

**Written Questions for Paul Ryall from the First Nations Coalition  
(Decision making, consultation, advisory processes and escapement/FRSSI)**

**April 21, 2011**

Thank you Mr. Ryall, for agreeing to answer in writing the questions of the First Nations Coalition on matters related to decision making, consultation and advisory processes within the context of DFO's harvest management, and in particular as it relates to the FRSSI model/process and the IHPC.

**A. Fraser River Sockeye Spawning Initiative ("FRSSI") and  
Total Allowable Mortality ("TAM") rules**

1. Can you confirm that when the FRSSI model was being developed, this was primarily undertaken at a technical level?

When FRSSI was first developed (2003-2005) it was primarily undertaken at a technical level. However as the process evolved the scope broadened beyond a strictly technical exercise. Gottfried et al. (2008 p. 15-23) [CAN002907, Exhibit 398] provides additional clarification on the evolution of the process.

2. Can you confirm that for the workshops held in 2007 and 2008 to discuss structured decision making and trade-offs within the FRSSI model, First Nations participated primarily through technical representatives and not political leaders?

I would agree that the majority of the participants were primarily through technical representatives at the FRSSI workshops. Efforts were made by DFO to broaden participation at the workshops, but that was only partially successful. I would add though that was not the only opportunity for input. I made presentations in a number of First Nations forums regarding FRSSI, setting of escapement targets and how it relates to wild salmon policy implementation. The FRSSI workshops were only part of the process. The workshops were developed in order to obtain input on the conceptual approach and also technical details of the escapement strategies.

Consultation was conducted following the FRSSI workshops through established processes. For First Nations, these processes included bilateral meetings with individual Bands, tribal councils, watershed advisory processes and other established organizations.

3. If your answer to Question 2 is yes, is it your understanding that the First Nations technical representatives who attended the above mentioned workshops did not

carry mandates to discuss or make trade-offs between harvest and escapement levels or to make decisions regarding the resulting impacts on s.35 rights?

I would agree that a number of First Nation representatives did speak to this issue about their concerns regarding lacking a mandate to discuss or make trade-offs between harvest and escapement levels or to make decisions regarding the resulting impacts on s. 35 rights. However, we were not asking those First Nation representatives to provide that kind of information and that is why it was important to have the consultative process that followed the FRSSI workshops as identified in my answer to question 3.

4. Do you agree that the trade-offs used within the FRSSI model are matters that require better understanding and further dialogue with First Nations leaders on a go-forward basis?

I would agree that more consultation regarding the FRSSI model is required with First Nations.

5. Do you agree that it would be beneficial that the implications of the selected FRSSI spawning escapement targets are understood by First Nations as it relates to both the present and future exercise of food, social and ceremonial fishing rights to Fraser River sockeye?

I would agree that it is beneficial that the implication of escapement targets developed by FRSSI escapement targets or any method that is used to develop escapement targets are understood by First Nations and others who would be impacted by their implementation.

6. Do you agree that it is important for First Nations (and stakeholders) to have an understanding of: (a) what the FRSSI model is capable of doing and what it is not, and therefore how the FRSSI model can and cannot be used; and (b) the FRSSI model's strengths and weaknesses in generating escapement options?

Yes

7. Do you agree that First Nations would benefit from understanding how the FRSSI model can help them to conduct short, medium and long term assessments of the implications of various escapement options including, for example, implications on conservation and harvesting?

Yes

8. What steps or strategies can you suggest could be taken by DFO and/or others to help ensure better understanding among First Nations on what FRSSI is, how it works, and what it is trying to achieve? Please describe where funding for any of the steps or strategies you propose would best be found within DFO's budget.

I think the strategy of developing co-management processes that the department and First Nations are currently undertaking is a good place to broaden the discussion. I think as well that First Nation Technical representatives should take a more active role in the FRSSI process than they have to date. Examples of collaborative work could be:

- First Nation technical representatives working with DFO staff could develop a paper to be peer reviewed on the FRSSI model.
  - Conduct a workshop(s) with the First Nations and others that would conduct a Structured Decision Making process for deciding on an escapement strategy for Fraser River sockeye.
9. Do you agree with the suggestion at page 33 of Exhibit 400 that "hands-on workshops with those who are interested in FRSSI and who are affected by the decisions that flow from it would help in broadening the understanding of the tools available in the FRSSI model"?

