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BC Fish Passage Program Annual Report 2018-2019

Partnership between

**BC Ministry of Forests, Lands, Natural Resource Operations
and Rural Development
Land Based Investment Strategy (LBIS)**

Inter-Agency Fish Passage Technical Working Group



Acknowledgements

Inter-Agency Technical Working Group:

Ministry of Forests, Lands, Natural Resource Operations & Rural Development (FLNR)

- David Maloney (Chair), Fish and Aquatic Habitat Branch
- Brian Chow, Engineering Branch
- Elizabeth Easton, Climate Change and Integrated Planning Branch
- Dave Hamilton, BC Timber Sales
- Lisa Nordin, Resource Planning and Assessment Branch

Ministry of Environment and Climate Change Strategy

- Craig Mount, Knowledge Management Branch
- Richard Thompson, Ecosystems Branch
- Peter Tschaplinski, Ecosystems Branch

Ministry of Transportation and Infrastructure

- Sean Wong, Environmental Management Branch
- Andrew Anderson, Environmental Management Branch

Project Managers:

- Jeff Fedyk, BC Timber Sales – Kamloops, FLNR
- Dave Hamilton, BC Timber Sales – Strait of Georgia, FLNR
- Alan Harrison, BC Timber Sales – Skeena, FLNR
- Phil MacDonald, BC Timber Sales – Kootenays, FLNR
- Gary Molyneux, Thompson Rivers Natural Resource District, FLNR
- Brian J. Moore, Cascades Natural Resource District, FLNR
- Megan Sheshurak, BC Timber Sales – Okanagan-Columbia, FLNR
- John Thibeau, BC Timber Sales – Skeena, FLNR

Table of Contents

Background	4
2018-2019 Budget.....	5
2018-2019 Accomplishments.....	5
2008-2017 Accomplishments.....	6
2018-2019 Remediation Projects.....	7
1. Tranquil Creek/Clayquot Sound Fish Passage Remediation Project	8
2. Quartz Creek Remediation Project	9
3. Kuldo FSR km 2.6.....	10

Background

Why restore fish passage?

The ability for fish and other aquatic organisms inhabiting streams to move freely (upstream and downstream) throughout their natural environment is an important component of healthy resilient natural aquatic ecosystems. Different fish species and life stages require a variety of habitats at different times of the year. Human-caused barriers such as road-stream crossings that block or delay fish movement can result in changes to fish communities and lost productive capacity. Healthy, resilient fish populations are necessary to maintain BC's fish species diversity and productivity that in turn supports our recreational, commercial, and indigenous food fisheries. In addition to the importance to our fisheries, maintaining access to a full range of habitats is necessary to ensure fish populations and other aquatic species have the best chance to adapt to changing aquatic conditions resulting from climate change.

Fish passage program

In 2007, the Assistant Deputy Ministers of the then BC Ministry of Forests and Range, and Ministry of Environment – in cooperation with federal Department of Fisheries and Oceans (DFO) and the Forest Industry (Council of Forest Industries) – formed the Fish Passage Program. The inter-agency Fish Passage Technical Working Group (FPTWG) was established and then developed the four-phase 'Fish Passage Strategic Approach' that guides delivery of the program by prioritizing problem road-stream crossings for remediation. The four phases are:

1. *Assessments* undertaken for all road crossings in watersheds that are strategically identified as a high priority for fish;
2. *Habitat confirmations* undertaken at crossings assessed to be the best candidates for remediation to determine actual habitat values to be gained;
3. *Site plans and designs* to determine the most effective structure to remediate priority crossings identified through the habitat confirmation phase;
4. *Remediation* projects that most often involve either (i) the purchasing and installation of new fish-friendly structures (e.g. culverts and bridges) or (ii) road crossing deactivations (e.g. for non-status roads) that restore fish passage.

Data and reports from each of the four-phases are to be uploaded in the Provincial Stream Crossing Information System (PSCIS).

