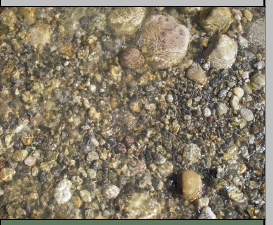
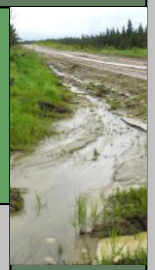
Foothills Stream Crossing Program





June 2010

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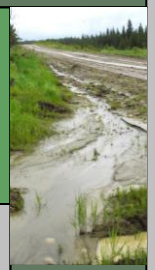
Foothills Stream Crossing Program



1. Current Membership
2. Progress to date
3. 2010 Projects

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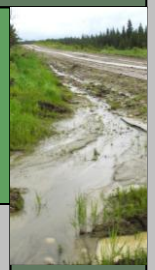

Current membership (crossing owners)

- BP Canada
- CN (inactive)
- CNRL
- ConocoPhillips
- Devon
- Hinton Wood Products, West Fraser Mills
- Imperial Resources (Esso)
- Suncor Energy (including Petro Canada)
- Talisman Energy
- Shell Canada (including Duvernay)

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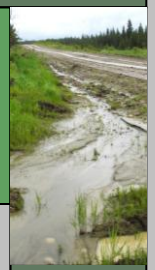
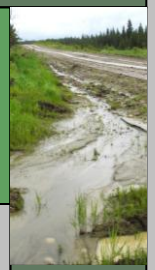
Current membership (support)



- Fisheries and Ocean Canada
- ASRD Public Land and Forests
- ASRD Fish and Wildlife
- Alberta Environment
- Foothills Research Institute
- Alberta Chamber of Resources
- Alberta Conservation Association

Overall Progress to Date



- 2005–Developed and approved Stream Crossing Inspections Manual
- 2006– Completed just over 300 field inspections
- 2007– Developed a collaborative watershed management strategy for two basins to test cooperative remediation process
- 2008– Inspected all crossings and collected baseline fisheries data in test basins
- 2009- Remediated 52 crossings and completed all member crossing inspections

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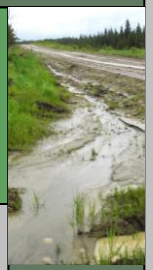
2010 Projects



- Geotextile Demonstration Site
- Grande Cache Inspection Crew
- Re-inspection protocol
- Watershed Prioritization
- Watershed remediation plans
- Footprint reduction

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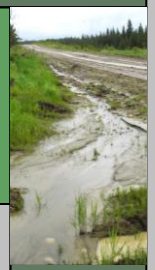
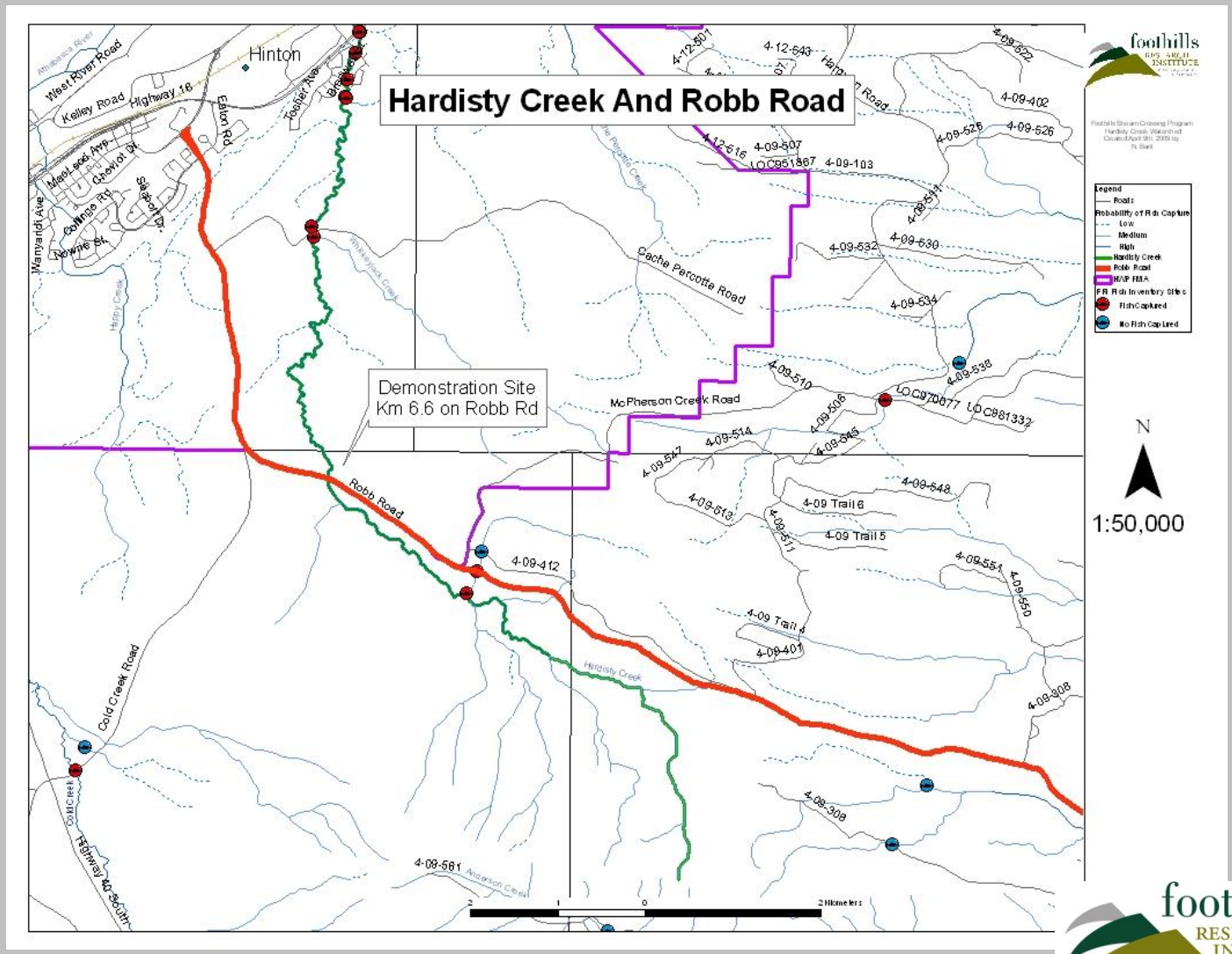
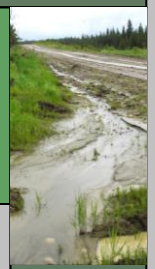
Geotextile Reinforced Arch Structure