I'm not exactly sure what Mr. Staley means by "hands-on" workshops, but if he means having technical representatives have copies of the FRSSI model to run I don't have any issues with that suggestion. I would add that we have been and remain open to meeting and discussing ways to improving and broadening the understanding of the tools available in the FRSSI model.

10. If the answer to Question 9 is yes, do you think that such workshops ought to be led by a neutral facilitator and include presentations from different perspectives on the strengths, weaknesses and implications of the FRSSI model?

I think having a facilitator would be an asset, but not essential. I am certainly open to having a workshop include presentations that present the strength, weaknesses and implications of the FRSSI model.

11. If the answer to Question 9 or 10 is yes, can you commit to helping DFO to ensure such workshops occur? If not, why not? Is any potential hesitation to commit to such workshops a result of funding constraints?

I can commit to helping ensure that such a workshop occurs. Funding is a potential constraint and needs to be considered along with other priorities. It will be very important to agree upon the scope and intent of the workshop. I am very interested in developing ways to broaden the understanding of the FRSSI model and also how to make improvements to the model.

12. Do you also agree that regular updates and assessments of the use and implications of the FRSSI model will be a necessary part of its application, and that First Nations should be a part of any group completing such assessment?

I think we have undertaken regular updates and peer reviews of the FRSSI model have already happened twice. I would agree that First Nations be part of completing an assessment.

13. Do you agree that the current FRSSI model was developed with certain assumptions regarding the timing and distribution of the 4 run timing groups?

Like many (all?) models, assumptions were made on future performance based upon historical data. It is important in modeling to be explicit about the assumptions that were made as they may have an impact upon results generated by the model. Migration timing (e.g. median dates, shape and distribution) of Fraser sockeye stocks was estimated based upon past data. Future work items on refining those assumptions including correlation between stocks, correlation over time, capacity estimates, management adjustments, migration timing, implementation error, pre-spawn mortality, trends in productivity and choice of population model have all been flagged as areas for additional work. The paper on the FRSSI model was peer reviewed May 2010. The CSAP salmon sub-Committee recommended a number of changes to the paper. That work is near completion. The paper will contain recommendations for future work on the FRSSI model. It is always important in modeling work to test the impact assumptions may have on results.

14. Do you agree that those assumptions are being challenged as we see some of the runs coming through the system at different times than previously assumed (for example some of the early portions of the supposed Early Summer group are actually migrating with the Early Stuarts, and some of the later portions of the Early Summer group are migrating with the Summers)?

This question is best addressed by the FRSSI working group members as to the breadth of these changes. I would agree that there appears to be changes to the return timing of Fraser River sockeye stocks as compared to the historical database.

15. If your answers to Question 13 or 14 are no, please respond to the comments made by Mike Staley on February 7, 2011 (pages 56-57, lines 34-4 of the transcript).

“...One of the other issues with the current set of management groups we have is that they were established with a certain set of assumptions about timing and distribution. And one, either that timing and distribution has changed in reality, or our ability to observe it has changed. Certainly, our ability to observe it has changed in the sense that we're now using DNA as a stock identification tool, as opposed to the scales that were used prior to, I guess, the turn of the century. And the consequence of that is that, I think, there's probably room -- whether there should be four or not, probably the current set of four may not be the most appropriate set of four. There are stocks within some of the current management groups that are quite separate from the other members of that group in both timing and geography. So I think some more work needs to be done on that and I guess at the end of it I can't answer the question one way or another without doing more work.”

16. What do you see as the possible implications of the changes to and overlaps among run timing groups on how the FRSSI model operates?

While I think it is important to explore the implications overlaps of run timing groups I think it will be we also need to understand the implications of recent productivity changes and also to review the stocks that are included in each management group.

17. How can the FRSSI model respond to such changes?

The FRSSI model has been modified to explore a couple of alternative ways of exploring the implications of timing overlaps. As to the details of those changes the question is best addressed by the FRSSI working group members as to the breadth of these changes.

18. Do you agree with the recommendation made by Mike Staley at page 32 of Exhibit 400 that there ought to be further research and experimentation to improve the representation of overlaps and management imprecision in the FRSSI model?

I agree that further analysis is required to test the impact of timing changes within the FRSSI model.

