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Fraser River Sockeye Spawning Initiative (FRSSI) Update

As the Fraser River Sockeye Spawning Escapement Initiative (FRSSI) process enters its final trial I thought it would be a good time to start talking about the future of this process, particularly, since the DFO is beginning to implement its Wild Salmon Policy (WSP), and FRSSI is directly linked to the WSP.

By way of a quick background, the FRSSI process was designed as a five step planning process, the steps are as follows: identify planning priorities; identify resource management options and alternative strategies; establish biological, social and economic performance indicators; assess likely impacts of management alternatives, and select preferred management alternatives. The FRSSI model and analysis simulate performance of 19 sockeye stocks 12 generations into the future; apply different escapement strategies and compare expected performance.

The process then used the "structured decision making" matrix which begins with defining the problem/ issues, develops some objectives and evaluation criteria, alternatives, estimates consequences, makes trade-offs and selects the best alternative which then gets implemented and monitored. Many First Nations are not necessarily convinced that the structured decision making model worked for them in a meaningful way, and that it is time to re-visit the entire process with a fresh and detailed look, using FN management objectives – and rights - as a measuring stick of FRSSI performance

After a series of meetings "input" has been received from the various sectors, an escapement objective and exploitation rates are set which when plotted on a graph tend to resemble a hockey stick – the Total Allowable Mortality (TAM) rule. i.e. that there is no exploitation up to a certain abundance, as numbers begin to rise, exploitation rates also increases to a maximum rate, e.g. 60%. The escapement strategy for each management group is selected based on simulated computer performances, e.g. gaming simulations, and reviewed in public consultations. Candidate escapement strategies are compared based on their performance relative to biological and social indicators which are supposed to reflect the intent of the WSP and emphasize comparisons to stock specific escapement benchmarks; social indicators focus on stability of total harvest.

At the last UFFCA meeting dealing with FRSSI back in March of 2009, UFFCA members were curious and to some degree concerned about the spawning escapement target and historical records of the Early Stuarts, i.e. where did the 108,000 escapement target come from? The question asked was whether this was enough to rebuild, if so over what time frame? The challenge(s) for the UFFCA and DFO is to agree upon an approach that meets the needs of the upper Fraser First Nations, respects their world view, and demonstrated integrity and is biologically justifiable.

Presently, UFFCA members have expressed frustration and to some degree, mistrust, when it comes to setting escapement targets for stocks in the traditional territories of the UFFCA members. Once again members want to know how escapement targets are set because it's certainly not working to meet escapements or FSC in the upper Fraser watershed. According to DFO's WSP there are approximately 44 sockeye Conservation Units (CU's) spawning in the Fraser drainage. DFO has a, Stock Recruit (SR) time series of data for only 19 of these CU's. The 'goodness of fit' for SR relationships for some of the 19 stocks where data are available suggests that *the relationships are very weak*. Using data from 19 stocks to represent 44 stocks presents problems. The stocks for which we have data tend to be the more abundant and more productive stocks. It is impossible to know whether the stocks for which little or no data are available have productivities similar to or very different from those stocks for which data are available.

In setting Total Allowable Mortalities (TAM) rules for Fraser sockeye, the FRSSI uses the SR relationship in a forward simulation model to estimate the yield (catch) and escapement from selected stocks within each stock aggregate, and to estimate the likelihood that the individual stocks (Conservation Units - CU's) within each aggregate will drop below levels considered (in the model) to result in a conservation concern. It is assumed that all the stocks within each timing aggregate have the same run timing and are equally vulnerable to each fishery. In reality, Fraser sockeye stocks within the same run timing group, can and often do, have very different run timing. Depending on the number and timing of fisheries, individual CU's within a timing group can be harvested at very different rates. Timing or management aggregates are not biological entities, but are constructed for the convenience of managers *regulating mixed stock ocean fisheries.*

In the upper Fraser there is a clear relationship between abundance of sockeye, and food, social and ceremonial harvest; lim-

ited sockeye equals limited FSC. In many areas of the Fraser only a few stocks are available to some First Nations communities to meet their food needs, and the abundance of sockeye needed to support food fisheries may be significantly higher than the levels suggested by DFO and the FRSSI process to protect stocks from extinction. In addition to setting minimum benchmarks to protect Fraser sockeye populations from extinction, it may be appropriate to set minimum abundance levels by geographic area to protect First Nations food fisheries.

