Fraser Salmon & Watersheds Program

PACIFIC SALMON FOUNDATION

Fraser Basin Council

2008 Final Report Template

FSWP File Number*	FSWP 09 103

*Please use the FSWP File Number provided in previous FSWP 2008 project correspondence

Contact Information

Sponsoring Organization's Legal Name						
Xwisten (Bridge River Indian Band)						
Are you a federally registered Charity, Non-profit organization or Business (Yes /No)?						
If yes, please indicate which.		Charity	X	Non-profit organization		Business
Registration number				GST number		
Are you a registered Society (Yes / No)?				Society Registration number		

Mailing Address
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[1] *All correspondence will be directed to the Project Manager.*

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Project Information

Project Title

Apple Springs Salmon Habitat Restoration Project for the Lower Bridge River

Project Location

Lower Bridge River

Amount Requested	$50,000	Total Project Value	$90,000	Non-FSWP funds[2]	$40,000

[2] *Non-FSWP funds include both cash and in-kind funding. In-kind funding refers to all non-cash contributions such as equipment, supplies, labour, etc. Please refer to Budget Section for further details.*

Project Summary

Please provide a single paragraph describing how your project has satisfied at least one of the FSWP priority activities. As this summary will be used in program communications, clearly state the issue addressed and avoid overly technical descriptions. Do not use more than 300 words.

This project addresses the **Habitat and Water Restoration and Stewardship** priority activity. It is designed to mitigate some of the hydro impacts on St'át'imc fisheries resources. Bridge River salmon populations have been severely affected by the construction of the Terzaghi Dam and the operation of Carpenter Reservoir. The Terzaghi Dam blocked upstream salmon migrations and a number of populations were extirpated. This project, located in the Bridge River below the dam, may effectively mitigate some of the historic and present impacts. Several agencies including DFO, Xwisten and BC Hydro have investigated fish habitats and mitigation strategies in the Lower Bridge River. Feasibility studies have identified a number of habitat development projects in the Bridge River, including Applespring which has been rated as a good project. The project is designed to benefit Coho salmon primarily. During 2008, rearing ponds and a 400 m fish channel were excavated. A prefabricated concrete water intake will be installed in 2009 at the upstream end of the channel structure.

OPTIONAL If your project lends itself to sparking interest through a compelling sound byte (for potential use in FSWP media communications); please tell us what that sound byte would be. Do not use more than 150 words.

Species and life stage(s) the project targets: please list
Juvenile and adult Chinook, Coho, steelhead and pink salmon as well as rainbow and bull trout

Watershed(s) the project targets: please list
Bridge River Watershed

Project Deliverables and Results

- Paste in the deliverables outlined in your Detailed Proposal (question #3 under project 'relevance and significance' heading) into the table below. Then, please list the results associated with each deliverable.
- Please include copies of any relevant communications products (brochures, posters, videos, website addresses etc.) resulting from this project.

Deliverable	Result
The main deliverable will be an approximately 400 m long spawning and rearing channel that will have minimal operating costs	**During 2008, we excavated the channel and several rearing ponds. The project will be completed in 2009 following the installation of a flow control structure.**

Project Effectiveness

Please evaluate the effectiveness of the project, using the objective standards, quantifiable criteria and/or quality control measures identified in your Detailed Proposal (under question #1 in the 'performance expectations' heading).

Project effectiveness will be determined following a biological assessment of channel functionality for salmon populations (to be undertaken in 2010 when the new channels are fully functional). This future assessment will to be undertaken by Northern St'at'imc Fisheries as part of the BC Hydro Fisheries Mitigation Program after suitable time has elapsed for the channel to stabilize and reach biological equilibrium. Pre-project data will be provided via the extensive fisheries data base that has been collected under the Water Use Plan in adjacent areas of the Lower Bridge River. A 400m excavated channel was the objective for the project in 2008.

What are the top three lessons learned from this project that would be important to communicate to others doing similar work throughout the Basin?

1. This project was an effective collaboration between Bridge River Band and DFO. There are potentially large win-win benefits from First Nations-DFO collaboration on fisheries habitat restoration projects.

2. Bridge River Band can effectively undertake fisheries habitat projects in the Lower Bridge River under the supervision of fisheries engineers.