BC's Land Based Investment Strategy (LBIS) funded the Fish Passage Program in 2018/19. FPTWG has been working with BC Timber Sales (BCTS) and Ministry of Forests, Lands, Natural Resource Operations and Rural Development (FLNR) Natural Resource District staff to prioritize and remediate problem road-stream crossings. Between 2008 and 2018 the Fish Passage Program has remediated 171 road stream crossings resulting in fully restored access to 795 kilometers of fish habitat.

The actual delivery of projects on-the-ground is primarily accomplished through agreement with BCTS; however district and regional staff may also lead delivery for some projects. For more information about the LBIS Fish Passage and the FPTWG: <http://www2.gov.bc.ca/gov/content/environment/natural-resource-stewardship/land-based-investment/investment-categories/fish-passage>

2018-2019 Budget

The Fish Passage Program budget totaled \$1 000 000 from the Land Based Investment Strategy (LBIS).

2018-2019 Accomplishments

Assessments

62 fish passage assessments Deadman River watershed in the Thompson Rivers Natural Resource District.

Habitat confirmations

12 habitat confirmations in total: 7 in the Coldwater watershed in the Cascades Natural Resource District; 2 in the Upper Adam watershed in the Thompson Rivers Natural Resource District; 2 for Freeman Creek in the Kootenays. and 1 for Saunier Creek in the Okanagan-Columbia.

Site plans and designs

4 site plans: 2 for Freeman Creek in the Kootenays; and 2 for the Upper Adam watershed in the Thompson Rivers Natural Resource District

Structure Purchase

4 structure purchases: 1 for Freeman Creek in the Kootenays (an existing second structure is being provided within the ministry); 1 for Quartz Creek (Site 540) in the Cascades Natural Resource District; 1 for Iron River (a 90 feet composite bridge) on Vancouver Island; and 1 for North Thompson FSR 17.1 km site

Remediations

3 crossings were remediated: Kuldo FSR km 2.6 in the Skeena; Quartz Creek (Site 540) in the Cascades Natural Resource District; and Mary Creek on Vancouver Island. Table 1 provides an overall summary of the remediation projects

Other

Construction of Mary Lake bypass road on Vancouver Island in preparation for removal of two structures and deactivation of the crossing in FY 19/20.

Reports, Communications and Training

- In May 2018, the *Fish Passage Program Benefit-Cost Analysis Final Report* was completed
- In June 2018 a *British Columbia Fish Passage Program* brochure was completed
- In December 2018 two information pamphlets/guides were completed in partnership with FPInnovations:
 - *Streambed Simulation: Streambed Construction, Infill Methods, and Rewatering for Closed-Bottom Stream Crossings*
 - *Streambed Simulation: Fish Management, Water Control, and Culvert Installations for Closed-Bottom Stream Crossings*
- In February 2019 a presentation was made regarding the Fish Passage Program Benefit-Cost Analysis Final Report

2008-2017 Accomplishment Highlights

Fiscal Year	Expenditure (millions)	Crossing Assessments	Installed Culverts	Installed Bridges	Deactivations	Total crossings remediated	Km fish habitat recovered
2008/09	\$6.1*	4 683	28	17	-	44	158
2009/10	\$3.6*	4 594	23	11	-	34	184
2010/11	\$2.4	8 171	-	-	-	17	305
2011/12	\$0.8	1 987	-	-	-	2	25
2012/13	\$2.0	3 000	-	-	11	18	27
2013/14	\$0.5	1 954	2	2	2	6	18
2014/15	\$1.0**	1 416	1	4	20	25	11.6
2015/16	\$1.4**	16	6	4	0	11#	22.3
2016/17	\$1.2**	276	0	1	3	4	6.3
2017/18	1.2**	156	3	2	1	7#	26.4
2018/19	1.0	62	1	2	0	3	11.25+
Total	\$20.0	26 315 ##	64	43	37	171	795.1

* denotes FIA funding **includes RFCPP funding # includes removal of one small dam

includes some assessments completed on non-fish bearing streams

Note: From 2002/03 to 2007/08, further \$18.5 MM was expended from Forest Investment Account (FIA)

