

Review of the Draft MSC Assessment of British Columbia Fraser River Sockeye Salmon Fisheries

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General comments

The MSC has established a benchmark for sustainable fisheries management through the principles and criteria for sustainably managed fishing. The management of salmon fisheries, and in particular the management of mixed stock commercial fisheries for Fraser sockeye, is a very complex and even arcane process that has slowly evolved over the last century. Sadly, it has not evolved quickly enough. DFO is struggling to adapt to a new understanding of the biology, population dynamics, and genetics of the resource, and the social and economic context of our fisheries. Salmon fisheries in southern BC are strongly influenced by legal obligations to First Nations, the Pacific Salmon Treaty, and by Canada's fundamental obligation to protect and preserve the resource for future generations. Where we once considered salmon populations to be relatively stable and predictable and protected from the impacts of over fishing by increased stock productivity at small population sizes, most salmon scientists now see a fragile complex of genetically unique, locally adapted populations with highly variable productivities, struggling to adapt to a rapidly changing environment, and the multiple and confounded impacts of fisheries, global climate change, human development, and changing ecosystem dynamics. Many Fraser sockeye stocks captured in the fishery are in decline and are eligible for listing as threatened or endangered under COSEWIC/IUCN criteria. I know first hand that First Nations in much of the Fraser routinely fail to harvest the food fish that they need.

Maintaining the biodiversity and abundance of Fraser sockeye populations is fundamental to the ability of Fraser sockeye to adapt to change, and their capacity to support fisheries over the long term. The question is not whether DFO is doing their best to manage Fraser sockeye fisheries in a sustainable way with the resources at hand, but rather is the current management process protecting the abundance and genetic integrity of Fraser sockeye while respecting the Aboriginal and Treaty rights of First Nations as well as the National and international obligations that Canada has assumed.

The task at hand is to decide if Fraser sockeye fisheries meet the MSC criteria as sustainably managed fisheries under the MSC guidelines. I have some concerns regarding the extent to which the MSC guidelines are appropriate and complete. Some matters related to defining target stocks and incidentally harvested stocks, and the relationship between these stocks and the conservation units yet to be defined under DFO's Wild Salmon Policy remain. In general I found the MSC review to be sensitive to the concerns expressed in my earlier review of the materials presented by DFO to the MSC.

I have reviewed the SCS rankings, and I have compared these rankings to my earlier review of the DFO material. This review will focus on those assessment criteria where my assessment differs substantively from the assessment teams findings. I have also commented on each of the Conditions imposed on the Fraser assessment. That said, I feel that the principles and criteria are adequate for an assessment of the sustainability of Fraser sockeye commercial fisheries provided that these criteria are rigorously applied and the information provided by the proponents (which in this instance is really DFO) is balanced, and verified by the assessment team. I have not attempted to duplicate my earlier review, but have attempted to clarify and expand on the earlier assessment. I made a number of comments in my earlier review concerning the extensive use of unverifiable “Pers com” citations in support of the proponents view of the structure, application and intent of DFO’s Fraser sockeye management process, These ‘citations’ should not be considered as unbiased scientific commentary.

MSC Principle 1

A fishery must be conducted in a manner that does not lead to over-fishing or depletion of the exploited populations and, for those populations that are depleted, the fishery must be conducted in a manner that demonstrably leads to their recovery.

Intent:

The intent of this principle is to ensure that the productive capacities of resources are maintained at high levels and are not sacrificed in favor of short term interests. Thus, exploited populations would be maintained at high levels of abundance designed to retain their productivity, provide margins of safety for error and uncertainty, and restore and retain their capacities for yields over the long term.

MSC Criteria

1. The fishery shall be conducted at catch levels that continually maintain the high productivity of the target population(s) and associated ecological community relative to its potential productivity.
2. Where the exploited populations are depleted, the fishery will be executed such that recovery and rebuilding is allowed to occur to a specified level consistent with the precautionary approach and the ability of the populations to produce long-term potential yields within a specified time frame.
3. Fishing is conducted in a manner that does not alter the age or genetic structure or sex composition to a degree that impairs reproductive capacity.