Why Hardisty Creek?

- Close to Hinton
- High profile demonstration stream
- Blocking 14 km of fish habitat



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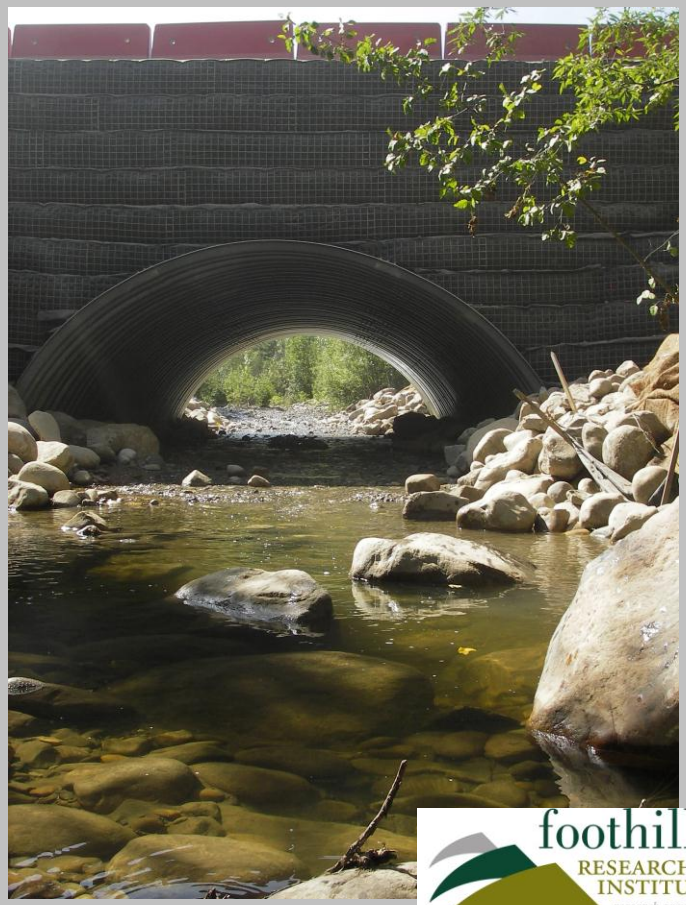
Before and After



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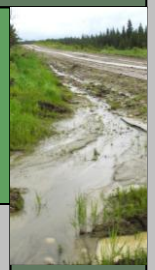
Finished Substrate



- Mimics natural channel
- Evolves over time (dynamic)

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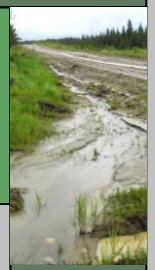
GRS Benefits



- Fill is composed of local materials
- Footings are not required
- Quick installation
- Open bottom structure facilitates fish passage and sediment flush
- Less long term maintenance than a culvert
- Less expensive than a bridge

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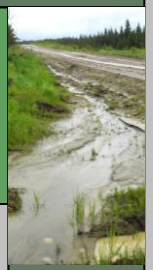
Willow Planting



