Restoring Fish Passage in the Fraser Region - 2025

Executive Summary

S E R N B C

SOCIETY FOR ECOSYSTEM RESTORATION IN NORTHERN BRITISH COLUMBIA

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Prepared for the Habitat Conservation Trust Foundation and the Ministry of Transportation and Infrastructure

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on behalf of the Society for Ecosystem Restoration in Northern British Columbia

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Executive Summary (PDF)

This report is available as a PDF and as an online interactive report at https://www.newgraphenvironment.com/fish_passage_fraser_2025_reporting/. We recommend viewing online as the web-hosted HTML version contains more features and is more easily navigable. Please reference the website for the latest version stamped PDF from fish_passage_template_reporting.pdf.

Since 2023, the Society for Ecosystem Restoration Northern British Columbia (SERNbc), with support from the Ministry of Transportation and Infrastructure, has been actively involved in planning, coordinating, and conducting fish passage restoration efforts within the Nechako River, Lower Chilako River, Morkhill River, Upper Fraser River, and François Lake watershed groups which are sub-basins of the Upper Fraser River watershed.

The primary objective of this project is to identify and prioritize fish passage barriers within study areas, develop comprehensive restoration plans to address these barriers, and foster momentum for broader ecosystem restoration initiatives. While the primary focus is on fish passage, this work also serves as a lens through which to view the broader ecosystems, leveraging efforts to build capacity for ecosystem restoration and improving our understanding of watershed health. We recognize that the health of life - such as our own - and the health of our surroundings are interconnected, with our overall well-being dependent on the health of our environment.

Although the main purpose of this report is to document field work data and results, it also builds on reporting from past field activities and all reports can be considered living documents that can be updated and improved over time. In addition to the numerous assessments at sites undocumented in past years of the project, field activities in 2024 were also conducted at sites where habitat confirmations were previously documented within the reports linked below. The reports for these sites were edited and updated with data.

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Fish passage assessment procedures conducted through SERNbc in the Upper Fraser River Watershed since 2023 are amalgamated online within the Results and Discussion section of the report found here which includes links to project reporting for each site.

In 2025, the project area was expanded to include the Willow river, Lower Salmon River, and Tabor River watershed groups. Fish passage assessments were completed at 12 new sites, focusing on structures with potential barriers to upstream fish movement using standard provincial criteria.

Habitat confirmation assessments were conducted at multiple sites within the Willow river and Tabor River watersheds, covering over XX km of stream length. Detailed habitat metrics were documented alongside eDNA samples to evaluate habitat quality and presence of fish species.

New in 2025, environmental DNA (eDNA) sampling was incorporated into the program at both previously assessed and newly added sites. A total of 93 samples were collected across 35 streams.

Monitoring was conducted at two sites, including post-remediation evaluations at PSCIS crossings 196085 and 196200. Monitoring included eDNA sampling and habitat observations. A custom effectiveness monitoring form tailored to fish passage projects was used and metrics assessed included flow velocity, substrate condition, channel constriction, riparian condition, and cover availability.

A major challenge in advancing fish passage restoration is the complexity of working across jurisdictions and with multiple stakeholders—rail and highway authorities, forestry ministries, licensees, and private landowners. These partners are often being asked to accommodate priorities that originate outside their mandates and budgets. Convincing them to invest in difficult, high-cost interventions—like modifying crossings or relocating infrastructure—requires navigating uncertainty about costs and ecological outcomes, as well as a disconnect between the benefits to watershed health and the internal pressures or performance goals of these agencies. It's a tough ask: to take on massive, uncertain projects when they're already stretched thin with their own responsibilities.

Fish passage restoration across British Columbia is further complicated by the legacy of infrastructure deeply embedded in the landscape. Roads, railways, highways, community infrastructure and private assets often constrain floodplains and disrupt natural hydrological processes. While targeted repairs to individual barriers are essential, they won't resolve the broader systemic issues without rethinking and restructuring how infrastructure interacts with watershed function. Loss of riparian vegetation and intensive beaver management only add to the degradation. Addressing these challenges means making strategic, well-communicated choices—picking battles carefully, building trust, and staying committed to a longer-term transformation.

While preliminary top remediation priorities are provided by watershed group, these rankings are inherently subjective and can depend on the capacity and willingness of infrastructure owners and tenure holders to support implementation—both financially and over the often multi-year project timelines. In practice, we must often act opportunistically, pursuing simpler, lower-cost options to maintain momentum and achieve near-term progress.

NEEDS TO BE UPDATED

To enhance fish passage restoration in the FWCP Peace Region:

- Maintain strong partnerships to support funding, site selection, remediation, and monitoring through adaptive management informed by traditional knowledge and real-time data.
- Prioritize detailed assessments in areas with blockages and high habitat potential, especially near McLeod Lake.
- Use climate modeling to prioritize crossings that enable access to cold, drought-resistant habitats.
- Secure financial commitments for Fern Creek remediation despite uncertainties in harvest planning.
- Continue effectiveness monitoring at key sites using fish sampling, eDNA, PIT tagging, temperature data, and aerial imagery.
- Continue to develop a cost-effective monitoring framework to assess productivity gains from improved passage.
- Collaborate with WLRS, UNC, local fisheries experts, FWCP, and the CEMPRA Project working group.
- Utilize environmental DNA (eDNA) to better understand bull trout and Arctic grayling habitat use at both potential and remediated sites. This will refine prioritization and assess fish passage effectiveness.