General comments on Principle 1

Defining target stocks is critical to this review. In the case of Fraser sockeye given the substantial overlaps in run timing of individual stocks or CU's, most commercial fisheries have the potential to harvest most spawning populations. For example, a fishery on mid summer sockeye will certainly harvest stocks classified as both early summers and lates in addition to mid summer stocks. I will comment on this issue later in this review, but for clarity, I consider all Fraser sockeye populations to be target populations for all Fraser sockeye commercial fisheries.

DFO's commentary on the management of Fraser sockeye suggests that the in season management process is highly refined, uncontroversial, and capable of regulating the harvest impacts of mixed stock fisheries on 7 to 10 "production units" divided into four run timing aggregates. For the purposes of production planning, DFO states that they possess sufficient data to model the production dynamics of 18 to 20 stock units which account for the majority of the harvest, and for conservation purposes DFO states that they monitor the escapement of about 37 to 41 'stock units'.

It is true that Fraser sockeye are managed based on four timing aggregates. It is also true that for the purposes of in season harvest management, DFO assigns the 7 to 10 production units to one of the four timing aggregates. For the purposes of production planning, the 18-20 most productive stock units are also assigned to one of the four run timing aggregates and DFO uses simulation modeling with population dynamics derived from the fitting Ricker or Larkin models to each of the 18-20 stocks (this process is called the FRISSI model (Fraser River Sockeye Spawning Initiative, some of our concerns about this process were explored in the attached letter from the MCC to DFO). These forward looking simulations are used to explore the impact of alternative fishing plans on each production units and to evaluate the conservation risks of alternative strategies.

If the management process described by DFO for Fraser Sockeye works as well as DFO suggests, then Fraser sockeye stocks should be in pretty good shape. There is currently no clear description of the CU's DFO is obligated to manage and protect under the WSP. Target and limit reference points for these CU's are not in place, and there has been no comprehensive review of the status of Fraser sockeye CU's. Many Fraser sockeye populations are in long term decline. These issues are fundamental to determining the sustainability of Fraser sockeye fisheries, and cannot be adequately addressed by placing conditions on the certification of these fisheries.

Fraser sockeye stocks begin entering the Fraser in June, and the flow of fish continues into September. Timing overlaps between the stocks in different run timing aggregates are very significant, and there is considerable scientific debate about the appropriate process for grouping stocks or CU's into timing aggregates. The timing aggregates that DFO manages are an intellectual construct intended to facilitate harvest regulation, but the placement of stocks into timing aggregates is somewhat arbitrary and controversial. I have attached a copy of a 1996 memorandum from Dr. Jim Woodey (then chief of fisheries management for the PSC), suggesting that nine early-summer stocks would be better grouped with the four mid-summer stocks. Dr. Woodey's recommendation was

never acted upon, and DFO to this day still manages a mid-summer aggregate that consists of four relatively strong stocks. Reorganizing the summer stock group along the lines recommended by Dr. Woodey would have a profound effect on the management of Fraser sockeye. I won't speculate about the reasons that so many stocks that appear to be mid-summer timed are assigned to the early summer stock group, but I can say that the current arrangement of stocks simplifies commercial access to stronger summer run populations (which produce the bulk of the commercial harvest in non-Adams years) while complicating any assessment of fishery impacts on the stocks that are miss assigned (since the models used assume that all stocks within each timing aggregate are equally vulnerable to all fisheries, even though this assumption is clearly incorrect).

Assigning stocks to the early summer run group when they migrate primarily as mid-summer stocks has significant implications for in-season management decisions. 'Optimum' management strategies developed through forward simulations, the escapement goals set for the timing aggregates, and the assumed impact of fisheries on specific stocks are all affected by the assumptions made concerning run timing.

Only about one half of the stocks or CU's have sufficient data to fit a Stock Recruit relationship. In almost every case, the fits for SR data are very poor, so poor that the pre-season forecasts prepared each winter for the approaching season often use simple naive models based on cycle line averages. Yet DFO uses these same stock recruit models (that are in many cases considered to be too unreliable for preparing forecasts one year in advance) to simulate the response of Fraser sockeye to harvesting strategies in forward simulations that look 50 years into the future. The problems associated with SR models are well documented in the literature. These models have limited utility in managing single stock fisheries, and have been discredited as a source of guidance in the management of mixed stock fisheries. In this context the FRISSI models are really little more than a rationalization of the current mixed stock management process.