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Future

- Demonstration signs to be designed summer 2010
- Monitoring for fish passage improvements
- FPInnovations report and video

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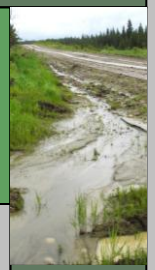
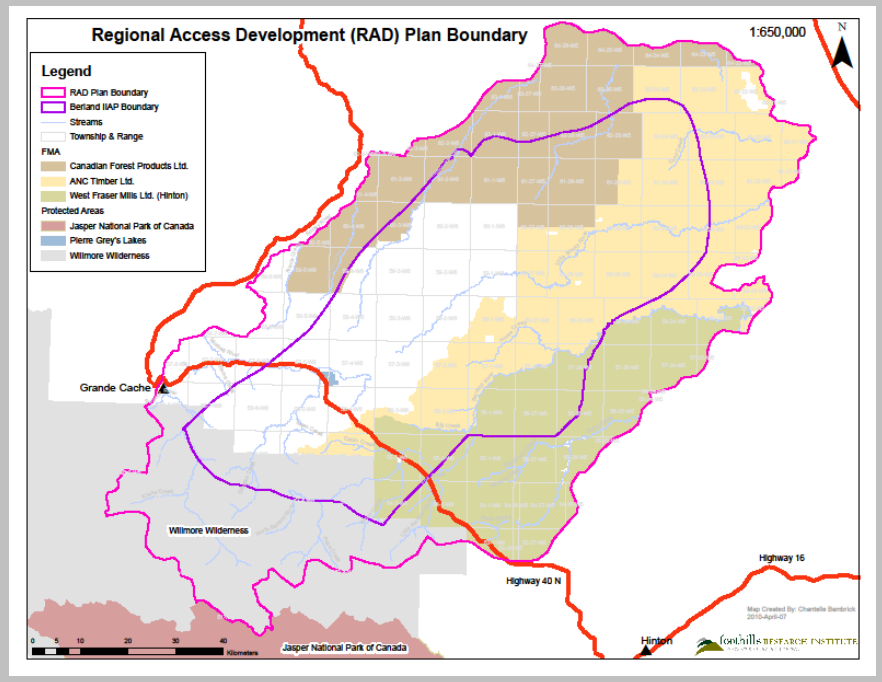
FLMF Funded Inspection Crew



- 1 million hectares
- 476 energy
- 476 forestry
- 88 government
- 209 unknown
- 1249 total stream crossings



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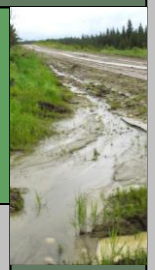
Inspection priorities



- Safety
- Water quality
- Fish passage

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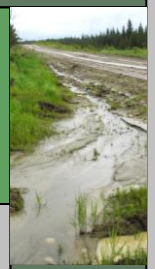
Fish Passage



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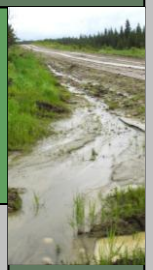
Sedimentation



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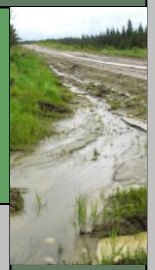
Safety



