

**COMMISSION OF INQUIRY INTO THE DECLINE OF SOCKEYE SALMON  
IN THE FRASER RIVER**

In the matter of Her Excellency the Governor General in Council, on the recommendation of the Prime Minister, directing that a Commission do issue under Part I of the *Inquiries Act* and under the Great Seal of Canada appointing the Honourable Bruce Cohen as Commissioner to conduct an inquiry into the decline of sockeye salmon in the Fraser River

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**REPLY SUBMISSIONS OF THE FIRST NATIONS COALITION**

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## Table of Contents

	<u>Page</u>
<b>I. OPENING COMMENTS.....</b>	<b>1</b>
A. Organization of Reply Submissions.....	1
B. Canada’s Final Submissions .....	1
<b>II. REPLY .....</b>	<b>2</b>
A. Financial Crisis .....	2
B. Canada’s Conservation Mandate .....	3
C. WSP .....	5
i) Intent and Importance of the WSP.....	5
ii) Consultation Regarding the WSP .....	8
D. Terminal and Near Terminal Fisheries .....	9
E. Canada’s Mandate for Co-Management .....	11
F. Common Property Resource .....	12
G. Dr. Harris’ Report and Testimony .....	13
H. Challenges to Inter-Governmental Cooperation .....	13
I. Recreational Fishery .....	17
J. Catch Monitoring and Enforcement of Aboriginal Fisheries .....	20
K. MSY.....	21
L. Delayed Density Dependence, Cyclic Dominance, and “Over- escapement” .....	26
M. Aquaculture .....	33
N. Contaminants .....	36
<b>III. AREAS OF AGREEMENT.....</b>	<b>37</b>
A. Broad Areas of Agreement.....	37

B.	Specific Areas of Agreement.....	40
i)	Canada's Submission on Future Sustainability of the FRSS Fishery .....	40
ii)	Funding.....	41
iii)	Aquaculture.....	41
iv)	Marine Spills .....	43
v)	Terminal Fisheries .....	45

## **I. OPENING COMMENTS**

### **A. Organization of Reply Submissions**

1. The approach used in this Reply is two-fold: First we reply to particular points raised by certain participants with which the FNC takes issue, and which we submit have mischaracterized the evidence, framed the issue without reference to the proper legal context, or relied on facts not in evidence. Second, in the spirit of the Commissioner's direction to encourage broad cooperation among stakeholders, we identify those areas where general consensus and agreement amongst Participants can be found.
2. We confirm, however, that silence cannot be accepted as agreement or acquiescence. The immense amount of evidence (both exhibits and transcripts) in the Inquiry together with the extremely condensed timeframes within which Participants have been required to work make it impossible to respond to or raise all issues of concern or disagreement.

### **B. Canada's Final Submissions**

3. Canada says that its intent has been not to advocate for any position or make recommendations, but rather to assist the Commissioner in the preparation of his final report through a "fair, neutral, and factual summary" of the key evidence.<sup>1</sup> While it is possible to characterize some portions of Canada's written submissions as neutral (in that they are focussed on listing and summarizing the words of existing policies), such submissions are of limited value by their failure to explain how these policies have been implemented in DFO's day-to-day practices. Evaluating DFO's implementation of its policies is central to the Commissioner's mandate of developing recommendations for improving the sustainability of the fishery, including "changes to the policies, practices and procedures" of DFO.
4. The FNC further submits that it is inaccurate for Canada to suggest that it has avoided advocating for any position. The process of selecting which portions of the evidence to highlight as salient, is, at its core, a process of advocating for a particular side of the story upon which the Commissioner should rely.

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<sup>1</sup> Final Submissions of the Government of Canada, paras. 18, 711

5. Canada has taken an active advocacy role throughout the Inquiry by making submissions on the numerous applications brought before the Commissioner, aggressively cross-examining witnesses, and selecting, through its lists of documents or topics for examination of witnesses, which narrative to present (or not present) to the Commissioner. The FNC submits that these are not the actions of a neutral participant, but rather of an active advocate, and Canada's submissions should be viewed as reflective of its perspective and not as simply a neutral and fair factual summary.

