

Thompson-Shuswap Salmon Collaborative

Strategic Planning Framework

Approved as a Draft Living Document on November 5, 2021



Introduction

Secwepemc Fisheries Commission (SFC), Department of Fisheries and Oceans (DFO), and BC Ministry of Forests, Lands, Natural Resource Operations and Rural Development (FLNRORD) have established the Thompson-Shuswap Salmon Collaborative (the “TSSC”).

The overall purpose of the TSSC is to establish a non-political, innovative, watershed-based planning process involving three orders of government to proactively and meaningfully coordinate, prioritize, guide, plan and/or influence, and implement anadromous salmonid conservation and restoration in the Thompson-Shuswap watershed. The scope of the work will involve anadromous salmonid populations (or conservation units) and their habitats that occur in the entire Thompson River Watershed upstream from the confluence of the Bonaparte River including Sockeye, Chinook, Coho, and Pink salmon, and Steelhead trout.

This document is intended to provide a regional strategic planning framework (the “**Framework**”) for the TSSC to use as a tool in the development, implementation, and evaluation of Salmonid Conservation and Restoration Action Plans. It is an evergreen document that will be updated as required.

Planning Principles

<i>Strategic</i>	Focusing on achieving the greatest value or benefits with the available resources;
<i>Adaptive</i>	Changing to suit evolving conditions, such as climate change, wildfires, etc.;
<i>Fish First</i>	Addressing fish and fish habitat protection and rehabilitation objectives;
<i>Freshwater Focused</i>	Considering only freshwater issues in the Thompson-Shuswap watershed region;
<i>Action-Oriented</i>	Arriving at practical, realistic actions, and achievable solutions;
<i>Balanced-Approach</i>	Acknowledging that strategic planning must occur in concert with immediate actions;
<i>Two-Eyed Seeing</i>	Considering both Indigenous knowledge and mainstream (Western) science perspectives.

3.0 Elements of the Framework

The Framework consists of the following steps viewed as an iterative and adaptive cycle.

Step 1 Assess the Situation

Broad-Scale Assessments (for Thompson-Shuswap region)

TSSC will conduct a broad scale assessment to prioritize watersheds for further protection and restoration. This will be led by the TSSC Implementation Team with support from the TSSC Technical Team.

- Explore the applicability of using available interactive mapping tools and existing GIS data layers to support the prioritization of assessments (*see Appendix 2*).
- Determine appropriate planning units to use in the Thompson-Shuswap region (i.e., watershed boundaries, presence of anadromous salmonids).
- Identify the status and distribution of all anadromous salmonid CUs (i.e., using COSEWIC or WSP status).
- Prioritize CUs for protection and restoration using appropriate methodology (e.g., rate of decline, absolute decline, population levels, overlapping spatial areas, etc.).
- Collect information pertaining to biophysical conditions in all anadromous salmonid watersheds in the region including, but not limited to, the following sources and factors
 - SHIM
 - FHAP
 - Development pressures
 - Water temperatures,
 - Stream flows,
 - Channel stability,
 - Riparian condition,
 - Sedimentation,
 - Barriers to migration,
 - Water pollution,
 - Habitat complexity
 - Road density
- Develop or adopt an existing set of criteria and/or thresholds (such as drought-sensitive watersheds, high-value salmon habitats, over abundance of roads or cut blocks, fire)
- Rank/select candidate watersheds for detailed field assessments.

Detailed Field Assessments (for each candidate watershed)

TSSC will conduct detailed field assessments to validate and understand the extent of threats to better inform Action Plans. This will be led or overseen by the TSSC Technical Team.

- Adopt appropriate methodologies for detailed field habitat assessments including, but not limited to, the threats that have been identified during broad scale assessment activities.
- Complete the more detailed field assessments on candidate watersheds, and map the findings.

- Review relevant watershed planning processes (and/or recent projects) related to candidate watersheds (see Appendix 3).
- Identify key information gaps.
- Where possible assess potential impacts of climate change.
- Update/expand the assessments as new information, limiting factors, and threats become available.

Step 2 Prepare Action Plan(s)

Salmonid Conservation and Restoration Action Plans will be prepared following detailed field assessments on candidate watersheds.

Establish Objectives

- Review detailed field assessments and set watershed objectives such as:
 - reduce the generation and delivery of sediments from hillslopes to stream channels;
 - re-establish natural drainage patterns and water quality;
 - replace lost channel-structuring elements within streams to increase the amount and quality of fish habitat;
 - restore habitat within selected terrestrial, riparian and stream ecosystems towards naturalized hydrological conditions.

Evaluate Options to Address Objectives

- Lead by the TSSC Implementation Team with support from the TSSC Technical Team.
- Identify options to meet the objectives, such as but not limited to:
 - identification of cold water refugia for protection;
 - Upland stabilization;
 - Riparian restoration;
 - Stream crossing remediation.
- Identify and engage a panel of experts to provide TSSC with advice including evaluating detailed assessments, ranking limiting factors, overcoming information gaps, recovery potential, and recommending actions to meet objectives.

Prioritize Actions

- Evaluate and prioritize actions to address the objectives using criteria such as, but not exclusive to:
 - costs vs benefits;
 - feasibility;
 - potential effectiveness; and,
 - time-scale.
- Identify actions that will achieve the greatest benefits (i.e., maximize the restoration of at-risk salmon populations, while maintaining populations that are currently in good condition)
- Consider operational/logistical constraints of actions (such as site access, landowner cooperation, site maintenance requirements, risk of project failure, capacity to deliver)

- Not all actions considered need to be project-focused (i.e., policy, permitting, regulatory protection instruments, enforcement)

Prepare Salmonid Conservation and Restoration Action Plans

- Plans should contain the following elements:
 - Objectives to be achieved;
 - Activities, tasks and/or steps to be carried out to reach each objective;
 - Lead partners, jurisdictions or other organizations who will be in charge of carrying out each activity;
 - Schedule with deadlines and milestones;
 - Resources needed to complete the tasks and a plan to obtain them;
 - Permits and authorizations required;
 - Performance measures to evaluate progress.
- Plans should consider immediate, priority actions, as well as longer-term actions.
- Consider future maintenance and monitoring requirements.

