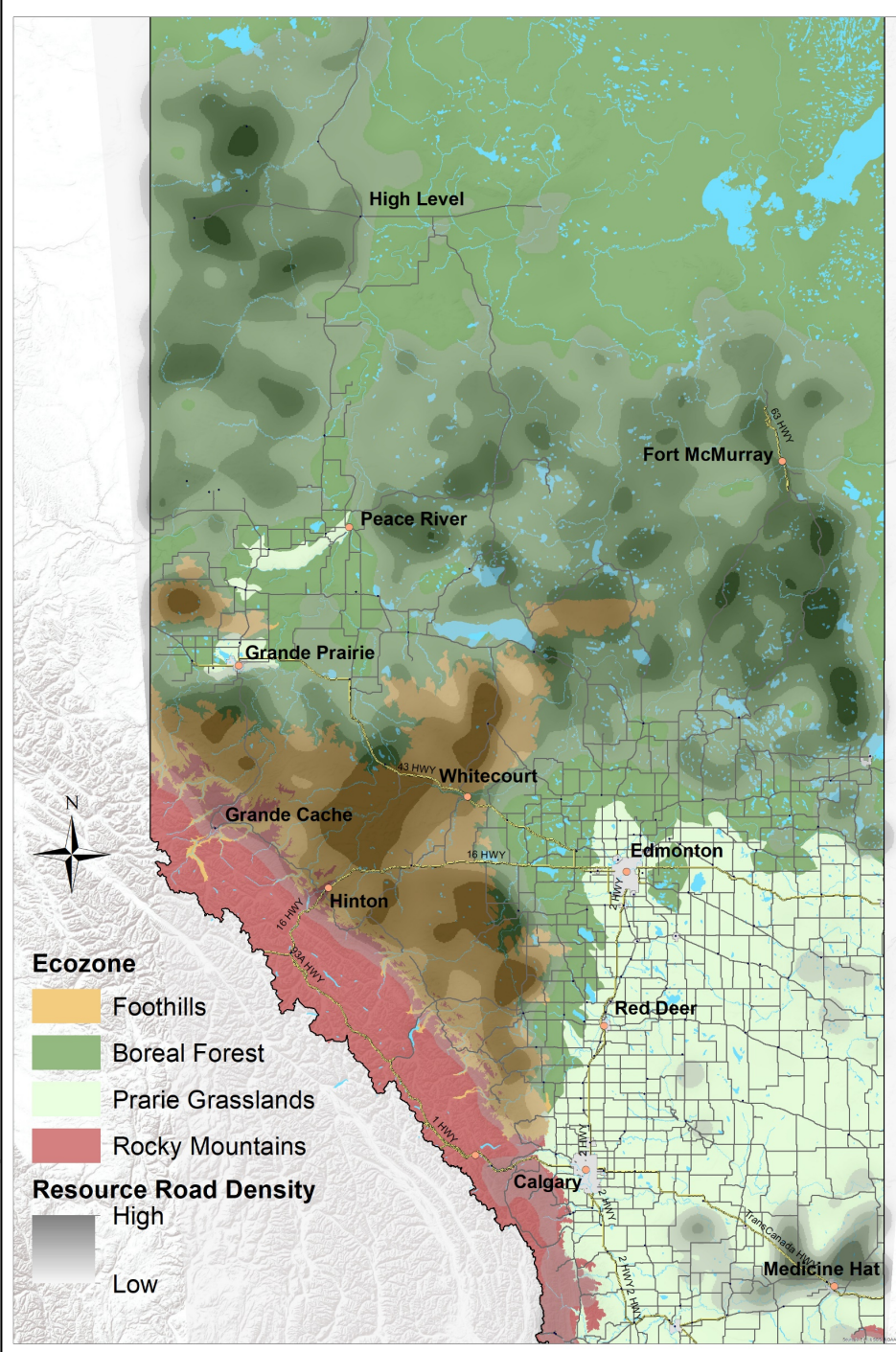
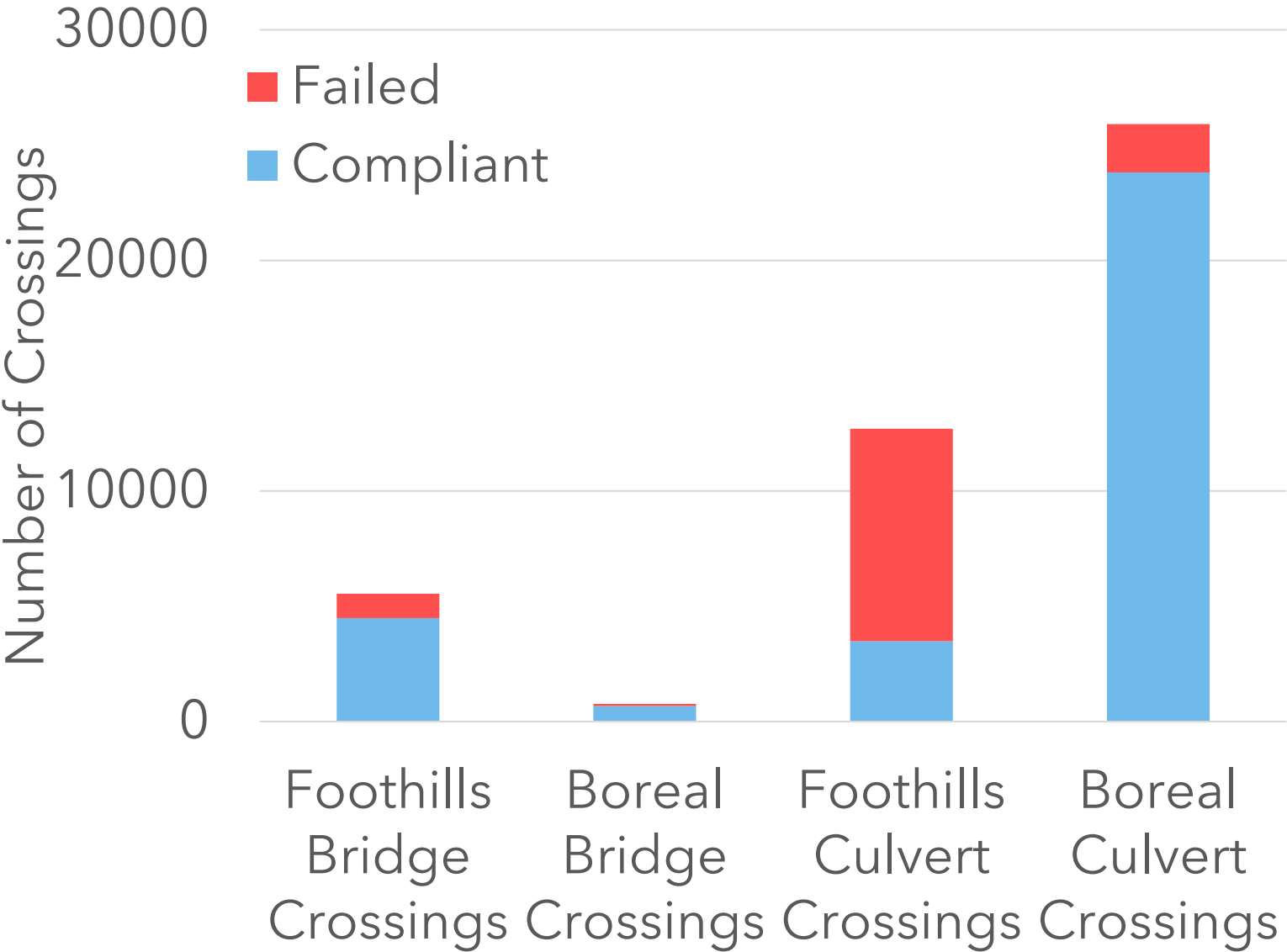
Larger upstream opening passes debris, keeping culvert open