The historical productivity of almost one half of Fraser sockeye CU's is unknown, and for the remainder is known only with great uncertainty. It is clear that stock productivity is not constant over time, (as the management models used to develop management goals for Fraser sockeye generally assume) but highly variable and productivity for the majority of Fraser stocks appears to have declined substantially over the last 20 years or so. These long term declines in productivity means that simulations based on SR models fitted to 50 years of data will have a strong positive bias and can lead to dangerously optimistic assessments of yield and the impacts of fisheries on less productive units of Fraser sockeye.

[1.1.1.1 MU's are defined.](#)

[1.1.1.2 Scientific agreement on units.](#)

DFO's failure to define CU's (at present) and the considerable scientific uncertainty (Woodey 1996) around the best way to aggregate these Cu's (once

defined) into timing aggregates for the purpose of management argues that these two criteria are not achieved at the 100 level

1.1.1.3 Geographic range for harvest of each stock management unit in the fishery is known.

Condition 1 - Certification is conditional until a review of the run timing and harvest rates for Sakinaw sockeye has been completed and the fisheries management plan is consistent with the goal of minimizing the harvest rate on Sakinaw sockeye (**Fraser Condition #1.1**).

There are two issues here. First, there are a dozen ‘non-target’ stocks of sockeye that migrate through Johnstone strait and that are primarily harvested in fisheries for Fraser sockeye (see Dobson and Wood). Based on Dobson and Wood, many of these stocks are depleted, but too little is known about escapements and harvest to allow for a proper assessment. Sakinaw sockeye are not at all unique among these stocks except that there are sufficient data to support an assessment, and for that reason these fish were listed by COSEWIC. Second, there is little likelihood that run timing or harvest rates for Sakinaw sockeye can be directly assessed, because the run is now too small to monitor in the fisheries.

1.1.1.3 Indicator stocks.

Condition 2 – Certification will be conditional until a rigorous review has been completed to confirm that the indicator stocks reflect the status of the other stocks within each management unit (**Fraser Condition #1.2**).

What are the MU’s and indicator stocks? If we are referring to timing aggregates, we already know that there are significant variations in run timing and harvest impacts within each timing aggregate. If the indicator stocks are those stocks with sufficient data to fit an SR curve, then there is clearly a strong stock bias. I question the logic in certifying any fishery as sustainable where the fundamental basis for management must be demonstrated to be true as a condition of certification.

1.1.2.1 Estimates exist for the removals for each stock unit.

Condition 3 - Certification is conditional until the harvest rate analysis for Sakinaw sockeye has been updated using the best available data and appropriate fisheries management actions are consistent with the goal of reducing harvest rates for Sakinaw sockeye and rebuilding this depleted stock (**Fraser Condition #1.3**).

Sakinaw is not rebuilding, so it appears unlikely that harvest impacts and fisheries management actions are consistent with the objective of rebuilding this stock.

1.1.2.4 Stock assessment in support.

Condition 4 - Certification is conditional until a review of the relative productivity of Sakinaw sockeye has been completed and the fisheries management plan is consistent with the estimated productivity and goal of rebuilding the Sakinaw sockeye stock (**Fraser Condition #1.4**).

It seems self evident that the ‘relative’ productivity of Sakinaw sockeye (relative to the target Fraser sockeye populations co-migrating with Sakinaw, whatever stocks those are?) is somewhat below the Fraser populations. Since this population is critically endangered using the IUCN criteria, I suggest that the appropriate exploitation rate should be very close to zero. With the data at hand, the exploitation rate for Sakinaw sockeye cannot be measured, and efforts to protect Sakinaw sockeye have been limited to actions that do not unduly disrupt fisheries for Fraser sockeye.

1.1.3.1 LRP’s are set and are appropriate to protect the stocks harvested in the fishery.

Condition 5 - Certification is conditional until the Conservation Units have been defined for Fraser sockeye using the methods described in Holtby and Ciruna (2007) and LRP’s for each Fraser sockeye conservation unit are defined and peer reviewed (**Fraser Condition #1.5**).

