February 28, 2007

Paul Ryall
Lead, Salmon Team
Fisheries and Oceans Canada

Re: Fraser River Sockeye Spawning Initiative/WSP Pilot.

Dear Mr. Ryall:

The Marine Conservation Caucus (MCC) recently suspended involvement in the Fraser River Sockeye Spawning Initiative (FRSSI)/ Wild Salmon Policy (WSP) pilot implementation process. This process involved structured decision analysis (SDA), supported by simulation modeling to provide a basis to choose between participant-identified management alternatives. As you know, we were involved in a smaller scale but somewhat similar process last year around the management of Cultus sockeye. We think it is fair to say that conservation interests were not particularly well served by this negotiation. The issue was ultimately resolved outside of the IHPC and without MCC involvement and led to the over-harvesting of Cultus sockeye while the associated and promised funding to support habitat work and enhancement remains unavailable. We did however learn a great deal about structured decision analysis, and despite its weaknesses we still support this approach.

One of the things we learned from the activities of last year is the critical role that the simulation model(s) play in evaluating the performance of the alternatives considered. We learned that the models must be thoroughly evaluated at the beginning, and must meet the needs of (and be clearly understood by) all of the participants. We also learned that the way the question is framed is reflected in the models structure, and has a profound influence on both the type of alternatives that can be evaluated and compared, and on the way the performance of the alternatives can be evaluated.

We believe that we have clearly identified several critical shortcomings of the models being used in the FRSSI SDA. We have provided detailed comments both at the last workshop, and at the technical session immediately following. We do not feel that our concerns have been addressed, nor do we believe it is DFO's intention to address these concerns before proceeding with the SDA process and selecting a management alternative for implementation in 2007. This is unacceptable to the MCC.

Specifically, the FRSSI process is asking the question "What is the best way to manage sockeye aggregates and what are the consequences of harvesting these aggregates in mixed stock fisheries at different rates?" The MCC is interested in asking a different question. We want to understand the consequences of alternative harvesting strategies on the individual conservation units that the WSP is intended to protect. The model as currently configured assumes that there are four timing aggregates of Fraser sockeye and that any harvesting action on an aggregate has the same impact on each of the constituent stocks. In fact all of us know that this is not true, and in our view it is not an acceptable assumption. With the possible exception of the early Stuart run, we do not believe that there is any biological basis for aggregating Fraser sockeye. In reality there are dozens of individual Conservation Units, each with their own unique migration timing and biology.

These individual stocks or conservation units are the units we must manage and protect. These units also support First Nations fisheries and are the components that must be modeled if we are to understand the true consequences of our harvesting strategy, not only on spawning escapement but also on First Nations fisheries.

We have pointed out repeatedly that there is a tremendous body of scientific literature that questions the use of MSY models particularly when applied to long time series of data collected using a range of techniques and with errors that are likely significant, but very difficult to quantify. The fundamental relationships between Fraser sockeye stocks and their environment are shifting, leading to changes in survival, carrying capacity, and behaviour that are not reflected adequately in the historical time series. At best, any analysis of historical data provides only a weak basis for predicting the future productivity of salmon populations, and the response of these populations to a particular harvest regime.

We note with some concern that the simulation models used to forecast the return of Fraser sockeye in 2007 for fishery planning purposes are not, for the most part, the same models used to simulate the returns for up to 50 years into the future. For 2007, the returns for three of the four summer runs and for the late run to the Shuswap are based on biologically naive models, not the Larkin MSY models used to support the SDA planning process. Conditions are changing so fast in the Fraser that the biologically naïve models outperform the MSY models for the purposes of fishery planning one year in advance. This should be considered a warning about the reliability of the simulations we are relying on in the SDA process to choose a harvesting strategy.

There are many other issues of concern to the MCC. There are no models or even proxies for the smaller less productive Fraser sockeye conservation units. It is not coincidental that we have insufficient data to model the productivity of these stocks, but they are important nonetheless. The benchmarks in use do not reflect our understanding of the levels of escapement necessary to maintain stock health and to protect the fisheries of Fraser First Nations. These are not issues that should be addressed by the MCC, or on short notice. While the models in use are highly complex and prone to errors that could easily change the outcome of the analysis, we have insufficient time to review them before we are asked to use the output from the models to choose between alternative harvest strategies. We have pointed out the need to capture the benefits of terminal harvest when strong stocks are not harvested in order to protect weaker stocks. The models now in use assume that excess escapement not only has no value, but will reduce future returns. We believe these surplus fish can benefit First Nations communities and the Canadian economy and that these benefits must be captured by the models if we are to fairly consider the sorts of harvest strategies that protect less productive stocks. We understand the tyranny of time, but the fact that we urgently need a management plan for Fraser sockeye is no excuse for rushing the process and the participants to the point that they are no longer comfortable with the analysis or the process.

Alternative and incremental management improvements could be made at this time through the FRSSI process despite the lack of a finalized conservation unit list or a model to support it. Such improvements include the design of robust and precautionary pre- and in-season management rules (e.g., limit reference points), revision of the design, use and

communication of forecasts, and implementation of more effective in-season assessment tools that support conservation.

If there is a lesson in this process, we believe it is this: managing stock aggregates can have unpredictable impacts on individual stocks, and for this reason requires the utmost in precautionary management. MSY is not a concept that can be applied to stock aggregates, and should not be considered a harvest objective for any salmon population.

We would like to close with a word to the wise, from the wise, written by the man that developed the models you are using to decide how to best manage stock aggregates of Fraser sockeye.

An Epitaph for the Concept of Maximum Sustained Yield

Here lies the concept, MSY,
It advocated yields too high,
And didn't spell out how to slice the pie,
We bury it with the best of wishes,
Especially on behalf of fishes
We don't know yet what will take its place,
But we hope it's as good for the human race.

Peter Larkin

We hope so too. Please give us a call when you are prepared to focus on the conservation of Fraser sockeye stocks and not simply on the management of mixed stock fisheries. When we are convinced that you are asking the right question in a reasonable way, and are prepared to accept our input and advice, we will be happy to reengage in the process.

Sincerely,

Ken Wilson Craig Orr Jeffery Young
Marine Conservation Caucus, Wild Salmon Committee

cc Mark Saunders
Brian Riddell
Don Radford
Paul Sprout