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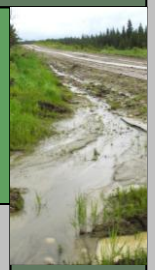
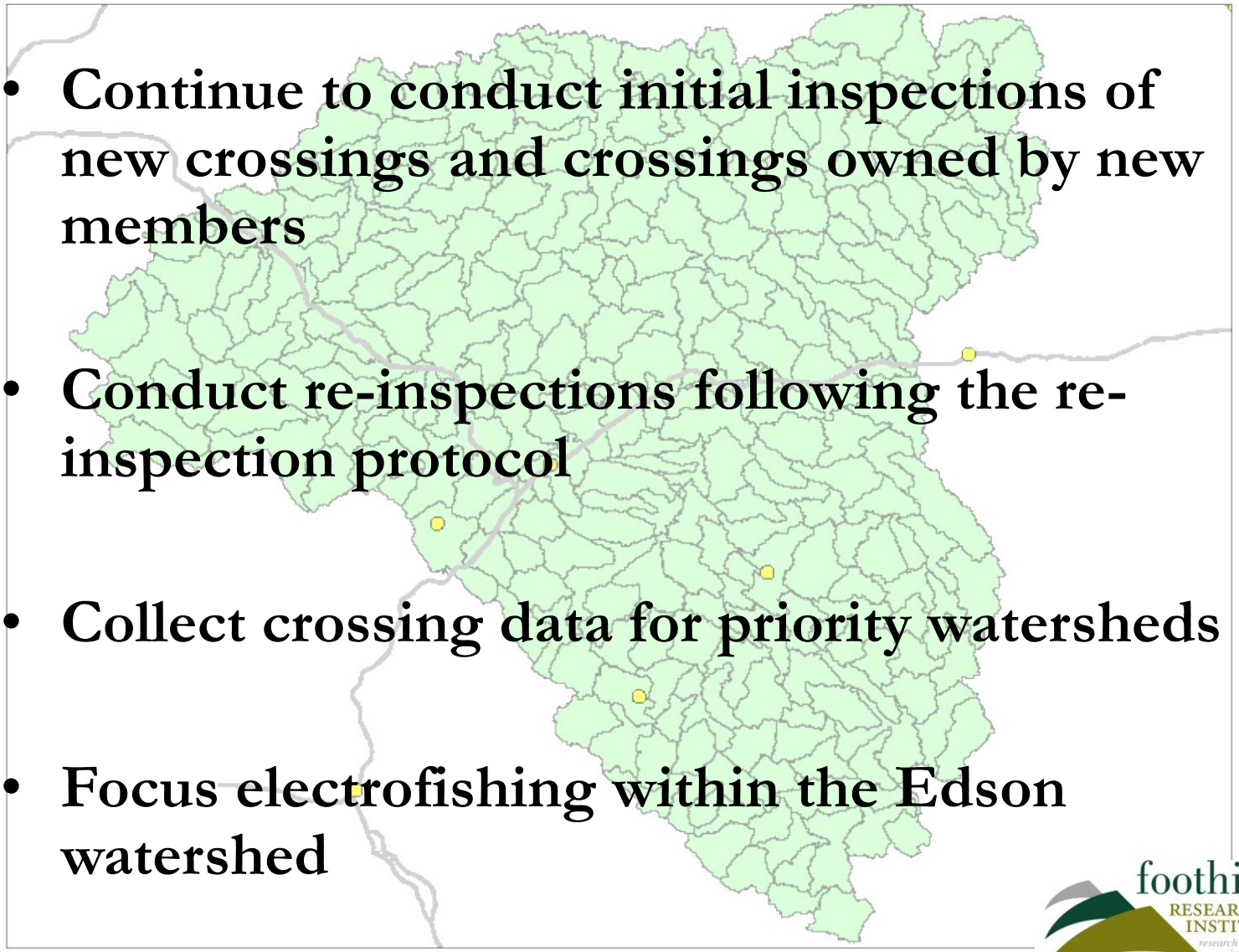
FSCP Study Area





- Continue to conduct initial inspections of new crossings and crossings owned by new members
- Conduct re-inspections following the re-inspection protocol
- Collect crossing data for priority watersheds
- Focus electrofishing within the Edson watershed

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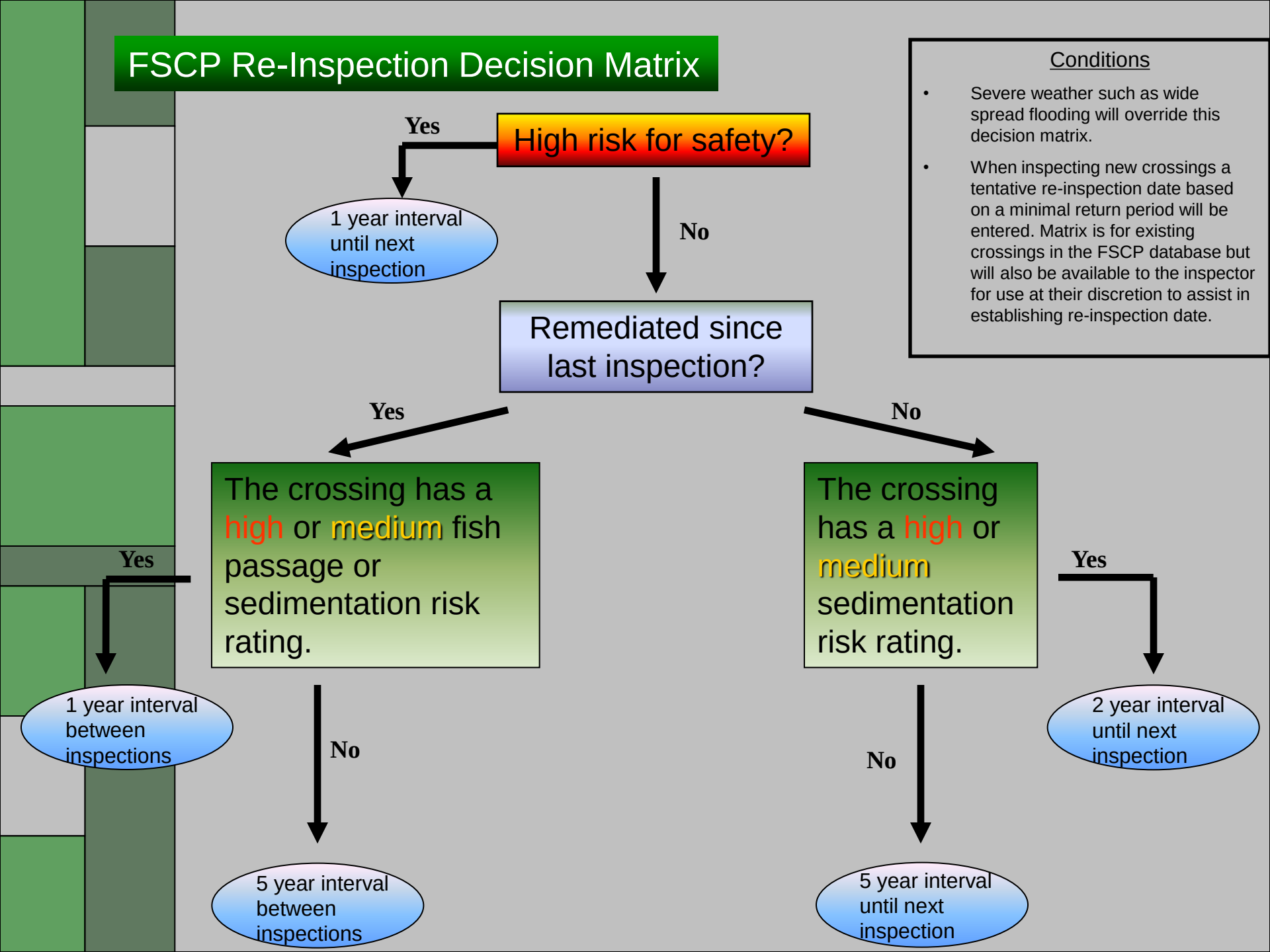
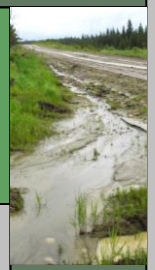
FSCP Re-Inspection Decision Matrix