## II. REPLY

### A. Financial Crisis

6. Throughout the Inquiry, there has been evidence of budget reductions facing DFO. While additional funds would no doubt be welcomed by DFO and likely useful to the management and protection of FRSS and their habitats, in the FNC's submission, it is overly simplistic to state, as Area B Harvest Committee and Area D Salmon Gillnet Association ("Area B and D") does, that FRSS "can only be protected with a substantial infusion of money."<sup>2</sup> Although the FNC supports recommendations for increased funding to DFO, we submit that such funding must be used more efficiently to meet DFO's legal obligations, including for the conservation of FRSS and for meeting and honouring its s.35 constitutional obligations to First Nations. DFO's legal obligations to conserve FRSS, consult with First Nations, and provide priority for FSC fisheries will demand that its budgets be focussed to ensure those obligations are met.
7. Furthermore, more money does not necessarily instil a conservation ethic or guarantee conservation of the resource. More money, *if directed correctly*, could help to conserve FRSS CUs and therefore increase the opportunities that FRSS have to evolve within a vulnerable and changing ecosystem. *If* existing and new money is prioritized for: collaborative government-to-government management with First Nations and an efficient advisory process with stakeholders, science that integrates TEK and better assists resource management, and the efficient implementation of the WSP, FRSS *may* have a better chance.

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<sup>2</sup> Final Written Submissions of Area B Harvest Committee and Area D Salmon Gillnet Association, pp. 7, 10, 77

8. There are no quick, easy or short term fixes to conserving FRSS. The FNC submits that ensuring the sustainability of FRSS and the fisheries is not simply a matter of throwing more money at an old problem. Any new monies must be committed to implementing a change in the *status quo* regarding conservation, research, allocation, and decision making.
9. As was clear during the Inquiry, the effects of reduced budgets for DFO's Pacific Region include significant limitations in understanding of the health of FRSS, less protection of FRSS habitat, and less research on risks and uncertainties facing these stocks. With less money, DFO's patterns of engagement with First Nations and stakeholders must become more effective and efficient, science and management must be focussed on fish health and habitat protection, and research priorities must be set by managers, including First Nations, and stakeholders. DFO, through licence buy backs, has borne significant costs of transitioning the no longer sustainable commercial fishery into a more sustainable fishery.

**B. Canada's Conservation Mandate**

10. In reply to the submissions of Westcoast Trollers (Area G) Association and United Fishermen and Allied Workers' Union ("Area G") at paras. 3 to 27 that "the purpose of the *Fisheries Act* and other federal statutes and treaties is to provide yield (harvest benefits) not conservation of fish *per se*"<sup>3</sup> the FNC submits that Area G has overlooked many central statutes, decisions of the Supreme Court of Canada, and international declarations that provide Canada, and in particular DFO, with a clear mandate to pursue its conservation objective. When these authorities are considered, the FNC submits that Canada's conservation mandate is patently clear.
11. In addition, Area G has overlooked one of the central focuses of the Inquiry, which is to conduct the Inquiry with the aim of respecting conservation of FRSS, and to develop recommendations aimed at improving future sustainability of the FRSS fishery (and therefore FRSS).

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<sup>3</sup> Final Submissions of West Coast Trollers (Area G) Association and United Fishermen and Allied Workers' Union, paras. 3-27

12. Canada's constitutional responsibility to pursue conservation measures has been oft cited in cases dealing with Aboriginal rights to fish for FSC purposes (as well as many other fisheries cases). For example, in *Jack v. the Queen*, [1980] 1 S.C.R. 294, Dickson J. writing before the enactment of s.35 of the *Constitution Act, 1982* reasoned as follows:

Conservation is a valid legislative concern. The appellants concede as much. Their concern is in the allocation of the resource after reasonable and necessary conservation measures have been recognized and given effect to. They do not claim the right to pursue the last living salmon until it is caught. Their position, as I understand it, is one which would give effect to an order of priorities of this nature: (i) conservation; (ii) Indian fishing; (iii) non-Indian commercial fishing; or (iv) non-Indian sports fishing; the burden of conservation measures should not fall primarily upon the Indian fishery.

I agree with the general tenor of this argument. Article 13 calls for distinct protection of the Indian fishery, in that pre-Confederation policy gave the Indians a priority in the fishery. That priority is at its strongest when we speak of Indian fishing for food purposes, but somewhat weaker when we come to local commercial purposes. If there are to be limitations upon the taking of salmon here, then those limitations must not bear more heavily upon the Indian fishery than the other forms of the fishery. With respect to whatever salmon are to be caught, then priority ought to be given to the Indian fishermen, subject to the practical difficulties occasioned by international waters and the movement of the fish themselves. But any limitation upon Indian fishing that is established for a valid conservation purpose overrides the protection afforded the Indian fishery by art. 13, just as such conservation measures override other taking of fish.<sup>4</sup>

13. In *R. v. Hare and Debassige*, cited by the Supreme Court of Canada in *R. v. Sparrow*, Thorson J.A. emphasized the need for priority to be given to measures directed to the management and conservation of fish stocks with the following observation (at p. 15):

