

Fraser Salmon & Watersheds Program



Fraser Basin Council

2009/10 FINAL REPORT

FSWP File Number 07350-35/FSWP 09 D SIFM 88

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

1. Project Information			
1.1 Project Title			
2009 NSTC In-Season Salmon Abundance and Health Indicator Program			
1.2 Proponent's Legal Name			
Northern Shuswap Tribal Council Society			
1.3 Project Location			
Fraser River near Churn Creek. Within the Northern Secwepemc te Qelmuw traditional territory.			
1.4 Contact for this report			
Name: Gord Sterritt		Phone: 250.392.7361	Email: g.sterritt@nstq.org
1.5 Funding Amount			
Original Approved Grant Amount:	Total FSWP Expenditures:	Final Invoice Amount:	Final Non-FSWP leveraging, including cash and in-kind:
\$66,000.00	\$ 65,448.47	\$ 39,048.47	\$ 31,629.26

2. Project Summary

Please provide a single paragraph describing your project, its objectives, and the results. As this summary may be used in program communications, clearly state the issue(s) that were addressed and avoid overly technical descriptions. Maximum 500 words.

This NSTC fisheries project is a component of the involvement for assessing salmon enroute to the spawning areas, the data collected could prove valuable to the diminishing salmon stocks returning to and/or passing through the traditional territories of the Northern Secwepemc te Qelmuw (NSTQ). The data being collected could inform future fisheries as well as illustrate and verify theories on run dynamics. The success of this year's project comes with the collection of necessary biophysical data and completion of the five goals of the project, as follows:

1. Deploy and test the fishwheel at a new site 1km upstream from the Gang Ranch Bridge;
2. Review the comprehensive catch monitoring regime and implement changes recommended in 2008 to determine the feasibility of utilizing a traditional fishery as an indicator of stock abundance.
3. Compare the fishwheel and standardized dipnet fishery Catch Per Unit Effort (CPUE) for similarities and differences,
4. Continue testing the feasibility of utilizing the fishwheel as a live capture and release platform for

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tagging and the collection of biophysical information of sockeye, chinook and coho and, 5. Increase the capacity of the Northern Shuswap Tribal Council Fisheries Program through training, employment, project management and project tasks associated with the successful completion of this project. These goals were successfully accomplished, adding to the ongoing compilation of information gathered by the NSTC fisheries program that continues to shape the resources' future management.

As for data collected; in 2009, the fishwheel successfully live captured 692 sockeye (323 female, 364 male and 5 unknown) during the study period. Other species captured were 6 chinook, 37 pink and 1 White Sturgeon. Additionally the wheel captured approximately 900 pink salmon and 1 coho in a late season deployment of the fishwheel in a effort to live capture and tag some Interior Fraser Coho.

OPTIONAL Please give a short statement (up to 100 words) of the most compelling activity or outcome from your project.

3. Final Project Results and Effectiveness

3.1 Copy EXPECTED OUTCOMES from your detailed proposal and insert into this section. Add additional rows as needed. Then please list the FINAL OUTCOMES (the tangible and products resulting from this work) associated with expected outcome.

If FINAL OUTCOMES differ from the original EXPECTED OUTCOMES, please describe why, and the implications for the project.

EXPECTED OUTCOMES	FINAL OUTCOMES
<p>1. Evaluation of the feasibility of a test fishery in the Upper Fraser River that relies on a combination of the traditional fishing methods of the Northern Secwepemc and modern fishwheel technology.</p>	<p>The results of this year's project demonstrate that with experience and increasing knowledge of the dynamics of the run in this area that the Churn Creek Fishwheel has the potential to inform fisheries in the area as well as verify run predictions past lower river test fisheries and enumeration projects. The project allowed the NSTC's fisheries program access to near real time information on run strength and timing in the area that was passed on to the Northern Secwepemc Qelmuw (NStQ) fishers, and helped inform the requirement for conservation measures to be taken by the NStQ, when the sockeye run failed to materialize. The data from the traditional fishery is a valuable component of the project, however it is apparent that relying solely on dipnet fishery would not provide the information required to inform FSC and possibly future inland economic fisheries.</p>
<p>2. CPUE estimates for sockeye in the Upper Fraser River, below the Chilcotin River confluence, as well as above at Soda Creek.</p>	<p>Comparison to the Jejeba7 traditional sites CPUE was intended to demonstrate a correlation between that of the traditional fishing method and</p>

the fishwheel. Unfortunately there are a couple factors that do not permit for a strong enough correlation to be formed to suggest a true similarity at this time. It is only due to having attempted the comparisons of these sites that has allowed for the understandings of the differences between these methods. The factors are that the

1. The fishwheel fished non-stop but didn't record exact times of the catches.
2. Dipnet fishery only fished 5 days per week and 6 hours per day.

3. Build on current reporting of the FSC fisheries and develop a near-real time data reporting system that may provide results in a timely fashion for in-river, in-season management purposes; and

With the implementation of the standardized dipnet fishery, data was accumulated that filled in the gaps of the FSC fisheries. This allowed for a more informed fishery and less interpolation of data collected for the NStQ fisheries through the catch monitoring program. With the fishwheel becoming more stabilized due to a better site selection the project is illustrating that the results are becoming closer to being reported on a daily basis, which is the ultimate goal for the project.

4. Advance collaboration between the Northern Secwepemc to Qelmuw communities in terms of fisheries management, with the intention of promoting collaboration between the Northern Shuswap and other First Nations in the area.

In 2009 the data that was collected was utilized to inform NStQ Fisheries about the health and abundance of sockeye in the river. NStQ communities see the potential for this sampling platform to inform their fisheries in the future and make fishing decisions in advance of upstream fisheries. Similarly First Nations upstream of the project on occasion in 2009 requested information on observations of the run size at the wheel and what the thoughts may be for fisheries in the days following.