This criterion gets right to the heart of what sustainable management of Fraser sockeye is all about, and the need for placing such a condition on certification argues strongly that Certification should not be granted at all until this condition is met.

1.1.3.2 TRP’s or the operational equivalent has been set.

Condition 6 - Certification is conditional until the Management Units have been defined for Fraser sockeye and the management agency defines the TRPs for each Fraser sockeye management unit taking into account the productivity of target and non-target stocks within each management unit (**Fraser Condition #1.6**).

The review states that;

“TRP’s have been defined for all the major sockeye stocks but there continues to be considerable scientific debate regarding the TRP’s for both target and non-target stocks. It is anticipated that the implementation of the WSP will provide a clear definition of the TRP’s for Fraser sockeye.”

I disagree strongly. DFO has set management objectives for Fraser run timing aggregates, but not for the individual stocks or CUs. Setting Tarps for individual stocks is a very different matter, and this has not been done, nor is there an operational equivalent used at this time. I do not consider an escapement goal or mortality limit placed on timing aggregate to be the equivalent of a TRP on a CU, since the management of aggregates

under the current process clearly allows individual CUs to decline indefinitely as long as the aggregate goals are met. In essence, DFO's current process allows abundant spawning for strong CUs to compensate for inadequate spawning for weak CUs within timing aggregate.

1.2.1 There is a well-defined and effective strategy, and a specific recovery Plan in place, to promote recovery of the target stock within reasonable time frames.

Condition 7 - Certification is conditional until the management agency provides a clear commitment to implement the recovery plan for Cultus sockeye and evidence that fisheries management actions are consistent with the recovery goals for Cultus sockeye (**Fraser Condition #1.7**).

This condition really states that DFO has no clear commitment to implement the recovery plan for Cultus sockeye, and has provided insufficient evidence that management goals are consistent with the recovery of Cultus sockeye. I agree. The recovery plan was to be implemented by an Action plan. No such plan exists. It is a telling comment that five years after Cultus sockeye were listed as endangered by COSEWIC, there is not only no sign of recovery, but no existing plan to implement the recovery strategy. That DFO routinely exceeds their own harvest limits for Cultus sockeye suggest that their harvest plans for strong stocks take clear precedence over the recovery plans for weak stocks. .

1.2.2 Target stocks are not depleted and recent stock sizes are assessed to be above appropriate limit reference points for the target stocks.

Condition 8 - Certification is conditional until the management agency defines the LRP's for the target stocks and the management agency provides documentation that fisheries have not resulted in escapements that approach or are below the LRP in more than one year in a period of the most recent 5 cycle years, for any of the target sockeye stocks. The intent for this condition is to resolve the effects of fisheries, not other factors, on the stock and to recognize that the Fraser River sockeye undergo cycles so that these cycles must also be taken into account when examining whether the stocks are being maintained above LRP's (**Fraser Condition #1.8**).

That DFO has failed to meet this criterion is evident from the condition imposed. Fishing has contributed to stock declines throughout the Fraser, and there are no LRPs established to prevent ongoing declines. This condition like several others is not a reasonable condition to impose on a fishery being proposed for certification as a sustainable fishery. This condition argues strongly that the fishery is not demonstrably sustainable, and this condition must be met before any certification can be justified.

MSC Principle 2

Fishing operations should allow for the maintenance of the structure, productivity, function and diversity of the ecosystem (including habitat and associated dependent and ecologically related species) on which the fishery depends.

Intent:

The intent of this principle is to encourage the management of fisheries from an ecosystem perspective under a system designed to assess and restrain the impacts of the fishery on the ecosystem.

MSC Criteria:

1. The fishery is conducted in a way that maintains natural functional relationships among species and should not lead to trophic cascades or ecosystem state changes.
2. The fishery is conducted in a manner that does not threaten biological diversity at the genetic, species or population levels and avoids or minimizes mortality of, or injuries to endangered, threatened or protected species.
3. Where exploited populations are depleted, the fishery will be executed such that recovery and rebuilding is allowed to occur to a specified level within specified time frames, consistent with the precautionary approach and considering the ability of the population to produce long-term potential yields.