Bridges



Scope of the problem



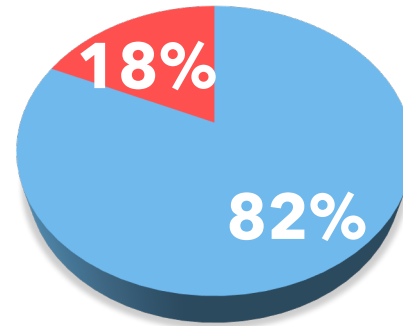
What does the draft of the RWCRD outline?

AEP Restoration Timeline	Year						
Stage	2020	2021	2022	2023	2024	2025	2026 - 2030
Inventory/Inspection							
Re-inspection							
Priority 1 Watershed Restoration							
Priority 2 Watershed Restoration							
Priority 3 Watershed Restoration							

What's the cost?

- Assumes an average **\$36,000/crossing - Conservative**
- Based on **historical failure rate** from n > 10,000 sample size
- Assumes provincial stream layer and provincial resource roads predicts all crossings.

Bridges

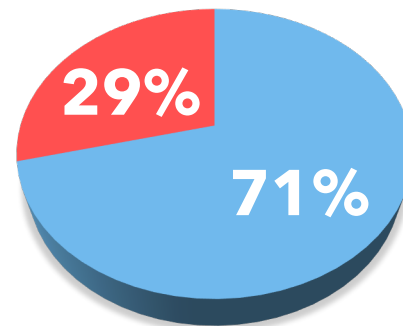


\$40,075,000

■ Compliant ■ Failed



Culverts



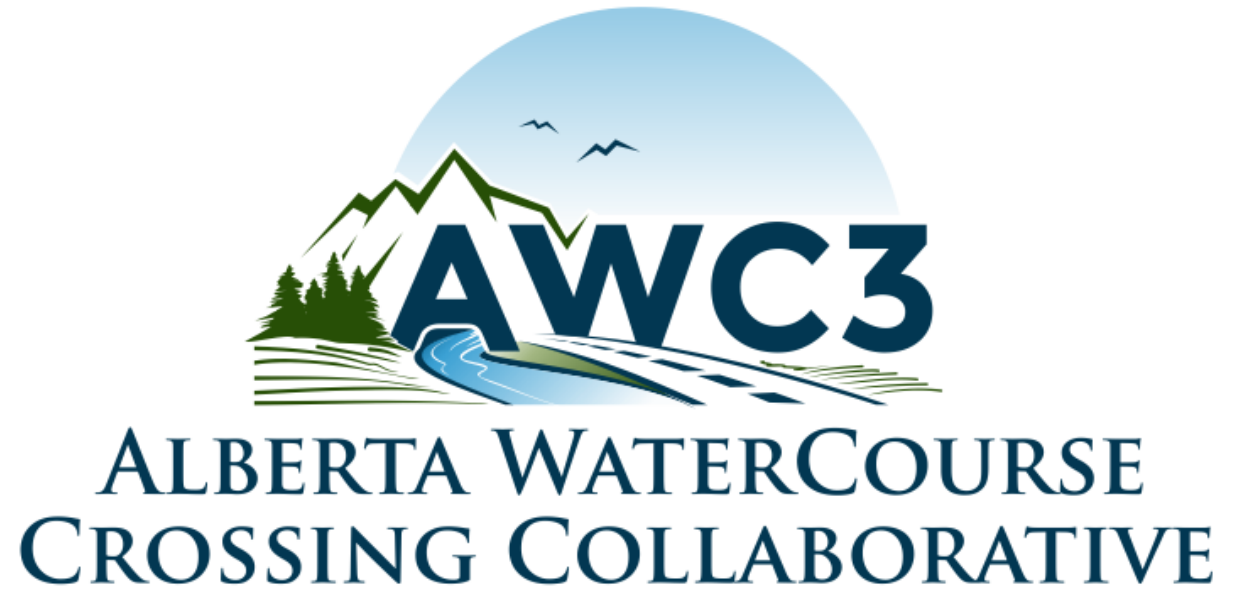
\$395,885,000

■ Compliant ■ Failed

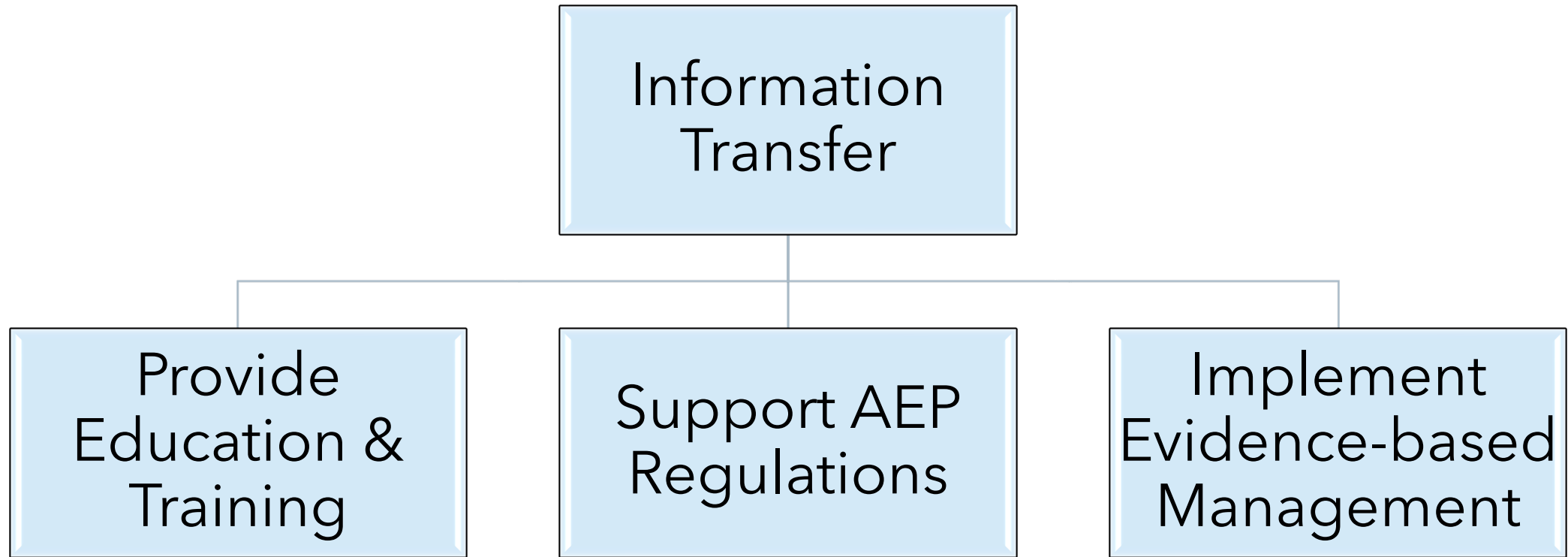
\$435,960,000

Introducing the AWC3

The purpose of the AWC3 is to aid in the restoration of lost and damaged fishery habitat from poorly installed and maintained watercourse crossings



What is the AWC3?



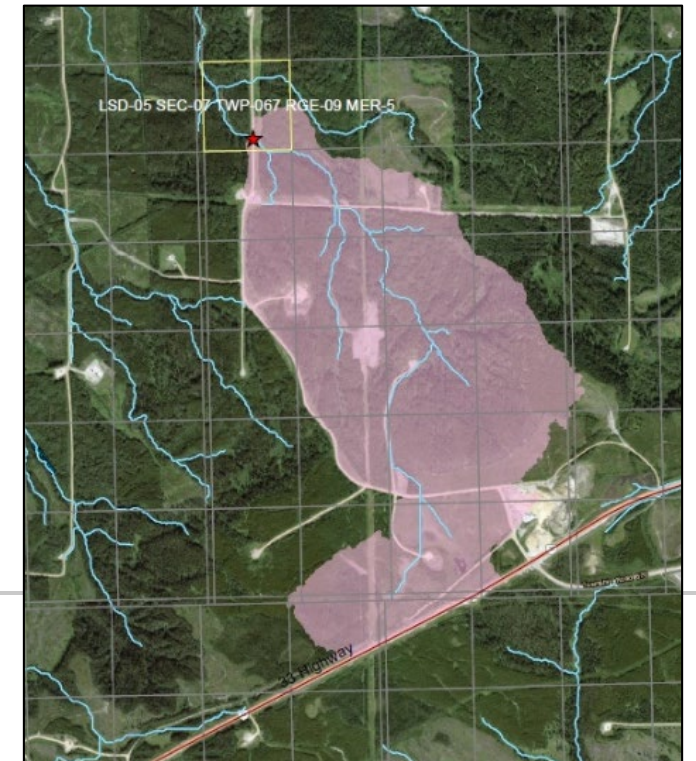
What is the AWC3?

