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# 2014 UPPER FRASER ECONOMIC FISHERY REPORT

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## Executive Summary

The UFFCA continues to manage the Upper Fraser Commercial Fishing Enterprise, providing management and administration of the CFE agreement. Additional activities included obtaining the appropriate licensing for the sale of fish and participating in various processes on behalf of the CFE. The UFFCA Executive Director is also a member of the Inland Salmon Producers Board and thus participates in ISPA functions as well as the PICFI Refresh process led by Kevin Fram and Sarah Murdoch of DFO. Members/participants of ISPA from the Upper Fraser also include those from the Xeni Gwet'in, Northern Shuswap Tribal Council and the Tsilhqot'in National Government, ensuring a collaborative process and greater knowledge transfer.

Fisheries planning in 2014 focused on the Chilcotin and Chilko fisheries and included the Tsilhqot'in National Government, Xeni Gwet'in First Nations Government and the Northern Shuswap Tribal Council as well as the Upper Fraser Fisheries Conservation Alliance. These groups also collaborated on the installation and operation of 2 fishwheels on the Chilcotin River. Planning and preparation for the Fraser Lake Fishery included the Stellat'en First Nation, Carrier-Sekani Tribal Council and Upper Fraser Fisheries Conservation Alliance as well as DFO. This seine fishery was planned for late in the season and mobilized quickly. Operations included landing support, catch monitoring and fishery support. The landing site was provided by a private landowner located approximately 400 metres from the fishing site. This opportunity provided quick transfer of fish harvested at the mouth of the Stellako River to refrigerated units located on site.

Two Upper Fraser Inland Commercial Fisheries were deployed in 2014. First the Chilcotin River Fishery that was briefly executed late in the season after acquiring TNG Leadership approval. Due to the lateness of acquiring permission to execute this fishery, which was a result of the Mt. Polley disaster, this fishery occurred over a 1-day period and approximately 130 fish were harvested via fishwheel and dipnet. These fish became s.35 fish, for the use of UFFCA member communities as required.

The second fishery, which occurred in Fraser Lake, targeting Stellako sockeye was identified when it was realized that the escapement to the Stellako River was greater than what was required for spawning purposes – The Fraser Lake fishery was executed over a 1-week period, following a feasibility fishery to determine the viability of seine fishing in this area. This fishery was successful in identifying additional opportunities for the Upper Fraser FN as well in that it harvested and transported approximately 11888 sockeye to a processing facility in the lower mainland.

Both fisheries were supported in collaboration with the engaging the partners. In the case of the brief Chilcotin fishery the NSTC supported the fishery by providing personnel to operate the fishwheels, provide transportation as well as Dipnetting. TNG personnel travelled to Fraser Lake and provided landing site and monitoring support for the Stellako Fishery.

At the same time that the Fraser Lake fishery was occurring, a fishery also took place at Siska in the Fraser Canyon a short distance downstream from Lytton, BC. In 2014 the Upper Fraser Commercial Fishing Enterprise (UF CFE) worked to collaborate with the Siska Traditions Society (operating on behalf of Siska First Nation) on enterprise development. Siska shares many common principles with

the UFFCA, including the overriding principle of conservation and FSC priority, and notably, Siska recently become a signatory to the ISPA Charter for Responsible Trade. This fishery started on September 26, 2014 and was a collaborative project with the Okanagan Nation Alliance, UF CFE, Harrison, ISPA and Siska. 4791 sockeye were harvested over a 8-day period.

In addition to the executed fisheries in the Upper Fraser, the UF CFE also successfully worked through an exercise to transfer a component of the UF CFE share of the sockeye TAC to the Musqueam Fishery in the lower Fraser; this was following a successful exercise to transfer Pink Salmon in 2013. The 2014 exercise was more complicated with many moving parts, which included determining what components of the “aggregate” needed to be accessed, and in what percentages to reform the aggregate to the amount being transferred. The UF CFE and DFO spent considerable time ensuring the proper proportions of the different stocks that needed to be involved and the UF CFE worked also to obtaining permission from the groups to relinquish the appropriate portion of their share. The final amount transferred was 14,694 sockeye, broken down as follows.