3. Choose initial projects that are located close to home to simplify logistics.

Project Effectiveness

Please describe how your project has addressed each Priority Activity identified in your Detailed Proposal.

Priority Activity[1]	How the Priority Activity has been Addressed
This project responds to: "Initiatives which restore habitat for salmon, particularly within high priority watersheds". This project is the best available opportunity for fish habitat restoration in the Bridge River watershed and will result in salmon production gains in the Lower Bridge River. It is expected that Coho salmon will be the primary beneficiary, with secondary benefits for Chinook and pink salmon.	Construction of the channel (2008) and installation of the flow control structure (2009) will provide a net habitat gain of approximately 1km^2 for salmon and trout.

[1]Please paste each priority activity identified in your Detailed Proposal in the space provided.

Further Comments (optional)

Please provide any further comments including recommendations for future conservation efforts and suggestions for helping partners to meet the goals of the Fraser Salmon and Watersheds Program. If relevant, we encourage you to attach a narrative report or additional project products (e.g. maps, photos) as an appendix.

8) Appendix (optional)

In the May of 2004, Bridge River Fisheries approached Fisheries & Oceans Canada's Resource Restoration Unit (RRU) for technical support on developing an off channel fish habitat restoration project at the Apple Springs site on the Bridge River. This site is located within the Bridge River Indian Reserve, and was the location of a placer mine. After viewing this site, RRU determined that there was potential to develop a restoration project. A topographic survey was carried out by RRU in the fall of 2004, and a design and drawing compiled detailing an off channel development (DFO Drawing # 200104.dwg attached). This proposed design included excavation of 5054 square meters of pond and connecting channels, and the installation of a 140 meter long pipeline and river intake structure.

In 2008, Bridge River Fisheries received funding through the Fraser Salmon & Watersheds Program for Phase 1 of this proposal. This phase included the excavation of the channel and pond complex, installation of woody material, and livestock exclusion fencing. Phase 2, which includes the purchase of materials and installation of the river intake and associated piping, will be submitted for funding in 2009.

In early summer of 2008, RRU & Bridge River Fisheries carried out soil and groundwater testing to determine sub surface soil conditions and to monitor groundwater levels over the next few months. This would ensure substrate material and design depths for the ponds and channels are adequate.

At the end of August 2008, in anticipation of commencing construction, the ponds and channel layout were surveyed and staked out. On Oct 15th, construction commenced with equipment provided by the Bridge River Indian Band. RRU provided technical on site support to the Bridge River Fisheries staff for construction of this project. This included training Bridge River Fisheries on-site staff on grade control and general construction procedures to complete the excavation of the pond and channel complex.

Approximately 800 m of 5-strand barb wire fence was installed to protect the complex and its riparian area from livestock.

Large woody material was placed and anchored, using boulders, through out the channel to add additional fish habitat values.

Additional woody material, culvert access crossing and intake installation are planned for 2009, subject to funding.

Applespring Salmon Habitat Restoration Project for the Lower Bridge River

Xwisten (Bridge River Band) have been aware of the potential for the site since 1980 when a Fisheries Biologist (Tom Crawford-paper available) drew up plans for a hatchery at this site. Xwisten and DFO submitted an application with Bridge Coastal Fish and Wildlife Restoration Program (BCRP) in 2003 to conduct a Habitat Restoration Feasibility Study 2003- 2004. At first works were unable to be started until BC Hydro had finished an Aquatic Monitoring Project on the Lower Bridge River, to determine what impacts there are on fish with the different flow regimes. We were able to continue with this project when BC Hydro determined that there would be very negligible effect

with any works done below the Bridge/ Yalakom confluence.
In June we, BC Hydro, DFO and Xwisten held a site visit and a photo opportunity visit. Waited until an excavator became available for test holes to be placed at the work site, using drawings from Oct/04, work was started on the channels and ponds. Work progressed very nicely until we were at the largest pond where we noticed that work fell behind with the large amount of material that needed to be moved, an front-end loader/operator was required to move this extra material, this was extra costs to the project. We had to move spoil piles from a placer mining operation conducted by a band member from prior years, again added costs to project. Time was spent to gather willow whips to be place on the banks, surprisingly there were very few willow near the work site, because cattle ate most of the willow. A fence was required to exclude the cattle from the site, again added costs. While construction of the fence was happening trees were gathered for the project for large woody debris, with use of a skidder/operator, costs.