Information Transfer

Provide Education & Training

Support AEP Regulations

Implement Evidence-based Management



Why a not-for-profit?



	Government	Not-for-profit	For Profit
Mission	To serve the electorate	To benefit the community	To increase profits & shareholder equity
Funds	Taxes	Donation	Sale of products/services
Staff	Employees and voted-in officials	Volunteers	Employees
Flexibility	Inflexible, limited by bureaucracy & government budgets	Driven to accomplish single goal/task	Driven by highest profitable services
Audience	Electoral public	Communities, private & public organizations	Consumers & Clients
Leadership	Elected officials, can be limiting	Volunteers, subject matter experts from a diversity of backgrounds	Owners or CEO's

The role of the AWC3



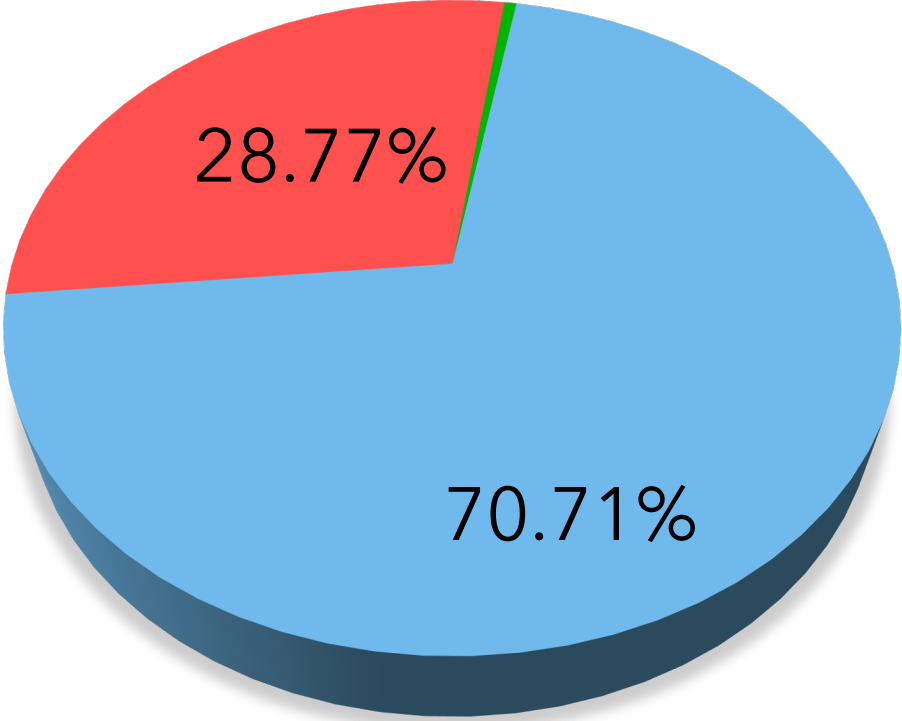
Board Members of AWC3

Member	Role	Affiliation
Michael Bender	Engineer, Scientist	Millenium EMS Solutions Ltd.
Laurie Hunt	Educator, Biologist, Scientist	Northern Alberta Institute of Technology (NAIT)
Mark Poesch	Scientist, Data Manager, Educator	University of Alberta
Mike Hunka	Regulator, Biologist, Communicator	Alberta Energy Regulator
Sean Beattie	Construction Manager, Practitioner, Communicator	Canadian Natural Resources Ltd.
Ben Poltorak	Forester, Practitioner, Data	Earthmaster Environmental Strategies
Michael Wagner	Regulator, Scientist,	Alberta Agriculture and Forestry
Bruce Nielsen	Forester, Practitioner	Woodlands North Inc.