<b>Shareholder</b>	<b>Amount Transferred from share</b>
Upper Fraser Fisheries Conservation Alliance	3% - 11,800 Upper Fraser Sockeye
Secwepemc Fisheries Commission	3.6% - 120 Raft/North Thompson (RNT)
Harrison Fisheries Authority	3.1% - 2774 (1992 Harrison and 982 Weaver/Birkenhead)

## **Chilcotin Fishwheels**

The Gitksan Watershed Authorities (GWA) has been involved in the research and design of selective fish harvesting methods since 1992. The Upper Fraser Conservation Alliance (UFFCA) is an organization that promotes sustainable fisheries management and practices. In 2014, under agreement with the UFFCA, the GWA initiated a project in the Cariboo – Chilcotin region to develop selective harvest methods, fishwheels, for use in the Chilcotin and Fraser Rivers near Williams Lake B.C.

### ***Objectives***

The objectives of this project were to locate suitable sites to deploy fishwheels on the Fraser and Chilcotin Rivers with focus on the Chilcotin River. This included designing, fabricating and testing of the fishwheels. The UFFCA priorities were to test a cantilever type and a smaller floating fishwheel in the Chilcotin River and refurbish the baskets for their existing larger floating fishwheel for use on the Fraser River, thus supporting s.35 fisheries and enhancing economic opportunities in the region. Further objectives involved providing employment and building capacity within the community.

### ***Methods and Materials***

#### **Site Identification**

In March of 2014, in order to determine the feasibility of fishwheels in the Chilcotin River, site visits were carried out and potential locations were identified. The materials were ordered based on these sites and construction commenced.

The sites identified and surveyed on the Fraser and Chilcotin Rivers were carried out in collaboration with UFFCA, Tsilhqot'in National Government (TNG), and Northern Shuswap Tribal Council Fisheries Personnel,

viewing preferred fishing (project) areas that had been identified on the Chilcotin River and Fraser Rivers. Travel was by road, viewing sites on the Fraser River downstream of Williams Lake (Gang Ranch and Sheep Creek areas) and on the Chilcotin River from Farwell Canyon upstream to below the confluence of the Chilko River with the Taseko River viewing potential sites within these areas. Following site visits we discussed locations and options for type and placement of fishwheels in the areas preferred by the UFFCA.

Later in the season, Gord Sterritt and Charlie Muldon travelled to the Chilcotin River and carried out a survey via jet boat. The area of Christie Road Bridge, upstream as well as downstream to Hanceville was surveyed for suitable locations to build on the project started in 2013/2014.

#### **Materials and Supplies**

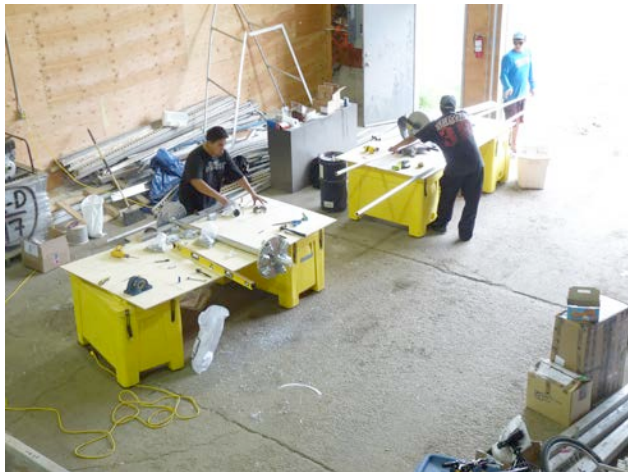
Following preliminary design of the fishwheel options for the areas selected, all required materials and supplies to fabricate: a cantilever type fishwheel, a small floating type fishwheel for testing in the Chilcotin River and as well additional materials to refurbish the baskets on the existing large floating fishwheel where ordered.

#### **Construction**

Final construction of the smaller floating and cantilever style fishwheels was completed on August 15. The construction of the cantilever style fishwheel was completed on August 19. Baskets of both of the cantilever and smaller floating fishwheels were constructed of one inch O.D., schedule 40 aluminum pipe and one inch (1") Kee Clamps©. The machined axles for both fishwheels were fabricated locally. One and a quarter inch (1 ¼") schedule 40 aluminum pipes and one and a quarter inch Kee

Clamps© were ordered for the existing large floating fishwheel.