2018-2019 Remediation Projects and Costs

Completed Projects (see attached for before and after pictures and further information)

Project	Location	2018/19 Costs	Restoration	Habitat Gain	Fish
1. Mary Creek (Menzies Mainline)	Vancouver Island	??	Bridge installed	?	?
2. Quartz Creek (Noaxe Creek FSR Site 540)	Cascades District	\$112,621	Bridge installed	11 000 m High Value	Bull Trout spawning habitat
3. Kuldo FSR km 2.6	Skeena	\$51,500	Embedded culvert installed	250 m	Coho Salmon, Rainbow/Steelhead Trout, and Dolly Varden/Bull Trout
Sub-Total		\$??	3 remediations	11 250+ m	

In-Progress Projects (completion expected in 2019-20 or 2020/2021 depending on available funding)

Project	Location	2018/19 Costs	Activities	Habitat Gain when completed	Fish
4. Freeman Creek (see attached 'before' photos')	Kootenays	\$122,000	Habitat confirmations (2) Site plans and designs (2) Structure purchase (1) - 12 m concrete slab bridge Note: In-house structure to be used for second crossing	3 500 m Moderate Value	Westslope Cutthroat Trout (blue-listed); possibly also Bull Trout and Rainbow Trout. Rearing habitat
5. Gollen Creek (Drains into North Adams River)	Thompson Rivers District	\$50,000	Habitat confirmations, site plan Initial site prep Intent is to purchase bridge 19/20 and install it 20/21	6000 m {370 m+ are High Value spawning and rearing habitat}	Sockeye Salmon, Chinook Salmon, Coho Salmon, Pink Salmon, Steelhead, Bull Trout, Rainbow Trout
6. North Thompson FSR 17 km	Thompson Rivers District	\$60,000	Structure purchase – 10 m concrete slab bridge	975 m High Value Rearing Habitat	Coho Salmon and other species
7. Iron River FSR Main	Vancouver Island	??	Structure purchase - bridge	1 500 m	Coho Salmon and Coastal Cutthroat Trout
8. Mary Lake Creek	Vancouver Island	??	Bypass road constructed to enable deactivation in 19/20	625 m	Coho Salmon, Coastal Cutthroat Trout
Sub-Total		\$??			

Total spent for fish passage remediation related work = \$

1. Mary Creek (Menzies Mainline) Fish Passage Remediation Project

Project Objectives
T
Project Costs 18/19
\$
Project Results
Project delivery thanks to Dave Hamilton – BC Timber Sales – Strait of Georgia for managing the project.

2. Quartz Creek Remediation Project



Have requested after photo

Project Objectives
To remove two culverts that are impeding fish passage with two fish friendly bridge crossing structures at Quartz Creek (Site 540).
Project Costs 2018/19
\$70,000
Project Delivery
Project delivery thanks to Brian J. Moore, Cascades Natural Resource District, for managing the project.

3. Kuldo FSR km 2.6



Project Objectives	
To remove a culvert that is impeding fish passage with a fish friendly embedded culvert structure at Kuldo Forest Service Road (FSR) km 2.6 in the Skeena area.	
Project Costs 2018/19	
\$51,500	
Project Delivery	
Project delivery thanks to Alan Harrison and John Thibeau, BC Timber Sales - Skeena for managing the project.	

4. Freeman Creek – Two Crossings; in progress (completion expected 19/20)

Outlet photos for two crossings: PSCIS #415 and #417 (from left to right)



Project Objectives	
In 2019/20, to remove two culverts that are impeding fish passage with two fish friendly bridges on Freeman Creek that drains into West Yahk River near Yahk, BC	
Project Costs 2018/19	
\$122,000 for 2 habitat confirmations, 2 site plans/designs, and purchase of one 12 m concrete slab bridge. Note: The second bridge structure is being kindly provided by Rocky Mountain District from an existing used structure.	
Project Delivery	
Project delivery thanks to Phil MacDonald BC Timber Sales - Kootenay for managing the project.	

4. Gollen Creek – in progress (completion expected 20/21)