19. If the answer to Question 18 is yes, what type of research and experimentation would do you suggest?

The FRSSI paper that was reviewed at CSAP May 2010 notes the following addition to the current FRSSI model:

- “Also incorporated into this version of the model is the ability to directly simulate the effect of overlap in migration timing of stocks. This is important when estimating total catch and spawners to the grounds in the simulation. Previous model versions assumed an ability to harvest the full amount available in each timing group without taking into account constraints from co-migrating stocks. This led to catches that were larger than realistically achievable and escapement that was smaller than would have occurred.
- The ability to explicitly examine the consequences of future productivity patterns has been added to this model. Previous model versions allowed for total and sudden changes in productivity, but this model will allow us to apply patterns of productivity into the future.”

Under next steps in the same paper section 4.3 the paper identifies priorities areas for future work

“We identify six priority areas for on-going work in preparation for the next round of stakeholder workshops, which are planned for the end of 2010 and early 2011:

- Review the freshwater ecology of each stock to identify plausible hypotheses for the structure of best fit models (i.e. why are some lag-terms significant?)
- Explore risk management approach to uncertainty in SR models and assess the risk of being wrong in assumptions about delayed-density effects (e.g. what if we manage a Ricker-type stock based on Larkin model assumptions).
- Explore implications of alternative SR models (i.e. number of lag terms) for setting benchmarks under the *Wild Salmon Policy*.
- Investigate differences between this model and the previous version.
- Explore alternative approaches for random variation in forward simulations. For example, should there be a constraint on the multiplicative error, or on calculated recruitment? A constraint on simulated recruits could be based on observed recruitment (e.g. 2 or 3 times largest observed) or some multiple of what's been modeled in the previous two cycles in the simulation.
- Enhance the communication of model scenarios and implications (e.g. Larkin fits), and facilitate real-time use during workshop deliberations (e.g. speed, graphical user interface)

- Finalizing the dataset(s) for Fraser Sockeye. There are several on-going processes dealing with this, including: a) Cultus dataset from the Cultus Conservation Team, b) data checking for the non-Cultus populations by the Pacific Salmon Commission staff, and c) checking historic escapement estimates for proper use of zeroes versus NAs by Fraser Stock Assessment staff. Figure 19 and Appendix 5 show the effect of recent data revisions on parameter estimates (bottom panel vs. top panel on the left)."

While I agree that exploring what the impacts may be on timing it is important to keep in mind that there are a number of other work items that have been identified.

20. How can FRSSI (and the historical data from the 19 indicator stocks that FRSSI uses) be used to explore possible futures and debate appropriate actions?

Possible futures I assume means changes to productivity. This has been considered and while the model can easily be made to consider a wide range of possible productivity scenarios the challenge I think is coming to any agreement on what scenario may be likely and then consider appropriate actions.

21. Does DFO plan to use the FRSSI model to explore the possibility of moving into more known stock fisheries? If yes, how? If no, why not?

Sorry I don't know what is meant by the question

22. What is the status of the "in-river management model" that is being jointly developed by DFO and SFU (and that was referred to by Brian Riddell on February 3, 2011 at page 40, lines 26-44 of the transcript and is referred to by Mike Staley in Exhibit 400 at page 33)?

I think there has been significant progress by SFU in developing the model. However, the last version that I saw I thought still required additional work and peer review before it could be used. However, I have not been directly involved in the development of that model for over a year now and I think getting a current update would be more helpful. I recommend that Mark Saunders be asked as to the current status.

23. From your vantage point, what are the benefits of and the challenges to developing a defined set of escapement targets for each indicator stock and run-timing group?

The pros/cons of various approaches to setting escapement targets were a topic covered in a 2006 workshop. The workshop had a broad range of scientific

attendees. I won't repeat all the conclusions here, but has attached a copy of the report for your reference [CAN010691]. You can also find the document at:  
[http://www.dfo-mpo.gc.ca/csas/Csas/Proceedings/2006/PRO2006\\_004\\_E.pdf](http://www.dfo-mpo.gc.ca/csas/Csas/Proceedings/2006/PRO2006_004_E.pdf)

This issue has arisen a number of times recently and it would be possible I think to have the FRSSI model explore the alternative views and produce a summary that could be used for a discussion at a future workshop as was discussed in question 11.