Jon Mikkelson P. Eng. of the University of British Columbia who was employed by the GWA to assist in the project did the design of the fishwheels. Also to assist were four community members working on the project during construction; (AJ Sellars, Desmond Frank and Steven Meshue and Kevin Tenale). As part of the project objectives were to mentor and provide community members with experience on all aspects of fishwheel construction and operations, extra time was allowed for the participants to gain experience on all aspects of fabrication, construction and explanation of the construction process.



**Figure 1. Fisheries Technicians putting final touches on the axle and baskets.**



**Figure 2. Working on sliders.**

### **Site Preparation**

This aspect of the construction process could not occur until the water levels were close to in season levels as well as the ground being thawed to dig and build the foundation. So, as the fishwheels were going through final construction phases and adjustments at the UF-CFE shop located on the Williams Lake Indian Band Reserve aka Sugar Cane, the task of site preparation for the cantilever style fishwheel was carried out. Once the location was selected and surveyed and the position in the river that we wanted the baskets of the cantilever wheel to rotate at, we were then able to prepare the site, design and lay out the footings for the shore-based frame.



**Figure 3. Preparing the Chilcotin Cantilever Wheel Site.**



## Deployment

The small floating fishwheel was positioned in the Chilcotin River on August 16 for testing.



**Figure 4. Jon Mikkelson and Gord Sterritt launching the small Chilcotin Floating wheel by hand.**

Following the launch of the small Chilcotin Floating Fishwheel we immediately began to run some tests to determine the viability of this apparatus in the Chilcotin River system. The fishwheel was allowed to spin in the river over several hours to get an idea on how it reacted to the current and as well as depth of river as it “fished”. The wheel was moved around to test at various water velocities but was not set in place to fish permanently. After the initial spinning of the wheel, it was then moved back to shore and anchored so that work on the cantilever fishwheel could continue.

The final touches on the cantilever fishwheel were completed on August 19, 2015; the wheel was then moved to the site to complete the installation of the Chilcotin Cantilever Fishwheel. Once the installation was complete the cantilever fishwheel was tested immediately. It should be noted that due to the fact that water temperatures are lower than the summer air and metal contracts and expands in these changing conditions the Chilcotin Cantilever Fishwheel was allowed to spin for a few hours, then raised out of the water to check for loose bolts and Kee Clamps. This is a

regular practice that must be realized to ensure continuous operation.



**Figure 5. Making adjustments to the Chilcotin Cantilever Wheel.**

## Results

After the initial launch of the small floating fishwheel, attempts were made to find a suitable fishing location during the season for the smaller fishwheel. However, water levels and flows at sites identified earlier in August had changed over the course of a month. As a result of unsuitable sites due to changing river conditions the floating fishwheel did not fish continuously during the season. No fish were caught.

The cantilever fishwheel once deployed and refined fished through out the season. It was stopped briefly at various times to allow for such modifications as the frame to allow for the attachment of leads that would potentially increase the catch ability of the wheel. Another factor in fishability of the wheel is rotational speed. During the season the rotation speed of the fishwheel were just over 5 revolutions per minute (rpm) during the higher water levels down to just under 4 rpm at lower water levels later in season.

The recorded catch for the cantilever fishwheel from August 28 to September 17 was 908 sockeye (465 females and 443 males).

### ***Fishwheel Conclusions and Recommendations***

The smaller floating fishwheel with access limitations at the time of the project did delay the proper testing of this type of fishwheel on the Chilcotin River. Many of the locations with adequate access are areas utilized by the First Nations food fishers; we avoided displacing any fishers from their traditional fishing sites.

The cantilever fishwheel did fish continuously and this type of selective fishing with some refinements should harvest higher levels of sockeye salmon from the Chilcotin River. The rpm of this fishwheel was a little faster than the desired 3 rpm.

Further testing of the cantilever fishwheel with modifications and refinements would be worth looking into. With the majority of the work completed at the site of this fishwheel, labour and materials and supplies would be necessary to test the wheel for a full season. This would allow time to truly assess the viability of the cantilever type fishwheel for use on the Chilcotin River. It is known from 2014 that that there was some fish loss from the live box due to night time visitors, eliminating access to the live box and adequately covering the live box may deter some of the visitors from helping themselves to the fish captured as the wheel spins unattended.