General comments on Principle 2

The impact of commercial fisheries for Fraser sockeye on biodiversity and the ecosystem are rather difficult to evaluate with the available data. Certainly, the most profound impacts of commercial fisheries for Fraser sockeye are the loss of sockeye abundance and diversity, and it is fair to say that target stocks are managed for fishery yield and are not managed to support other components of the ecosystem. Perhaps defining CU's and the associated TRPs and LRPs will provide for these ecosystem functions, or perhaps not. It is clear that "ecosystem needs" are not explicitly addressed by management plans for Fraser sockeye in any way. I also consider the food needs of First Nations to be related to ecosystem functioning, but will address this issue under Principle 3.

Indicator 2.2.1 The management of the fishery includes provisions for integrating and synthesizing new scientific information on biological diversity at the genetic, species or population level of all species harvested in the fishery and impacts on endangered, threatened, protected or icon species.

Condition 17 - Continued certification of the Fraser sockeye salmon fishery is contingent upon providing reliable and defensible estimates of the harvest of white sturgeon and steelhead within a reasonable time frame. See also Condition 1, 3, and 4 regarding Sakinaw sockeye, and the need to be able to identify and understand the impact of fish released from a supplementation program to assist in the recovery plan of Sakinaw

sockeye and to be able to detect impacts on natural spawning produced returning adults (**Fraser Condition 2.1**).

In this instance, I assume harvest impacts include non-catch mortality. Sturgeon are not retained by commercial harvesters, and are released, but not all survive. Once again I refer the reviewers to Dobson and Wood. Sakinaw is only one of a group of depleted sockeye stocks that spawn in streams entering Georgia strait that are harvested in commercial fisheries for Fraser sockeye. The incidental harvest and depletion of these stocks has increased the fishing pressure on Fraser sockeye by First Nations seeking food fish, since in many cases the local stocks no longer support food fisheries. Impacts on local ecosystems are likely profound, but are unassessed. The wording of this condition is rather vague. Words like reasonable, defensible and reliable can mean different things to DFO and the MSC certifiers.

Indicator 2.3.1 Management strategies include provision for restrictions to the fishery to enable recovery of non-target stocks to levels above established LRPs (Limit Reference Points).

Condition 18 - Fraser Sockeye Salmon Condition #2. Certification of the Fraser sockeye salmon fishery is contingent upon developing and implementing a risk assessment of the Sakinaw Lake recovery strategy that will include the following items: 1) Examination of the risk of differing temporal harvest rates on returning run and its implication on the probability of the recovery of the stock; and 2) refinement and peer review of run reconstruction analysis for Sakinaw sockeye (**Fraser Condition 2.2**).

Condition 19 - Fraser Sockeye Salmon Condition #3. Certification will be conditional until Limit Reference Points or their equivalent have been defined for Fraser sockeye salmon stocks, and recovery plans have been developed and implemented for stocks harvested in Fraser sockeye fisheries that are below their LRP. The proposed recovery plans must provide information regarding the probability of recovery and the timing for recovery (**Fraser Condition 2.3**).

Once again, these indicators are central to the concept and definition of sustainable fishing and are fundamental to any assessment of the fishery. That these conditions need to be imposed strongly argues that the fisheries are not demonstrably sustainable. That these conditions are not already clearly met suggest that Fraser commercial sockeye fisheries are not sustainably managed.

MSC Principle 3

The fishery is subject to an effective management system that respects local, national and international laws and standards and incorporates institutional and operational frameworks that require use of the resource to be responsible and sustainable.

Intent:

The intent of this principle is to ensure that there is an institutional and operational framework for implementing Principles 1 and 2, appropriate to the size and scale of the fishery.