24. Would defined escapement targets be easier to communicate to First Nations and other fishers than the current TAM rules?

I have been involved in Fraser River sockeye management since the 1989. During that period I have been involved in the process for setting Fraser River sockeye escapement targets. Regardless of the methodology that is used to determine escapement targets there will always be a great deal of interest in how those targets were determined. The previous method known as the "rebuilding program" generated as much interest and questions as the program that is known as the FRSSI process.

This is not surprising as the determination of spawning targets is key to ensuring the sustainability of the resource.

I think the current TAM rules are already very clearly defined. At a certain run size no directed fisheries would occur; then above that run size and up to the run size point where the maximum total allowable mortality is authorized (i.e. 'cut-back point') there is a fixed escapement target and finally above the 'cut-back point' the maximum total allowable mortality rate of 60% is set. Copied below is the Fraser River Sockeye Escapement Strategy 2010 – Model Overview and Summary of Planning Simulations memo [CAN252068, Exhibit 407]. Section 1.5 page 11 Figure 1 describes how TAM rules are to be interpreted.

The TAM concept is used in many other jurisdictions and is consistent with DFOs precautionary approach as documented in SAR 2006/023 [CAN002118]. You can find the document at: [http://www.dfo-mpo.gc.ca/csas/Csas/status/2006/SAR-AS2006\\_023\\_E.pdf](http://www.dfo-mpo.gc.ca/csas/Csas/status/2006/SAR-AS2006_023_E.pdf)

25. Could defined escapement targets be developed in a manner that still allow managers the latitude to implement harvest rate ceilings to protect less productive stocks when returns of the target stocks are large?

I think the current system already allows for the latitude you seek on less productive stocks.



I refer you to the CSAS proceeding series document 2006/004 [CAN010691] outlining significant challenges to implementing a fixed escapement policy. You can find the document at:

[http://www.dfo-mpo.gc.ca/csas/Csas/Proceedings/2006/PRO2006\\_004\\_E.pdf](http://www.dfo-mpo.gc.ca/csas/Csas/Proceedings/2006/PRO2006_004_E.pdf)

**B. Southern Integrated Harvest Planning Committee (IHPC)**

1. Are you aware that IHPC participants, such as Pat Matthew and others, have identified the lack of mandated First Nations representation as a problem or challenge to the effectiveness of the IHPC?

I am aware of that challenge.

2. Do you agree that ensuring adequate First Nations representation is one of the current challenges for the Southern IHPC?

I do agree. Efforts are being made by DFO and First Nations to address the challenge.

3. Would increasing First Nations representatives on the Southern IHPC strengthen the ability of the IHPC to advise on management planning and help to meet the goal of providing robust and adequate First Nation representation?

I think addressing the challenge you addressed in questions 1 is a higher priority. Increasing the number of First Nation representatives may also assist.

4. Do you agree that increasing First Nations representation on the Southern IHPC would also benefit from ensuring that the First Nations representatives are from a range of different locations, and represent different viewpoints and interests?

I agree that it having First Nations representatives from a range of locations is an important consideration for ensuring appropriate representation on the Southern IHPC.

5. If you agree with Questions 2, 3, or 4, what steps could DFO take to support and increase First Nations representation on the Southern IHPC?

See answer to D.1.

6. Do you agree that having a funded and mandated Tier 1 and Tier 2 process would assist First Nations in participating in Tier 3 advisory processes, including the IHPC, in a meaningful and representative way?

DFO does provide funds for Tier 1 and Tier 2 processes.

7. Is it true that DFO has provided financial support and capacity building to the IHPC to help it achieve effectiveness as an advisory body?

DFO does provide financial support to the operation of the IHPC (e.g. document distribution, teleconference cost, travel, meeting rooms, facilitation, meeting records and DFO support). DFO has not supplied directly under the IHPC budget funds to support capacity building, however, other sources of funds have been used to support capacity building and improve the effectiveness of the IHPC.

8. How much has been budgeted in the last 5 years to support the IHPC process?

We are working on collecting that information.

9. Have any funds from the IHPC process been budgeted in the last 5 years to support a Tier 1 and Tier 2 process?

No funds have been budget under the IHPC process for Tier 1 and Tier 2 process. However, DFO does provide funds from other sources to support Tier 1 and Tier 2 processes that would assist the IHPC (a Tier 3 process).