**Figure 6. Visitor to the Fishwheel!**

### **Fraser Lake Seine Fishery**



**Figure 7. PICFI Seine Boat on Fraser Lake.**

In 2014, the UF CFE was challenged to implement an economic demonstration fishery in the Cariboo-Chilcotin Region due to the Mt. Polley disaster. Leadership from the area was reluctant to endorse a fishery of any type – s.35 let alone an economic demonstration fishery. While the issue was being deliberated, the potential to implement a fishery in the Upper Fraser region was being realized.

Through in-season updates of the escapement to the Stellako River and observations of the strong run to the area, it was quickly being realized that a fishery could occur in Fraser Lake targeting the Stellako River sockeye stock. Through consultation between Brian



Toth and Chief Archie Patrick of the Stellat'en First Nation and the Carrier Sekani Tribal Council, support to implement a demonstration fishery was acquired.

### **Objectives**

As in all inland fisheries, this fishery was implemented for several reasons, as follows:

1. Protect weaker stocks, while targeting the stronger returns.
2. Identify potential alternatives to access s.35 fish in the Fraser Lake area.
3. Identify potential alternatives to access economic demonstration fisheries in the Upper Fraser.

### **Methods and Materials**

#### **Site Identification**

The location for this fishery was immediately identified to be in Fraser Lake, at the outlet of the Stellako River into the lake. Reasons being were that the fish were observed holding in the lake at the outlet, it was suitable for seine fishing method and the location of a landing site was located a short distance away.



**Figure 8. Seine Site on Fraser Lake. Stellako River in Background!**

#### **Materials and Supplies**

Following identification of the fishing location and landing site, equipment was then brought in. DFO provided their modified herring punt to a seine boat for fishing. The UF CFE seine

boat was cleared out to make it the packer boat for this fishery. Totes were brought in from Williams Lake as well as Sts'ailes. The small forklift was delivered from Prince George.



**Figure 9. Stellako Landing Site @ Jim Danish's.**

### **Results**

The Stellako (Fraser Lake) Seine Fishery occurred over a period of 6 days, from September 23<sup>rd</sup>, 2014 to September 28<sup>th</sup>, 2014. During that period 11855 sockeye were harvested. In addition, there were records of most by-catch that was released immediately. These totals are as follows:

- Lake Trout – 15
- Whitefish – 1389
- Rainbow Trout – 156
- Suckers - 950

The by-catch was released by hand and with small trout dip nets. It should be noted that one set that was made was entirely whitefish and suckers. This net was immediately dropped and the fish were allowed to swim away from the boats, unharmed. An approximate estimate of that set with by-catch is 2500.



**Figure 10. Brailing the Catch!**

The process was to make a set, bring in the packer boat as seen in the photo above, then

brail the fish into totes on the packer boat. The packer also carried pre-iced totes and totes of ice. The remaining process was to allow the sockeye to settle down then transfer them by hand into the larger totes for shipping.

Once the packer boat was full, it would make its way to shore, where the totes that have been validated would immediately be loaded into a refrigerated unit. Those that were not validated would be done on shore, prior to loading onto the reefer unit.



**Figure 11. Unloading the Packer Boat - Knotty Buoy!**

### ***Stellako Fishery Conclusions and Recommendations***

This fishery was successful and proves promising for future opportunities. The area where the seining occurred was a natural site in that a majority of the run had entered the river with the remainder holding just off the river mouth. The close proximity of a paved landing site also aided in making this project a success and we greatly appreciate and thank Jim Danish for allowing us to use his property for this purpose and his assistance when required. We also thank the leadership of the Stellat'en First Nation for supporting this fishery.

It should also be noted that a quality assessment was performed on this harvest and it is indeed suitable for most products that we are promoting.



**Figure 12. Fraser Lake sockeye blush test!**

Recommendations for future projects are as follows:

1. Continued tissue sampling for DNA analysis. The purpose - to differentiate between Stellako and Late Stuart sockeye and hopefully improve in season information as the stocks move through the test fisheries in the lower river.
2. Improvements to the landing site, such as a dock and ramps to provide easier access to the packer boats is required.
3. Smaller totes for the packer boat

### **Siska Fishery**

In 2014 the Upper Fraser Commercial Fishing Enterprise (UF CFE) worked to collaborate with the Siska Traditions Society (operating on behalf of Siska First Nation) on enterprise development. Siska shares many common principles with the UFFCA, including the overriding principle of conservation and FSC priority, and notably, Siska recently became a signatory to the ISPA Charter for Responsible Trade.