Conditions

- Severe weather such as wide spread flooding will override this decision matrix.
- When inspecting new crossings a tentative re-inspection date based on a minimal return period will be entered. Matrix is for existing crossings in the FSCP database but will also be available to the inspector for use at their discretion to assist in establishing re-inspection date.

Why do we prioritize?



- Large landscape scale problem
- Maximize environmental benefits with available funds
- Allows for collaboration between companies and the regulators
- Allows for planning over time

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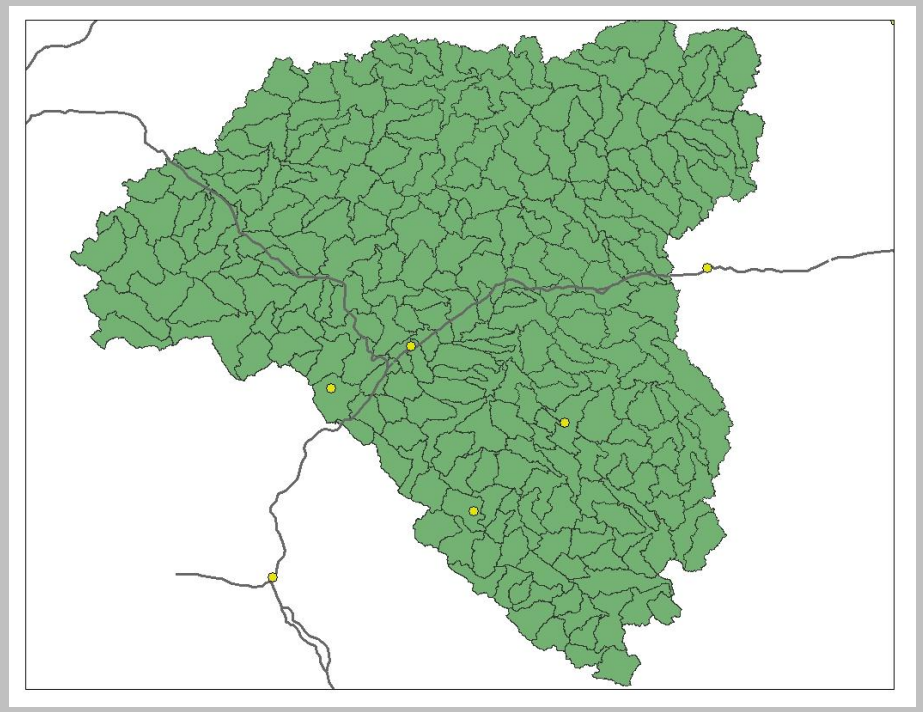
Watershed Prioritization

(Work in progress)



- 266 delineated watersheds
- Step 1
- Select for watersheds with greater than 1 km of blocked stream