10. If the answer to Question 9 is yes, how much has been budgeted and how have these funds been categorized?

This is a challenging question to answer as financial agreements with First Nations cover often cover more than one item. Without seeking the support of others within DFO I would not be able to address this question.

11. What dispute resolution approach, if any, does the IHPC facilitator and/or DFO use to help resolve potential disputes arising at the IHPC in a transparent manner?

The IHPC Terms of reference has appendices outlining a code of conduct and role of the facilitator that are used to reduce the occurrence of disputes. One tool that was used in 2006 to try and resolve a dispute regarding recovery planning for Cultus Lake sockeye was a Structured Decision Making Process. This type of process certainly fits within the criteria of a transparent. If there are other tools that can be utilized to resolve disputes we would be open to exploring those tools.

12. Has DFO taken any specific steps specifically in response to the March 2007 evaluation of the IHPC by Pam Cooley (Exhibit 609)? Including, in particular, in response to the observed need to improve First Nations "true representation at a table like the IHPC" as noted at page 2 of Exhibit 609?

I don't know what is meant by true representation. The IHPCs Terms of Reference seek representatives as follows

*"Inclusive Representation:*

*Representation on advisory bodies should relate to the mandate and function of the committee. Participation in advisory processes should be fairly balanced and reflect a broad range of interests in fisheries and oceans issues in the Pacific Region, to the extent possible, so that a diversity of perspectives is involved."*

The assessment by Ms. Cooley goes on to note that the IHPC members have a great deal of respect for the First Nation challenges in seeking "true" representation at the IHPC. Having the appropriate representation would lead to a more viable IHPC, but waiting is not an option.

DFO has worked with First Nations to try and address representation at the IHPC and other Committees. I think it continues to be a work in progress.

13. Do you agree with Ms. Cooley that the IHPC would be enhanced in the future with "a more consistent and relevant approach to harvest planning" as noted at page 2 of Exhibit 609? Please explain

DFO in conjunction with IHPC members have set up various sub-Committees as recommended in Ms. Cooley's report in order to try and address this issue. We remain committed to the IHPC process and working to improve the functioning of the Committee.

**C. Socio-economic Implications**

1. What steps has DFO taken to discuss with First Nations the report by GS Gislason & Associates dated June 8, 2006, which is Exhibit 601?

The report was not widely circulated or discussed with First Nations. The document was shared with participants of the FRSSI workshops.

2. What steps has DFO taken, if any, to address the lack of information noted in Exhibit 601 related to assessing the socio-economic value of Food, Social and Ceremonial ("FSC") fisheries?

I don't know of any additional work in this area since 2006.

3. Do you agree that any study of the socio-economic value of FSC fisheries would have to carefully look at the differences among First Nations located within the migratory route of Fraser River Sockeye and their fisheries?

Question best addressed by those with expertise in this area.

4. Do you agree that it would be an error or at least insufficient for a study of the socio-economic value of FSC fisheries to assume that the value of fish caught for FSC purposes is equivalent to the landed value of fish caught for commercial purposes? Please explain.

I agree that it would be an insufficient estimate of the socio-economic value of FSC fisheries. I don't think that type of monetary figure captures the social values.

**D. Co-Management or Collaborative Management Processes**

1. In your evidence on March 16, 2011, you mentioned the "efficiencies" and "improvements to the processes that we have underway as around consultation" (see pages 35-36 of the transcript). What "efficiencies" and "improvements" were you referring to that relate to consultation with First Nations and First Nations co-management?

I was referring to the development of the First Nation Fishery Council, the Forum on Conservation and Planning and efforts to explore co-management with First Nations through the "Roadmap" process.

2. In your evidence on March 16, 2011, in the context of a brief discussion about co-management you said "...there's so much one can do with existing legislation" (see page 36 of the transcript at lines 6-7). Please describe what steps towards co-management can be explored within existing legislation?

This would be better addressed by those actively working on co-management within DFO.

3. Are there legislative amendments which might be useful for the development and implementation of co-management processes between the Federal Crown and First Nations? If so, please describe what potential challenges to co-management such amendments might assist in resolving and how.

This would be better addressed by those actively working on co-management within DFO.

Thanks very much.