This fishery commenced on September 26, 2014 and was in operation until October 3, 2014. This fishery included collaboration with the Okanagan Nation Alliance, who provided a Jet Boat to transport fish and fishers as well as



other equipment and ice. The UFFCA provided a Jet Boat Operator as well as fish totes.

### ***Objectives***

The primary objective of this fishery in 2014 was to explore how to share capacity to support Siska's role as both a harvester and logistics hub, while achieving economies of scale for the UF CFE in logistics and by creating a diverse portfolio of salmon stocks/species for our EO fisheries.

### ***Methods and Materials***

#### **Site Identification**

The sites that were chosen for fishing are the Siska Band traditional fishing sites along the Fraser River mainstem and are used each year by the members for their s.35 fisheries. Access to those sites was from Frenchman's Bar via a Jet Boat and foot access.



**Figure 13. Dipping on the Fraser near Siska!**

### **Materials and Supplies**

Following identification of the fishing locations and landing site, various materials and supplies were identified to facilitate a fishery in the Siska area. Totes were supplied by the UFFCA, however to get the fish from the fishing sites to the landing sites and into totes, the Harrison Fisheries Authority supplied coolers.

Additional nets were purchased in the event that equipment wore out or needed repairs and harnesses were supplied for Dipnetting as well as ropes.



**Figure 14. Loading a Reefer Trailer!**

### ***Results***

#### ***Siska Fishery Conclusion and Recommendations***

The 2014 Sockeye fishery at Siska was a success, 4781 sockeye were harvested over a one-week period and an economy was created within the Siska Band for the benefit of the members.

Eventually, Siska may become a full partner in the UF CFE. However our members have indicated that this is dependent on our collective ability in the Upper Fraser River to formally agree on a structure for a self-sustaining enterprise that will survive the test of time. Once our current members have completed their ratification of the corporation, we would then be prepared to look further at how to engage Siska based on the success of this initial partnership.

For future fisheries in the Siska area the following recommendations are made:

1. Explore the option of constructing a smaller fishwheel, located on the village side of the river for access purposes.
2. Implement an orientation session for dippers and support crews for future fisheries, following protocols established in the TNG Training Manual for Commercial Dipnet Fishery Workers.
3. Pursue a pink fishery in 2015.
4. Purchase safety harnesses
5. Construct “Fish Cradles” for each fishing site.

### **UFFCA TAC Transfer to Musqueam FN**

In addition to the executed fisheries in the Upper Fraser, the UF CFE also successfully worked through an exercise to transfer a component of the UF CFE share of the sockeye TAC to the Musqueam Fishery in the lower Fraser; this was following a successful exercise to transfer Pink Salmon in 2013. The 2014 exercise was more complicated with many moving parts, which included determining what components of the “aggregate” needed to be accessed, and in what percentages to reform the aggregate to the amount being transferred. The UF CFE and DFO spent considerable time ensuring the proper proportions of the different stocks that needed to be involved and the UF CFE worked to obtain permission from the groups to relinquish the appropriate portion of

their share. The final amount transferred was 14,694 sockeye, broken down as follows.

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### **Conclusion**

In summary the UF CFE continues to evolve as a commercial fishing enterprise in the Upper Fraser River, with the participating partner support and works to create additional partnerships with those that share the same conservation and harvest principles of the UFFCA.

The fisheries that occurred in 2014 were for the mostly successful with the exception of the Chilcotin River fishery, which was suppressed due to the Mt. Polley disaster. The Fraser Lake fishery successfully harvested 11,888 sockeye while the Siska Fishery harvested 4,791 sockeye. Both fisheries started and ran during the same time periods.

The UF CFE will continue to grow and implement fisheries, providing employment opportunities for local members of the nations and promoting local sales of fish as well as wholesale sales.

We thank all those that were involved in our fisheries for 2014. Without the support and dedication to in-river fisheries and their ability to be more stock selective than marine fisheries, these fisheries would have been more difficult to implement.