MSC Criteria:**Management System:**

1. The fishery shall not be conducted under a controversial unilateral exemption to an international agreement.

The management system shall:

2. demonstrate clear long-term objectives consistent with MSC principles and criteria;
3. contain a consultative process that is transparent and involves all interested and affected parties so as to consider all relevant information, including local knowledge. The impact of fishery management decisions on all those who depend on the fishery for their livelihoods, including, but not confined to subsistence, artisanal, and fishing-dependent communities shall be addressed as part of this process;
4. be appropriate to the cultural context, scale and intensity of the fishery – reflecting specific objectives, incorporating operational criteria, containing procedures for implementation and a process for monitoring and evaluating performance and acting on findings;
5. observe the legal and customary rights and long term interests of people dependent on fishing for food and livelihood, in a manner consistent with ecological sustainability;
6. incorporates an appropriate mechanism for the resolution of disputes arising within the system; provide economic and social incentives that contribute to sustainable fishing and shall not operate with subsidies that contribute to unsustainable fishing;
7. act in a timely and adaptive fashion on the basis of the best available information using a precautionary approach particularly when dealing with scientific uncertainty;
8. incorporate a research plan – appropriate to the scale and intensity of the fishery – that addresses the information needs of management and provides for the dissemination of research results to all interested parties in a timely fashion;

9. require that assessments of the biological status of the resource and impacts of the fishery have been and are periodically conducted;
10. specify measures and strategies that demonstrably control the degree of exploitation of the resource, including, but not limited to:
 - a. setting catch levels that will maintain the target population and ecological community's high productivity relative to its potential productivity, and account for the non-target species (or size, age, sex) captured and landed in association with, or as a consequence of, fishing for target species;
 - b. identifying appropriate fishing methods that minimize adverse impacts on habitat, especially in critical or sensitive zones such as spawning and nursery areas;
 - c. providing for the recovery and rebuilding of depleted fish populations to specified levels within specified time frames;
 - d. mechanisms in place to limit or close fisheries when designated catch limits are reached;
 - e. establishing no-take zones where appropriate;
 - f. contains appropriate procedures for effective compliance, monitoring, control, surveillance and enforcement which ensure that established limits to exploitation are not exceeded and specifies corrective actions to be taken in the event that they are.
11. contains appropriate procedures for effective compliance, monitoring, control, surveillance and enforcement which ensure that established limits to exploitation are not exceeded and specifies corrective actions to be taken in the event that they are.

Fishing operations shall:

12. make use of fishing gear and practices designed to avoid the capture of non-target species (and non-target size, age, and/or sex of the target species); minimize mortality of this catch where it cannot be avoided, and reduce discards of what cannot be released alive;
13. implement appropriate fishing methods designed to minimize adverse impacts on habitat, especially in critical or sensitive zones such as spawning and nursery areas;
14. not use destructive fishing practices such as fishing with poisons or explosives;

15. minimize operational waste such as lost fishing gear, oil spills, on-board spoilage of catch, etc.;

16. be conducted in compliance with the fishery management system and all legal and administrative requirements; and

17. assist and co-operate with management authorities in the collection of catch, discard, and other information of importance to effective management of the resources and the fishery.

General comments on Principle 3

The long term impacts of the commercial exploitation of Fraser sockeye on the biodiversity of the target stocks are primarily dealt with under Principle 1. I believe that DFO has failed in their legal obligation to consult with First Nations, and in their fiduciary obligation to manage commercial fisheries in a way that allows First Nations to harvest the food fish they need.

DFO has no clear process to evaluate the impact of their management strategy on the success of First Nations fisheries within the Fraser River (under FRSSI for example). Ineffective consultation is a general problem in BC. Failure to deliver the food fish needs of First Nations is a chronic problem, but particularly in the upper Fraser. Many of the First Nations fisheries in the upper Fraser depend on the abundance of only a few, often weak stocks. Many of these fisheries also depend on dip nets and small set nets that harvest only a small fraction of the fish passing. Unless the stocks being harvested are at least modestly abundant, food fish catches are inadequate to meet the needs of the community. This issue must be addressed in setting LRPs and TRPs for Fraser sockeye.

As I mentioned earlier, the depletion of numerous non-Fraser sockeye stocks have forced First Nations along the south coast to increase their dependence on Fraser sockeye. This not only increased the complexity of providing food fish within the Fraser during periods of conservation concern, but has lead to disagreements concerning the role of Fraser sockeye in meeting the needs of coastal First Nations.

Indicator 3.1.1: The management system has a clear and defensible set of objectives for the harvest and escapement for target species and accounts for the non-target species captured in association with, or as a consequence of, fishing for target species.

Condition 24 - Certification will be conditional until a clear set of management objectives has been defined and found to be consistent with MSC criteria and measures are taken to reduce the bycatch of sturgeon and improve the monitoring systems used to estimates sturgeon bycatch (**Fraser Condition #3.1**).