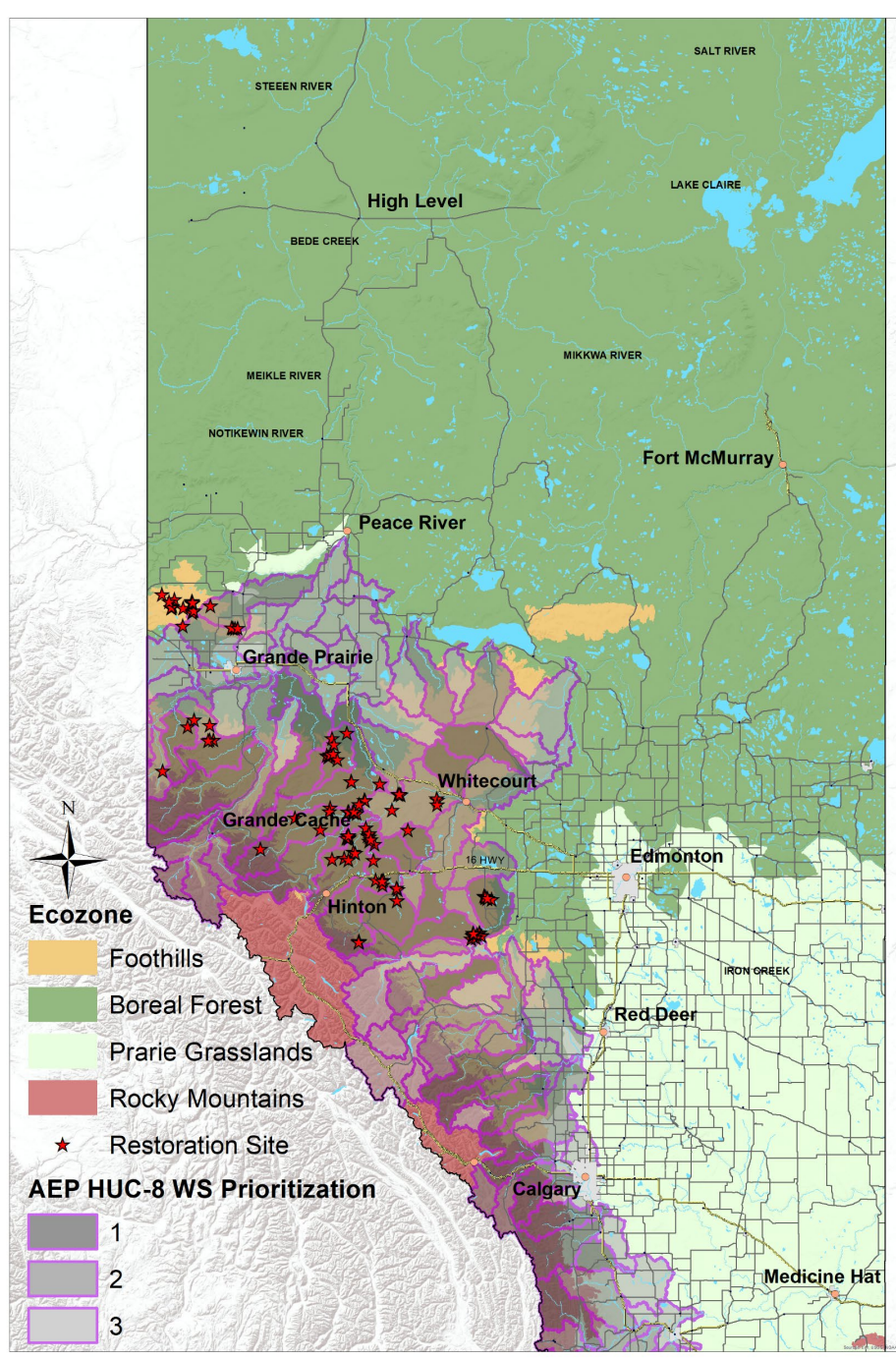
How to monitor progress?