Step 3 Implement Action Plan(s)

- Secure TSSC consensus agreement, endorsement and commitments to implement the Action Plan(s).
- Implement Action Plans based on each partner's authority, mandate, planning processes, and capacities (i.e., legislation, policies, regulations, field project operations, and monitoring).
- Coordinate implementation between the three governments including proposal preparation, submission, and delivery.
- Access resources and expertise required.

Step 4 Analyze, Monitor and Report

- Determine a monitoring framework.
- Conduct ongoing monitoring and assessment of TSSC implementation actions undertaken.
- Assess, interpret, and document project data.
- Summarize results against performance measures.
- Analyze outcomes of actions undertaken (i.e., evaluate effectiveness - costs vs benefits/impacts to fish, were objectives met?)
- Evaluate the sustainability of actions taken (i.e., are there new threats upstream/upslope, other activities in the watershed)

Step 5 Provide Feedback to Adapt Future Action Plans

- Conduct an internal annual review of all implementation actions to make recommendations to improve future TSSC planning.
- Consider any new information or research findings pointing to alternatives solutions to addressing limiting factors.

Step 6 Share Guidance and Recommendations

- Share the annual lessons learned as guidance to external groups and/or processes when implementing salmon conservation and restoration initiatives.

Appendices

Appendix 1: Terminology and Acronyms

- CEA – cumulative effects assessment
- CU – conservation unit
- FHAP – fish habitat assessment procedures
- GIS – geographic information system
- SHIM - sensitive habitat inventory mapping
- TSSC – Thompson-Shuswap Salmon Collaborative
- WSP – Wild Salmon Policy
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Appendix 2: Possible GIS Data Layers for Interactive Mapping

- Region and watershed boundaries,
- Anadromous salmonid spawning and rearing areas
- Salmon CU status by watershed
- Water licenses, water intakes and groundwater wells
- Drought levels
- SHIM locations
- Previous habitat restoration project locations

Example Fish Habitat Indicators: from Skeena Sustainability Assessment Report

- Road Density
 - Road/Stream Crossing Density
 - Road Density near Streams
 - Road Density on Steep (Potentially Unstable) Slopes
 - Equivalent Clearcut Area (ECA) (peak flow impacts)
 - Young Second Growth Forest (low flow impacts)
 - Riparian Disturbance
 - Total Land Disturbance
 - Dams and Impoundments
 - Water Licenses
 - Groundwater Wells
 - Water Allocation Restrictions
 - Mines
 - Point Source Pollution
 - Low Flow Sensitivity
 - Drainage Density Ruggedness
 - Lakes and Wetlands (and Man-made Waterbodies)
 - Salmonid Habitat Extent
 - Salmon Spawning Extent
 - Salmon Escapement
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- Indigenous knowledge indicators
 - Culturally important fishing areas

Province's mapping sites:

GeoBC: <https://www2.gov.bc.ca/gov/content/data/about-data-management/geobc>

iMapBC: <https://www2.gov.bc.ca/gov/content/data/geographic-data-services/web-based-mapping/imapbc>

Appendix 3: Information Sources

- COSEWIC threat analyses and Recovery Potential Assessments (RPAs)
- Wild Salmon Policy (WSP) implementation plan - key habitat characteristics, benchmarks
- DFO stock assessment information
- Pacific Salmon Foundation (PSF) Pacific Salmon Explorer (PSE)
 - 12 Habitat Pressure Indicators for watersheds assessed individually and rolled up into cumulative pressures:
 - (1) forest disturbance (% of watershed logged);
 - (2) equivalent clearcut area (% of watershed cleared for human use);
 - (3) insect and disease defoliation (% of forest stands killed);
 - (4) riparian disturbance (% of riparian zone);
 - (5) road development (km/km²);
 - (6) water licenses (# of licenses);
 - (7) stream crossing density (# of crossings/km);
 - (8) total land cover alteration (% of watershed);
 - (9) impervious surfaces (% of watershed);
 - (10) linear development (km/km²);
 - (11) mining development (# of mines);
 - (12) permitted wastewater discharges (# of discharge sites).
 - Future habitat pressures
 - Salmon population information
 - spawner survey stream locations
 - spawner surveys
 - juvenile survey stream locations
 - juvenile surveys
 - hatchery release site locations
 - hatchery releases
 - spawner abundance
 - run timing
 - compare to other CUs
 - catch and run
 - recruits-per-spawner
 - trends in spawner abundance
- DFO watershed reports (out of date; FBC updated [Thompson-Shuswap](#) in 2016)
- Watershed assessments (BC, forest licensees)
- Cumulative effects assessments (CEAs) (BC, Adams Lake Band - ALCES)
- SHIM, FIM (foreshore inventory and mapping), and AHI (aquatic habitat index) ratings:
 - Shuswap Lake (circa 2010)
 - South Thompson/Thompson (2016)
 - Deadman R. (?)
 - Bessette Cr. (2020 & 2021)
 - Bonaparte R. (2019)
 - Louis Cr. (planned for 2022)

- Salmon R. (2021?)
- Ortho-imagery and/or LIDAR data
- Indigenous knowledge (respecting data ownership and information sharing protocols)
- COSEWIC assessments - links to reports