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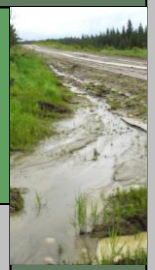
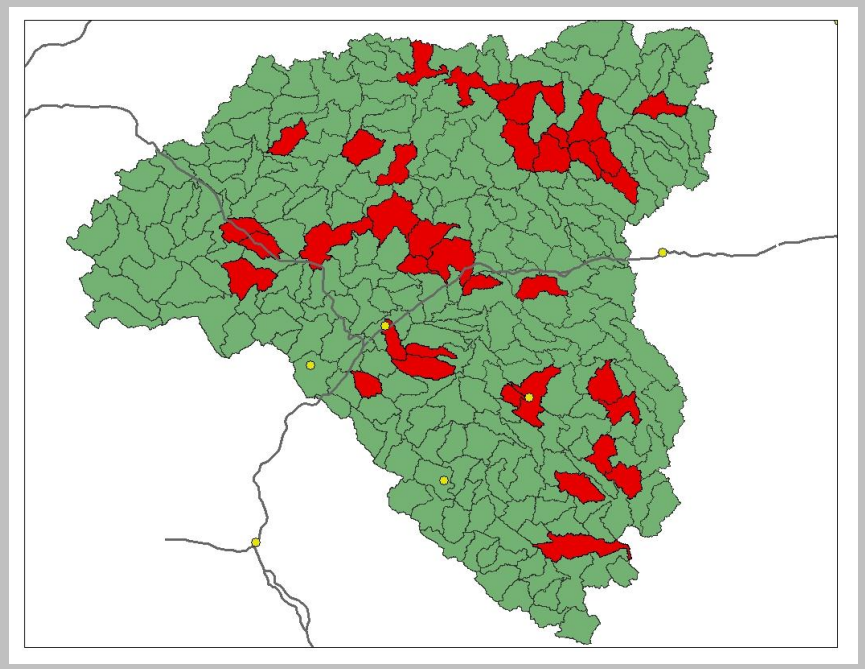
Watershed Prioritization

(Work in progress)





- Greater than 1 km blocked stream

Step 2

- Select for watersheds greater than 50 km^2

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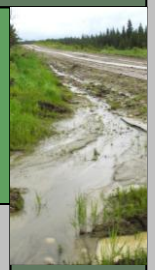
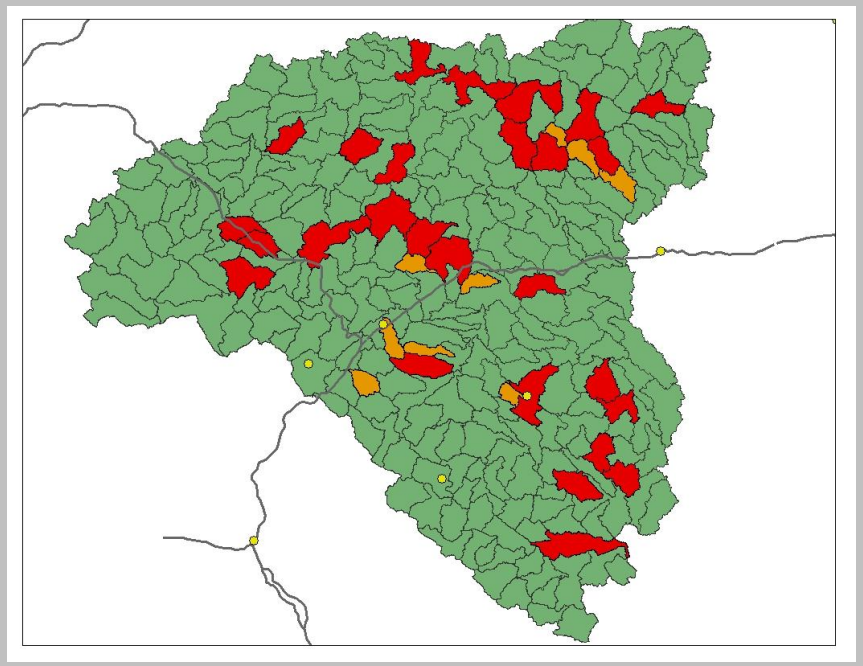
Watershed Prioritization

(Work in progress)