Many biologists consider the extinction of weaker stocks to be an inevitable consequence of aggressive mixed stock fishing. Unfortunately, some of the less productive CU's may be of particular importance to First Nations in terminal areas of the Fraser, and these First Nations may consider the 'inevitable' loss of their fish to support mixed stock harvesting to be an infringement of their aboriginal rights.

The ongoing modification of the TAM rules to allow unsustainable harvests i.e. (20% harvest of Late run sockeye) also needs careful oversight. DFO needs to give some thought to how to engage stakeholders in highly technical processes, many people don't understand what FRISSI is doing; therefore, are not in the best position to understand how this process might affect their interests, or indeed, their rights. To date, DFO has had difficulties explaining the FRISSI process in a way that invites/attracts stakeholders. That DFO continues to press ahead with the implementation of FRSSI in the absence of such stakeholder understanding, and in the face of strong and unresolved technical criticism, suggest the deliberate and purposeful manipulation of the consultation process and will lead to further suspicion within Indian country.

Even taking the communal fisheries licenses, issued by the department, as a basic needs indication demonstrates that there are not enough sockeye for upper river First Nations. Presently DFO is looking at the trade-offs with the other sectors and is in the unenviable position of being the arbitrator. FRSSI has without a doubt proven to be "not precautionary enough" for Upper Fraser First Nations. In the minds of many of our leaders, the ideal scenario would be shutting the whole Fraser down allowing for only a few harvesting spots which would be located at or near terminal fishing sites.

If left to our own devices, the UFFCA would raise the escapement benchmarks for all of the stocks present within the territories , particularly for Early Stuarts. While we appreciate that FRSSI will be under review at PSARC – DFO's own scientific review process - sometime in 2010, UFFCA would like to see that the review process be completely independent; it would certainly increase the credibility and might get a greater level of "buy-in."

The fact that DFO states,- over and over again- that FRSSI is about making trade-offs, which are achieved by evaluation against abstract socio-economic indicators, only makes matters more tense. Many members felt insulted when they realized that their FSC requirements were somehow linked to these criteria; for First Nations the golden question is: How can you put a price on salmon in our areas, its part of the culture, it's priceless?

There are multiple and significant possible sources of error and uncertainty in the FRISSI process and its application. The loss of stationarity, lack of data for the majority of CU's, and the assumptions around the makeup of run timing or management aggregates as well as the assumptions around the impacts of fisheries on these aggregates appear to be the most critical immediate concerns. Taken in aggregate the sum of these uncertainties and assumptions make nonsense of these models, and lead to management advice that, when applied, could significantly damage Fraser sockeye stocks and First Nations fishing interests. There are good reasons to question whether the FRISSI process is even capable of providing defensible advice to harvest managers, but the current process clearly does not.

As per our written letter to senior managers within DFO, the UFFCA members recommend that the FRISSI undergo a through and independent scientific review considering:

- loss of stationarity
- data quality and bias
- under-represented stocks
- make up of timing aggregates
- cyclic dominance
- TAM rule implementation error (within and between aggregates)
- Loss of biodiversity
- Impacts of TAM rules on FSC harvests

In conclusion the UFFCA continues to work with DFO with the hope that the concerns being expressed can and will be dealt with in a meaningful way. It is not the wish of the UFFCA to be disruptive or disrespectful; instead it is the wish of the UFFCA to ensure sockeye management protects FSC access and sustainability over many generations.