

## **Beyond the Fraser Mixed Stock Fishery ~ *Exploring Options for Voluntary Implementation***

### **Background**

Conservation concerns and the extensive timing overlap of productive and less productive salmon stocks within the Fraser drainage are causing significant fisheries disruptions and conflict. Conservation closures, and limits on exploitation of weaker conservation units and stock aggregates, prevents the full use of the salmon resource, and in at least one case (the Quesnel in 2002) led to significant over-spawning, small-sized juveniles, and a subsequent run collapse in 2006. Further, in some cases First Nations in large areas of the upper Fraser have been unable to harvest their food fish as continued pressures on mixed-stock fisheries has further pressured already weak stocks.

This situation is both undesirable and unsustainable. Unfortunately, to the extent that these problems are rooted in habitat degradation, long-term climate change, and our inability to respond quickly enough to declines in productivity of one stock or another, there is no quick fix. There are, however, potentially innovative options to manage fisheries and fishing impacts that will optimize spawning escapements and encourage a greater sharing of the fisheries benefits. This would need to be accomplished through the coordination of the tidal and inland harvesting activities to address interest-based outcomes emerging from the shift to sustainable fisheries.

One of the most effective options would require a voluntary reshaping of the fishery using cooperative terminal and selective fisheries to harvest stronger stocks (for both food and economic purposes) while avoiding stocks of concern. Unfortunately it is not a simple matter of moving existing commercial fisheries to areas in the upper Fraser where surplus salmon can be safely harvested.

### **Allocation Transfer Policy**

Commercial fishermen in Canada are generally restricted to tidal waters under Federal jurisdiction. Non-tidal waters are under Provincial jurisdiction. Commercial fishing in 'non traditional' areas will require changes in policy, fishing gear, and fishing practices and will also place commercial fishermen into potential conflict with sport and First Nations fisheries that now operate in virtually every area of the Fraser. First Nations people in the Fraser, with few exceptions, exercise their Aboriginal right to fish for Food, Social, and Ceremonial purposes (FSC), but can sell the fish they catch only under agreement with DFO or under treaty.

In a nutshell, commercial fishermen own the licenses needed under the existing policy framework to harvest commercial surpluses of salmon identified by DFO, but conservation concerns prevent them from accessing all of the surplus in tidal waters. First Nations fish in areas where surplus salmon can be harvested with less harm to stocks of concern, but have very limited access to commercial licenses. Alternatives being explored should contribute to the momentum established by DFO's Pacific Fisheries

Reform – build on efforts to meet conservation, FSC, and economic aspirations throughout the fishery.

This concept paper explores ways of voluntarily moving Canadian commercial TAC (without prejudice to future arrangements) to areas where conservation problems can be addressed, while at the same time improving fishing opportunities for commercial fishermen remaining in traditional commercial mixed-stock fishing areas and/or FSC fisheries in tidal waters that currently depend upon Fraser River salmon stocks.

## **Exploring Current Mechanisms for Transfer of Commercial Salmon Licenses**

Currently, there are a few options being tried in the west-coast salmon fishery to effect transfer of licenses. These trials have evolved to address localized compliance, fleet reduction, transfer for Treaty, and to foster short-term arrangements between and among competing interests.

Some options include:

### **1) Transfer FSC fish to economic fish – *short term outcomes (single-season)***

- Examples exist where a FN can and have agreed with DFO to transfer some of their FSC allocation to an economic fishery which would allow sale of these fish. This arrangement is made on an annual basis and must be in place before fishing begins. By agreeing to a fishing plan, a FN is able to maintain its options with regard to its FSC allocation.

### **2) Compensation to the commercial sector by buying or leasing TAC – *medium-term outcomes (multi-season)***

- The example here was developed in the Skeena River in 2006. The basic idea is to average the catch for gill-netters in the mouth of the Skeena for last week's catch. That average is then used to calculate a lease or purchase amount from gill-netters that are not fishing and this uncaught catch is caught upstream. The average catch is recalculated each week. The intent here was to get away from sockeye equivalents and to use actual catches of actual fish in the same fishery to calculate the amount to transfer.

### **3) Compensation to the commercial sector via DFO's Allocation Transfer Program (ATP) – *long term outcomes***

- This DFO program involves the annual purchase of commercial licenses on the open market. The number of licenses and amount of money allocated to this task varies from year to year. The basic intent is to "bank" a number of licenses to allow FN to participate in a commercial or economic fishery. Thus a FN might acquire a gillnet license via their AFS agreement and use that license to fish in the regular commercial fishery.

### **Issues around Allocation Transfer**

Initially, annual arrangements should strive for engagement from, and collaboration with, the competing interests, in-so-far as they may contribute to a greater understanding of the alternatives, implications, and complexities in achieving agreements and desired results.