- > 1 km blocked
- > 50 km^2

Step 3

- Select for watersheds with confirmed fish presence

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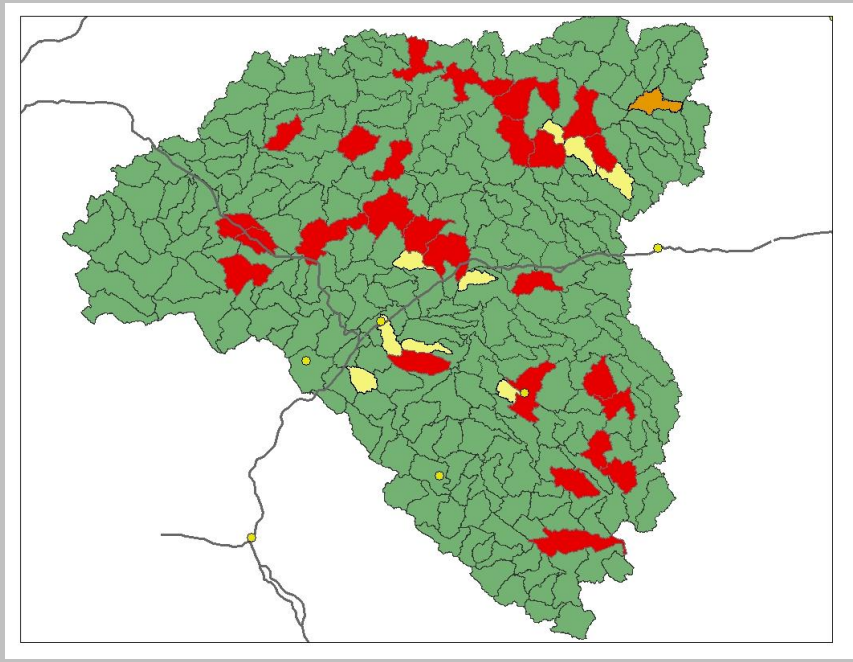
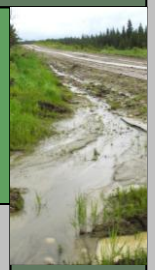
Watershed Prioritization

(Work in progress)



- > 1 km blocked
- > 50 km^2 area
- > Confirmed fish presence



Step 4

Select for watersheds with 3 or more high sedimentation risks

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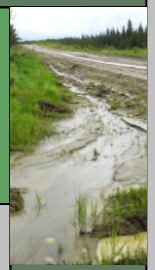
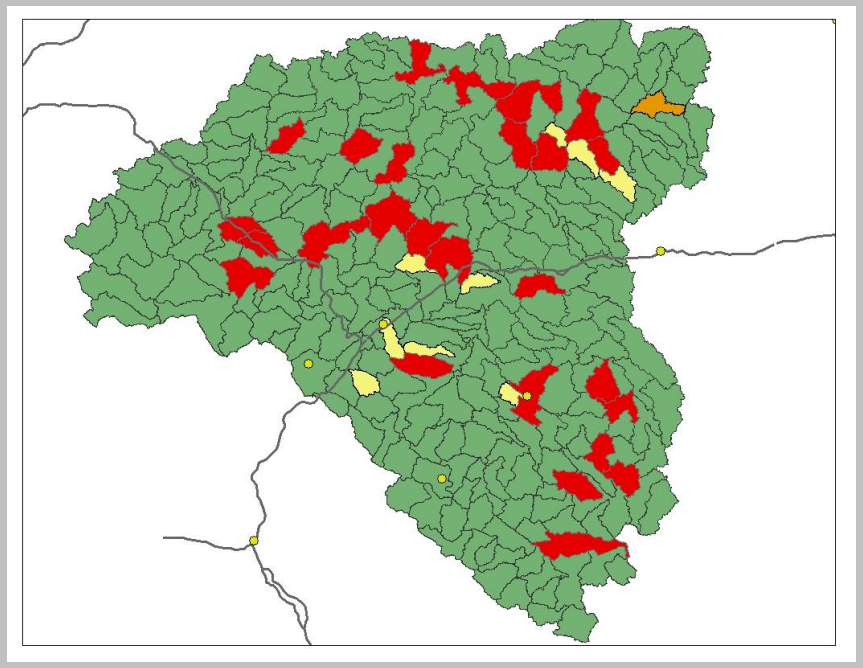
Watershed Prioritization

(Work in progress)





- > 1 km blocked
- > 50 km^2 area
- > Confirmed fish presence
- Containing 3 or more high sediment risks