Culverts

0.52% = 1043km of habitat



■ Compliant ■ Failed ■ Remediated





Tuesday, 01 October 2019 10:09

Swimming upstream - How barriers to fish habitat are being removed

Written by Michael Short



Industry, Government agencies and service providers are working together to ensure our native fish species have room to swim.

Let's Go Outdoors

Tec
Fro

20B

Off

LOG IN

sheds

Industry needs a voice



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[DONATE NOW](#)

[MAKE AN IMPACT](#)



CONSERVING CLEAN WATER

The World Economic Forum's Global Risks 2015 Report has water crises in the top 10 of the most likely and highest impact problems that we will face in the next 10 years.

DID YOU KNOW

100 Gallons

The average American uses 100 gallons of water per day at home

1%

Earth's surface is 70% covered by water, but less than 1 percent is available for human use

65%

Percent of our drinking water that comes from rivers and streams

44%

Percent of assessed waterways in the United States too polluted for fishing or swimming



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[AMERICA'S RIVERS](#)

[THREATS & SOLUTIONS](#)

BIG STEP FORWARD ON RESTORING CALIFORNIA'S KLAMATH RIVER

American Rivers and our partners have been working since 2000 to remove PacifiCorp's four obsolete dams on the Klamath River

Steve Rotherth | April 5, 2016



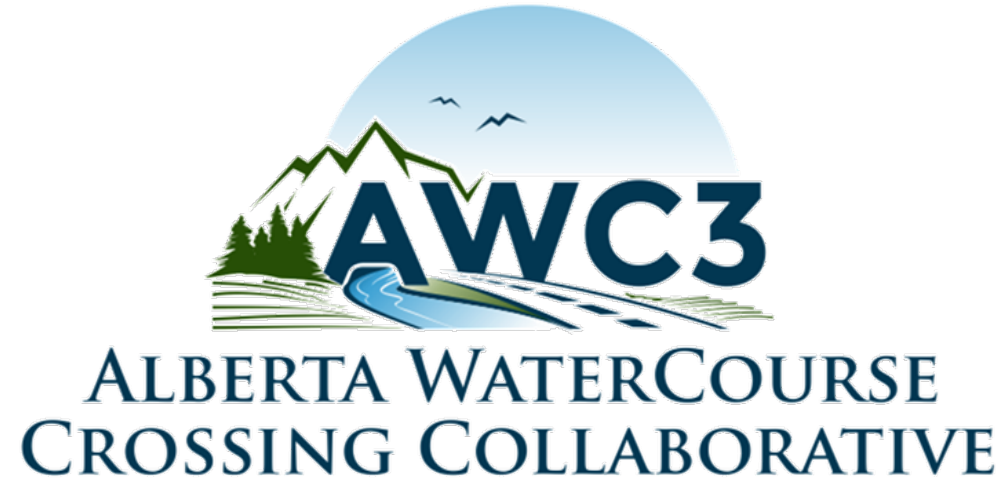
Conclusion

- Several of Alberta's key fish species are being extirpated from key viable habitat
 - Alberta Environment & Parks (**AEP**) is enforcing the **RWCRD**
 - **AWC3** is here to:
 - **Inform** industry about obligations under the RWCRD
 - **Educate** road tenure owners
 - **Guide** road tenure owners to compliance using evidenced-based management practices
 - **Create a collective story** about industry environmental achievements
-

Next Steps

- AWC3 Joint Spring Technical & AEP Awareness Session:
 - **April 21 in Grande Prairie**
 - **April 23 in Calgary**
 - AWC3 Spatial Web Portal – TBA
 - Visit us at: www.awccc.ca
-

Thank you



Visit us at: www.awccc.ca

Iain Sharp

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780-655-0574