The difficulties are associated with how one calculates the amount of fish to transfer from the sale of a license. In the past, DFO has used average catches (i.e. gill-netters) and converted the catch of the entire license's salmon to sockeye equivalents. This is achieved by converting pinks, chum and others to sockeye into a common "currency".

A simple example might be seven pinks "equalling" one sockeye. Thus, if a gill-netter catches seven pinks and one sockeye that license is credited with two sockeye. So far so good. However, in the past the transfer to First Nation fisheries has been two sockeye, resulting in the transfer of twice as many sockeye as bought, "leaving" the rest of the commercial fishermen with the pinks.

A more equitable transfer mechanism of sockeye for sockeye and pinks for pinks, etc., is needed. The Commercial Salmon Advisory Board (CSAB) is working on a fair and equitable system to accomplish this.

### **Trading Immediate Benefits to First Nations for Compensation to the Commercial Sector through New Conservation-based Arrangements (Conservation Credits)**

A new approach to shaping fisheries is emerging from discussions between tidal industry fishing interests and First Nations in the lower Fraser River. While focused initially on Cultus Lake Sockeye conservation (listed by COSEWIC as endangered in 2005), these talks foster watershed and fishery-wide aspirations to create alternatives beyond the diminishing opportunities in the mixed stock fishery. The possible annual arrangements could contribute to long-term salmon recovery plans, better relationships between fisheries interests, and a framework for sharing arrangements based on rewarding of sustainable fishing behavior.

Several options exist for the voluntary shift of fishing effort in order to "shape" the fishery to achieve the desired escapement objectives. By changing the timing and location of their target fisheries, a First Nation (or anyone in the fishery for that matter) may increase the allocation and value of their annual fishery, while contributing to faster stock recovery and the interests of another participant in the fishery—opening the potential for trade-offs between interests. Restrictions in the approach fisheries<sup>1</sup> may be

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<sup>1</sup> Includes some coastal First Nations who have been licensed to fish Fraser Stocks by DFO to provide FSC opportunities where local fisheries are unable to meet this need

eased as the in-river fisheries strive to reduce impacts on weak stocks. In the case study involving Cultus Sockeye, the trade-offs amount to the over-all available % points of mortalities within a ceiling pre-set by fisheries managers each season. To put it another way; there are only so many percentage points of mortalities available for Cultus. These might be shared differently than they have been in past years.

Conserving salmon throughout the Fraser River could take a page from the Kyoto Protocol, proposing to use selective fisheries as an incentive to harvest more fish, and to allow fishing interests to trade credits (the available % mortality points), much like the Parties to Kyoto swap carbon credits—in this case, conservation credits. The lessons learned here could be extended to other stocks of concern over time.

The creative solution to age-old fishing conflicts brings together coastal fishing interests<sup>2</sup> and First Nations communities both near the spawning grounds and in the approach fisheries to explore ways to “shape” fishing plans. By altering the plans to shift effort away from stocks of concern, fishers could target alternative salmon fisheries not licensed. In return for conserving stocks of concern, the participating FN would earn greater allocations (economic and non-economic purposes). Transferring the opportunity to harvest (allowable mortalities) from the stock of concern to other fisheries where inland fisheries can move, provides the opportunity to swap these allowable mortalities to coastal fisheries that have exhausted all other alternatives.

The concept is new and many implementation details need to be worked out and the fishing season is close. However, the Fraser River Salmon Table is increasingly confident that the trade-offs may work a season at a time, while the necessary relationship-building and mechanics of the longer-term process of *Pacific Fisheries Reform* are worked out. A small team of technical and policy workers need to evaluate how some of the scenarios would work and propose some accommodation for the 2007 Fraser Salmon fishery. A successful agreement would be advanced to the Minister to inform his final direction on fishing arrangements for this season.

### **How this may work**

The basis for the solution arises from the imminent shift of fishing effort away from mixed sockeye fisheries that put weak stocks at further risk. Fishing plans for 2007, still in their formative stages, will attempt to reduce over-all exploitation rates for late-run Sockeye to secure sufficient spawners from mixed stock fisheries to withstand enroute and pre-spawning mortalities. However, even modest forecasts of escapements in 2007 point to significant un-harvested commercial catch in several sockeye runs, as well as Fraser chum, chinook and pink salmon stocks in 2007.

For every percentage point reduction in the allowable harvest of Cultus Sockeye identified by fisheries managers to meet escapement goals and natural mortalities, the coastal fleet faces the loss of a much larger fishing opportunity on the co-migrating late Sockeye and Summer Sockeye runs. If this loss is taken into account, then the benefits of

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<sup>2</sup> May include Coastal FSC fisheries

selective fisheries can be calculated and taken into account. As a result, lost fishing opportunities in approach waters might be “swapped” to provide localized fishing opportunities on Fraser salmon stocks that are anticipated to be available in commercially harvestable quantities.