Since 1867 and subject to the limitations thereon imposed by the Constitution, which of course now includes s. 35 of the *Constitution Act, 1982*, the constitutional authority and responsibility to make laws in relation to the fisheries has rested with Parliament. Central to Parliament's responsibility has been, and continues to be, the need to provide for the proper management and conservation of our fish stocks, and the need to

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<sup>4</sup> *Jack v. the Queen*, [1980] 1 S.C.R. 294, p. 313, cited in *R. v. Sparrow*, [1990] 1 S.C.R. 1075

ensure that they are not depleted or imperiled by deleterious practices or methods of fishing. [emphasis added]<sup>5</sup>

14. In *R. v. Sparrow*, the Supreme Court of Canada endorsed the above noted passages from *Jack v. the Queen* and *R. v. Hare and Debassige*, and set out what has become known as the doctrine of priority, specifically that the Crown must give priority to Aboriginal rights to fish for FSC purposes, subject only to conservation measures. This doctrine of priority and the principle that conservation is first, was first advanced by First Nations people in the *Jack* case.<sup>6</sup> The FNC submits that the Supreme Court of Canada has clearly confirmed that Canada holds a central responsibility to provide for the conservation of fish stocks.
15. DFO also has conservation obligations arising from domestic statutes such as the *Fisheries Act*, the *Oceans Act*, and the *Species at Risk Act*, and through international instruments such as the *United Nations Convention on Biological Diversity*. These statutes and declarations are outlined in Canada's submissions at pages 31-41 and 47 and are not discussed in detail herein.
16. Area G's suggestion at paras. 16 to 20, that sustainable development responsibilities trump conservation of FRSS is short-sighted. While the FNC supports sustainable fisheries, we do not see conservation of those fisheries as being in conflict with sustainable development. Human activity must be managed so that fish can survive and thrive.
17. The FNC respectfully submits that it is inconsistent with the law, with the Inquiry's Terms of Reference, and with the goal of promoting the long term sustainability of FRSS and its fisheries, for Area G to suggest that Canada lacks a mandate to pursue conservation of fish. To the extent that Area G's submissions are based on the faulty premise that DFO lacks a mandate to pursue conservation of FRSS or other species, the FNC respectfully submits that they should be rejected.

## **C. WSP**

### **i) Intent and Importance of the WSP**

18. In reply to Area G's third point, that the WSP should be scrapped and replaced with a restatement that the intent of the WSP is to provide for MSY while avoiding

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<sup>5</sup> *R. v. Hare and Debassige*, [1985] 3 C.N.L.R. 139 at p.15, cited in *R. v. Sparrow*, [1990] 1 S.C.R. 1075



unreasonable and genuine risk of extirpation, the FNC submits that such a proposal is inconsistent with the spirit, intent, and final wording of the WSP, and undermines the five year process undertaken with First Nations and stakeholders to draft the content of the WSP.

19. The objective of the WSP is not, as Area G submits, to provide for MSY while avoiding risk of extirpation. The goal of the WSP, as clearly stated in the “snapshot” on page vi, is “to restore and maintain healthy and diverse salmon populations and their habitats for the benefit and enjoyment of the people of Canada in perpetuity.” The WSP further states that this goal is to be advanced by “safeguarding the genetic diversity of wild salmon populations, maintaining habitat and ecosystem integrity, and managing fisheries for sustainable benefits” [emphasis added].<sup>7</sup> The concept of sustainable benefits is contrasted with that of sustainable use, and the definition section of the WSP notes that “sustainable benefits...derive from a broader range of consumptive and non-consumptive resource uses.”<sup>8</sup>
20. While the WSP acknowledges that fisheries must be managed for the benefits of Canadians, the benefits derived from the resource are not solely harvest or MSY related. This point was also made by the numerous witnesses who testified to the cultural, biological, and aesthetic values derived from FRSS. It is simply incorrect to assert that providing MSY or harvest benefits is or should be the primary intent or goal of the WSP. Area G’s submission as to the WSP is based on the false premise that Canada lacks a mandate to conserve wild salmon. As outlined below, the FNC submits that this argument is without merit.
21. Not only do Area G’s submissions improperly characterize the goal of the WSP, but they also ignore the four principles that are meant to guide the WSP.<sup>9</sup> The approach advocated by Area G overlooks the priority of conservation; the need to honour obligations to First Nations; the requirement to consider not only social and economic consequences, but also biological consequences, and to reflect science and TEK; and

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<sup>6</sup> *Jack, supra*, p. 313

<sup>7</sup> Exhibit 8 (Canada’s Policy for Conservation of Wild Pacific Salmon, June 2005), p. vi, Snapshot