That such a condition might reasonably be applied to the Certification of Fraser sockeye fisheries is an indictment of the current management process and argues strongly that this fishery should not be certified.

Indicator 3.1.4: When dealing with uncertainty, the management system provides for utilizing the best scientific information available to manage the fishery, while employing a precautionary approach.

Condition 25 - Certification will be conditional until the management agency provides a clear commitment to implement recovery action plans for Cultus and Sakinaw sockeye (**Fraser Condition #3.2**).

Please see comments under condition 24.

Indicator 3.1.8: The management system provides for socioeconomic incentives for sustainable fishing.

Condition 26 - Certification will be conditional until the management agency provides clear evidence that measures are being implemented to encourage harvesters not to exceed catch targets or exploitation rate limits (**Fraser Condition #3.3**).

In fact, the lack of defined catch shares is a strong incentive for each fisher to maximize their own catch regardless of the impacts on the stock. At present, it is DFO's obligation to monitor the fishery and close the fishery when the catch limit is reached. In order for incentives to work to limit catch, the whole system under which salmon are allocated in BC must change. This is hardly an appropriate condition for Certification.

Indicator 3.2.1: The research plan covers the scope of the fishery, includes all target species, accounts for the non-target species captured in association with, or as a consequence of fishing for target species, and considers the impact of fishing on the ecosystem and socioeconomic factors affected by the management program.

Condition 27 - Certification will be conditional until the management agency provides a research plan that addresses identified concerns related to the impact of the fishery on the ecosystem, with emphasis on non-target stocks, and takes into consideration socioeconomic factors and anticipated changes to fisheries (**Fraser Condition #3.4**).

This is a reasonable request, and is part of DFO's core responsibilities. While I question DFO's capacity to fulfill this condition, the condition itself is entirely appropriate.

Indicator 3.4.1.2: Provides for restoring depleted target species to specified levels within specified time frames.

Condition 28 - Certification will be conditional until the management agency provides TRPs for the Cultus sockeye salmon stock and an assessment of the probability of recovery and the timing for recovery for Cultus sockeye (**Fraser Condition #3.5**).

Cultus sockeye have been in steady decline for many decades, and began to decline precipitously in 1995. Cultus sockeye were listed as endangered by COSEWIC in May of 2003. It is now the end of 2007, and the MSC feels that DFO should have five more years to think about the best way to protect and rebuild Cultus sockeye. If this represents due diligence and sustainable management then the extinction of Cultus sockeye is assured.

Indicator 3.6.3: The management system provides for the observation of legal and customary rights of First Nation peoples.

Condition 29 – Certification will be conditional until the management agency provides evidence that First Nation issues regarding aboriginal and treaty rights have been identified and these issues are being addressed through an effective consultation or negotiation process (**Fraser Condition #3.6**).

I have evidence that this is not the case in the form of letters from Fraser First Nations to the Minister of Fisheries, and copies of letters from Fraser First Nations to SCS. I believe it is the obligation of the MSC and SCS to review this information, and to contact the affected First Nations prior to certifying Fraser sockeye fisheries.

Indicator 3.7.4: The management system solicits the cooperation of the fishing industry and other relevant stakeholders in the collection of data on the catch and discard of non-target species and undersized individuals of target species.

Condition 30 – Same as Condition 17. Certification will be conditional until the management agency provides reasonable estimates of the harvest of white sturgeon and steelhead within a reasonable time frame. (**Fraser Condition #3.7**).

As mentioned previously, it is not the harvest of Sturgeon, but the fishing related mortality that must be assessed. I'm sure this is the intent, but the wording should be changed.

References

D. Dobson, C. Wood 2004 PSARC stock status report (accepted with revisions)
S2004-09 Status Review of “Inside” Sockeye Stocks – those adjacent to the Strait of Georgia, North-Eastern Vancouver Island and the Southern Mainland. (D. Dobson 1-250-756-7186) Document Summary available at http://www.dfo-mpo.gc.ca/csas/Csas/proceedings/2004/PRO2004_036_E.pdf

Attachments

FRSSI letter

Woodey Memo