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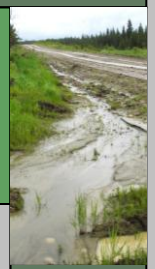
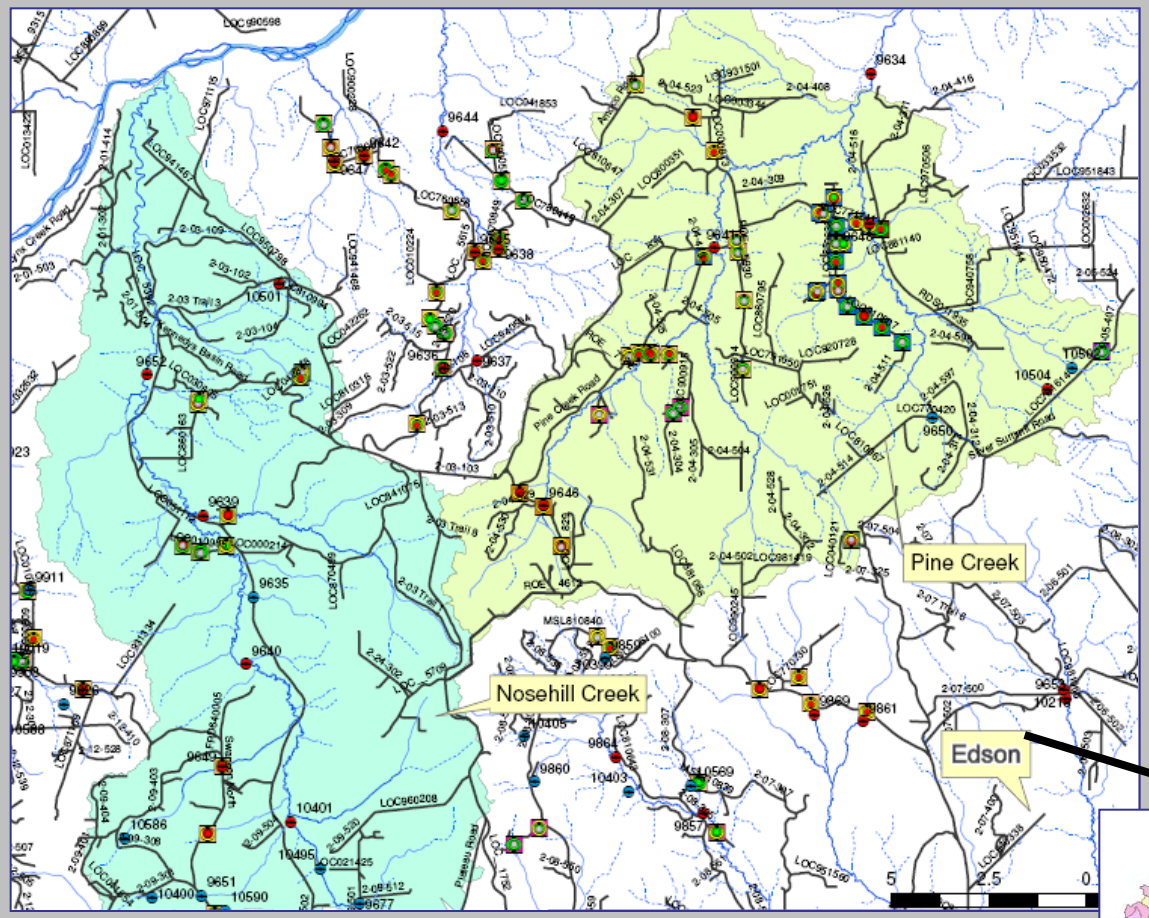
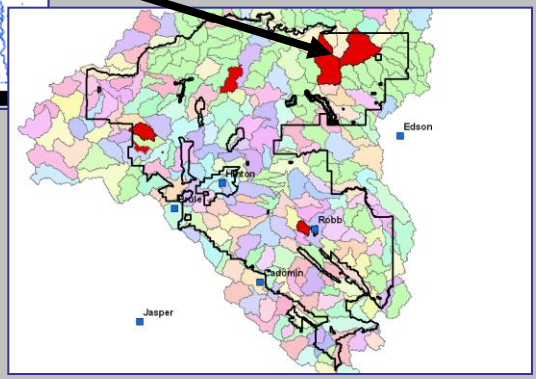
Nosehill and Pine Creek Watersheds



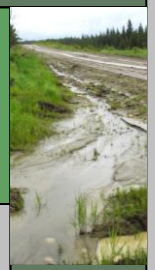


- 89 total crossings
- 84 crossings required sedimentation mitigation
- 17 crossings were barriers to fish passage
- ~50 km of blocked fish habitat



*71% of crossings belong to FSCP member companies

Footprint Reduction



2009

- 47 (of 51) crossings had sedimentation issues addressed
- 5 crossings were mitigated for fish passage opening 29 km of fish habitat opened (63% of recommended fish passage repairs)

2010

- Remaining 4 crossings at risk for sedimentation will be repaired
- Planned repair to remaining fish barriers will open 15 km of fish habitat

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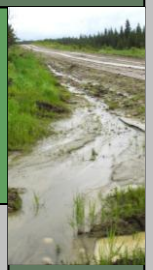
Problems/Concerns?



- How to get non-members on board, both industry and government?
- The magnitude of the problems including the number of crossings and the cost of remediation.
- The balance between industry driven solutions and being in compliance.

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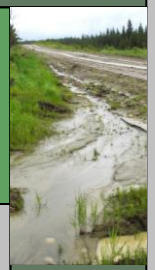

Summary

- Good example of "integration"
- Adaptive
- Strong support and cooperation from industry, FRI, ASRD and DFO
- Results oriented and continuous improvement
- Potential to expand across Alberta

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Thank you

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