Please evaluate the EFFECTIVENESS of your project in achieving Project objectives. Please identify the indicators you have used to measure the effectiveness of your project. Please include any notable successes or challenges.

The continued and virtually uninterrupted collection of data and samples from the fish live captured in the fishwheel illustrates the effectiveness of the project in achieving the objectives. The project has proven to be a suitable and feasible sampling platform in the upper Fraser River. The data collected has the potential to be distributed near real time and fisheries have been informed by the data collected. In addition more NStQ people are being trained as fisheries technicians as a result.

The Churn Creek Fish wheel made for a stable and suitable sampling platform that allowed for the collection of important and interesting data on the 2009 sockeye salmon runs. For this reason the fishwheel will prove to be a success for years to come. The wheel was operated on a midnight to midnight 24 hour basis in order to more accurately display daily catch as recommended at the end of the 2008 fishwheel project. This worked well as the exact number of fish per day should have been able to be recorded. Unfortunately on more than one occasion it was observed that sockeye were jumping out of the live bins and into the river avoiding data entry. The other recommendation of relocating the wheel was also followed, as a step to avoid data tampering and down time incurred from vandalism. This worked very well as there was no sign on the fishwheel or the beach that anyone had been near the wheel other than that of the technicians working on it. In circumstances similar to last year the fishwheel saw some unexpected problems as fast drops in water level caused wheel stoppages due to grounding, forcing the crew to reposition the wheel further out into the river as water levels continued to drop all summer. The longest stop in time was caused by the failure of an older slider that was reused

form the year previously. This stoppage prevented the wheel from operating for two days. The ability of the fishwheel, at this new location, to catch fish of all sizes, and species, and serve as a stable and suitable sampling platform displays the capability and usefulness of this tool for the future development of the Northern Shuswap role in providing data and developing capacity for a future in the collaborative management of Fraser River salmon stocks and ultimately the shared decision making in the management activities pertaining to the salmon that return to the traditional territories of the Northern Secwepemc.

3. REQUIRED: attach all DOCUMENTATION of final outcome and management here. This may include technical reports, maps, photos, video, etc. communications, lists of meeting participants, etc.

1. Draft technical report via email.

3. Please describe how the benefits of this project will be realized and/or be built upon into the future. What are the next steps or recommendations for future work if applicable?

The benefits that this project is producing for the NSTQ people and their fisheries, in addition to all fisheries, upstream and below will continue to be advanced. By utilizing this project as a "test" fishery in the upper river we can inform lower river and marine fisheries if the fish are actually materializing, they may have to curtail or adjust fisheries to ensure that conservation measures are met. This is also true for upstream fisheries and projects such as demo fisheries, demo fisheries continue to develop and for this reason a in-season/in-river sampling platform is essential, so that we can avoid mistakes that have occurred in the past.

In order to ensure that the benefits of the project are sustained it is recommended that this project continue as sampling platform for in season health and abundance in the upper river as well as refine particular studies to meet the need of understanding changes to the environment and the effects on the fish. Recommendations for the project for the future are outlined below:

- Manufacture and install live bin covers to prevent fish from escaping. These covers should incorporate a funnel type system that would safely catch fish and reduce some stress of capture.
- Prior to the spring melt install anchors at different water levels. As water levels drop the fishwheel can be pushed out faster and easier, thus reducing down time.
- Incorporate lighting and a charging station on the fish wheel to provide adequate light for the operation of the fishwheel at night.
- Bilge pumps that can be hooked up to the lighting system to pump water out of the pontoons, would be an improvement of convenience.
- Develop an onsite dip net fish site that is close to the wheel and monitor the wheel catch and dip net catch during the same time frame to ensure the best possible comparison for CPUE. This may be an alternative to the Jejeba7 site.
- If retaining the Jejeba7 site as a standardized fishery then expand the Jejeba7 standardized dip net fishery to a seven day a week fishing schedule. With this record exact start and stop times along with date to later be compared to the same time fished on the fishwheel if crews are present to monitor catch for same period of time.
- Better recording methods for scarring of the salmon that are caught, either by photo or description.

- Have all the DNA samples that are collected from past and future years analysed and compare it to daily fork length and other biophysical data along with run timing.
- Following up with the Ministry of Environment to see about developing a procedure for sampling White sturgeon and the loan of a pit tag reader in order to perhaps identify already tagged sturgeon.
- Prior to the start up of sampling order an adequate number of T-Bar tags (with NSTC contact information) and a ready supply of DNA vials, all labelled and filled with ethanol for a more comprehensive sample.
- Discuss with Dave Patterson the possibility of conducting stress related tests on sockeye caught at the fishwheel throughout the season to look at the level of stress the salmon are enduring during migration.

3.5 What are the top three lessons learned from this project that could be useful to communities in other food management work in the Basin?

1. The greatest lesson learned is communication. It is essential to ensure that local communities are aware of the project and its purpose in order to avoid any misconceptions prior to commencement of the project. Community Fisheries Reps were instrumental in ensuring that they talked to community members and inform them of the projects purposes and benefits. On the larger scale, communication to the other First Nations about the project is also essential as those first nations quickly realize where they can get information to plan for fisheries (FSC and Demo).
2. Importance of building capacity within the community. Through projects such as this the NSTC has learned that building local capacity for fisheries management results in more information being traded. It also instills pride in the communities and technicians that are working on the project for a purpose.
3. The need for in-season/in-river information. 2009 proved to be a challenging year for fisheries managers. The information that was being collected on a daily basis helped inform a "soft" closure by the NSTC on NStQ fisheries.