<sup>8</sup> Exhibit 8 (Canada’s Policy for Conservation of Wild Pacific Salmon, June 2005), p. 40

<sup>9</sup> Exhibit 8 (Canada’s Policy for Conservation of Wild Pacific Salmon, June 2005), pp. 8-9

the need to make resource management decisions in an open and transparent manner.<sup>10</sup>

22. Scrapping and replacing the WSP with a simple statement that the purpose of the WSP is to provide for MSY while avoiding unreasonable and genuine risk of extirpation, would not only be an inaccurate summary of the policy, but would also be the antithesis of the conservation goals, vision, and purpose of the WSP. The final text of the WSP was achieved through a collaborative process where DFO sought the input and “buy-in” from First Nations and stakeholders. A simple delete and replace would undermine the years of work to develop the WSP. While Canada’s implementation of the WSP has been fraught with challenge, the solution is not to suggest we can simply turn the clocks back (a notion antithetical to ecosystem based management and the reality that all ecosystems continue to change and evolve) and return to supporting an unsustainable fishery.
  
23. Area B and D takes the position that the WSP is “a failed experiment that has left an aftermath of significant problems.”<sup>11</sup> Area B and D goes on to argue that DFO should either “be provided with the tools for a balanced and effective implementation of the WSP or that it should be ‘abandoned’.”<sup>12</sup> While the FNC agrees that DFO’s limited implementation of the WSP to date has been disappointing, we do not agree with Area B and D’s characterization of the policy as a “failed experiment.”<sup>13</sup> Canada’s implementation of the WSP has been fraught with challenges, but the solution is not to return to pre-WSP times (as advocated by the BC Fisheries Survival Coalition and Southern Area E Gillnetters Association (“Area E”)), nor to abandon or scrap the policy. The WSP grew out of the “evolution in public attitudes, science, laws and decision-making”<sup>14</sup> that has been occurring over the last 25 years; with those origins, it remains a current and needed policy today. The FNC submits that the goals of the WSP should not be “abandoned,” but rather supported through such things as dedicated funding, a clear implementation plan, a champion within DFO responsible for explaining and

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<sup>10</sup> Exhibit 8 (Canada’s Policy for Conservation of Wild Pacific Salmon, June 2005), pp. 8-9

<sup>11</sup> Final Submissions of Area D Salmon Gillnet Association and Area B Harvest Committee (Seiners), p. 42

<sup>12</sup> Final Submissions of Area D Salmon Gillnet Association and Area B Harvest Committee (Seiners), p. 74

<sup>13</sup> Final Submissions of Area D Salmon Gillnet Association and Area B Harvest Committee (Seiners), p. 42

implementing the policy, and an efficient approach to recovery planning. Many of these recommendations are also included in the recent review of the WSP conducted by Gardner Pinfold.

**ii) Consultation Regarding the WSP**

24. Relying on the Meeting Inventory compiled by DFO's Consultation Secretariat (see Exhibits 945 and 945A), at para. 424 of its submissions, Canada writes: "In particular, there have been at least 516 meeting days since 2005 that have been relevant to aspects of implementation of the WSP, including Strategy 4." The FNC submits that Exhibits 945 and 945A should be given little weight. The FNC submits that the confusion as to how DFO discharges its obligations to consult with First Nations permeates the Consultation Secretariat, and the records it keeps, including the Meeting Inventory.
25. Mr. Shepert was asked, with reference to the UFFCA tab of Exhibit 945A, whether there had been substantive discussions with the UFFCA on how to implement the WSP on the ground other than FRSSI. He testified that such meetings had not occurred and that this Exhibit raised concerns for him.<sup>15</sup> Mr. Todd's testimony also cast doubt on the integrity of Exhibit 945A. The FRAFS tab of Exhibit 945A suggests that a "WSP update" was provided at the 2-day Visions Conference held in October 2010. Mr. Todd who was involved in organizing the Visions Conference and attended the second day of the workshop testified that the WSP "...was not on the agenda. Somebody, during some conservation, may have said something that had "WSP" in a sentence, but as a topic, Visions topic, to my knowledge it wasn't on the agenda."<sup>16</sup>
26. The FNC submits that the *viva voce* evidence of Mr. Shepert and Mr. Todd provides necessary insight on and deserves significantly more weight than Exhibit 945A, which, on its face, suggests that over 26 WSP/FRSSI consultation meetings have occurred between DFO and the UFFCA and FRAFS since 2007 – a number that the FNC submits is a great over-statement.

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<sup>14</sup> Exhibit 8 (Canada's Policy for Conservation of Wild Pacific Salmon, June 2005), p. 5

<sup>15</sup> