Water and Fish Program

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Our Values

Mission

We develop understandable scientific knowledge and useful land management tools based on strong peerreviewed science.

Our Vision

Our world class research improves land and resource management.

Our Values



Credible science Open data Partnerships and positive energies Non-partisan Courage, boldness Respect Trust Sense of urgency Traditional knowledge

Our Activity Team

West Fraser MillsSCanadian Forest ProductsATeck ResourcesNWeyerhaeuserNAlberta Agriculture, Forestry and Rural Economic DevelopmentAlberta Biodiversity Monitoring InstituteFAlberta Environment and ParksTParks CanadaA

Swan River First Nation
 Alberta Conservation Association
 Mighty Peace Watershed Alliance
 North Saskatchewan Watershed Alliance

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Fisheries and Oceans Canada

Trout Unlimited Canada

Alberta Wilderness Association

Strategic Planning to "Impact"





Urgency!

"Silent collapse"

... native trout and charr in the Canadian Rocky Mountain region face a bleak future with a high probability for future population declines a call for immediate action is needed.

Sinnatamby, Cantin and Post 2019

Critical Lenses



Critical Lenses



Five Themes: Five-Year Horizon



Sustaining our wildland waters



Southern Rockies Watershed Project

Comparing impacts of wildfire and forest management practices on water flow and quality.

Assessing impacts of BMP

Comparing early and longer-term impacts of wildfire and forest harvesting on stream health.

Development of a Comprehensive Watershed Assessment Tool to replace the current ECA planning approach.

Lidar attributes

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Tompalski et al. 2017

Lidar attributes and salmonids?



- 85% overall accuracy
- Riffles and Glide most often confused
- Pools have best individual unit accuracy

Dakin Kuiper et al. 2022



Lidar attributes and salmonids?



High precision habitat and risk modelling using lidar

- Task #1: Development of North America's most advanced, connected and fisheries-defined stream layer (2022-2025).
- Task #2: Development and field testing of new riparian and road/trail related algorithms (2022-2024).
- Task #3: Application of above derived tools to the full range of *bull trout, Athabasca rainbow trout, and Westslope cutthroat trout critical habitat (2024-2027).*
- Task #4. Professional lidar-training to accelerate acceptance and uptake of innovation (2022 2027).
- Task #5. Development of smart buffers

Water temperature monitoring and effects on fish



- Task #1: Relationships between water temperature and fish physiology and survival (2022-2027).
- Task #2. Spatial modelling of stream water temperature and development of a public portal for information sharing (2022-2024).
- Task #3: Lead continued monitoring of stream water temperatures.

Attracting the Best Talent



Professor Uldis Silins *et al.*, U of A Professor Mark Poesch *et al.*, U of A Professor Nicholas Coops et al., UBC Professor Alexis Achim et al., Universite Laval Dr. Lee Benda, Terrainworks Dr. Daniel Miller, Terrainworks Dr. Ryan MacDonald, MacHydro Matthew Chernos, MacHydro Professor Kim Green *et al.*, Selkirk College Dr. Rita Winkler, retired Matthew Pyper, FUSE Consulting

Diversified Funding

Alberta Agriculture, Forestry and Economic Development Alberta Environment and Parks Alberta Innovates NSERC: Alliance Program Canadian Foundation for Innovation Forest Resource Improvement Association of Alberta MITACS Fisheries and Oceans Canada

What Does Success Look Like?



- ✓ "Aligned thinking"
- ✓ Restoration of Native Trout Species
- ✓ Increased access to fibre
- ✓ Science informed policy and field operations
- Credible science, nation-best stream inventories, and nation-best planning tools.
- Verified current land use practices in both forestry and mining sectors.
- Development of new HQP

Moving Beyond the One-Yard Line