Only a portion of the un-harvested Canadian commercial total allowable catch is caused by Cultus sockeye conservation. Limits on Early Summer run exploitation and ‘true Late run’ exploitation also restrict access to Summer run TAC. The same principle can still be applied. Where in-river fisheries can be shaped to avoid or reduce anticipated mixed stock impacts on Early Summer or Late run aggregates, these impacts can be transferred to fisheries that cannot harvest their catch shares without exceeding the allowable harvests on Early Summer or late run aggregates allowing improved opportunities to harvest surplus stocks.

Under this process, total impacts on stocks or aggregates of concern remain within limits set for conservation, but more of the surplus from stronger stocks and aggregates can be harvested.

## **Examples**

1. **Shifting Fraser River Late-run Sockeye harvest effort up-stream of Vedder Canal** (where Cultus sockeye will not be intercepted) during late-run Sockeye migration. This example might involve a larger aggregation of First Nations in the lower Fraser that elect to carry out their fishery upstream of the Vedder Canal. Since there is a real possibility that limitations on available mortalities of Cultus sockeye will limit the commercial harvest of late runs in the ocean, this action will reduce impacts on Cultus sockeye and provide more room for tidal harvest of late-run Sockeye by the commercial fleet. The participating First Nations would be given a “credit” for moving their fishery, which might be more licenses to access the commercially available lower Fraser chum or white-spring escapements.
2. **Shift Late Sockeye harvest effort to tributaries to avoid stocks of concern.** This example might involve a local First Nation (or collaboration of local First Nations within or adjacent to Harrison River) that elect to carry out their fishery in the tributary river or river-mouth and not in the mixed stock fishery of the main stem Fraser. Since there is a real possibility that limitations on available mortalities of Cultus sockeye will limit the commercial harvest of late runs in the ocean, this action will reduce impacts on Cultus sockeye and provide more room for tidal harvest of Late-run sockeye by the commercial fleet. The participating First Nations would be given a “credit” for moving their fishery, which might be more licenses to access the commercially available Birkenhead Sockeye, Harrison River Chum, or white-spring escapements.
3. **Shift Early Sockeye harvest effort to tributaries to avoid early Stuart and Summer Sockeye stocks of concern.** This example might involve a First Nation (or collaboration of local First Nations adjacent to Pitt or Chilliwack or Harrison Rivers)

that elect to carry out their fishery in the tributary river or lake and not in the mixed stock fishery of the main stem Fraser. Since there is a strong possibility that the abundance of Early Summer sockeye in aggregate will limit the harvest of Summer sockeye, this action will reduce impacts on the Early Summer aggregate and make additional room for further harvest of Early Summer aggregate and provide greater access to Summer run TAC for the commercial fleet. The First Nation that addresses the conservation concern would be given a “credit” for doing this which might be a share of the harvest that would have been forgone by the commercial fleet had the First Nation not modified their fishery. In this manner a First Nation could increase their own fishing opportunities, explore economic fisheries options, and create greater fishing opportunities for commercial license holders at the same time.

### **Implementation Challenges**

While the conceptual basis for salmon fishery “shaping” using trade-offs between interests with conservation credit systems bears significant potential for lower river and marine fisheries interests, the practical implications of reshaping the fishery on upstream FSC and escapement goals is less clear. Further, while trade-offs are being considered, the priority for coastal FSC fisheries that depend upon these stocks also needs to be considered. There is a need to flesh out these and/or other practical options for 2007 and to undertake fishery modeling that will help managers understand the full scope of impacts on the fishery.

Should the effects have a significant bearing on the outcomes of the IFMP as presented, perhaps a renewed consultation on the IFMP may be required with First Nations and other interests up-stream and in approach fisheries. Should the impacts be a generally positive one (and it should generally be given the cause-effect of diminished pressure on mixed stock fisheries) and the outcomes build on the objectives of the IFMP, a renewed consultation may be less of a burden.

The trade-offs among interests using conservation credits should take into account the constitutional rights and interests of the up-stream First Nations, as well as the interests of the recreational fishery in the over-all effect of re-shaping. The long-term shift towards near-terminal and terminal fisheries will not be avoided, and stability of allocations for the current level of commercial research or “demonstration fisheries” upstream is important.

To this end, reshaping should continue to embrace the management of sufficient quantities of escapement not only for conservation and FSC purposes, but recognize the likelihood of annual commercial quantities of Sockeye in the upper Fraser, and provide sufficient access to licenses for the continued investment in research to ascertain the viability of commercial fishery enterprises.

## **Forward**

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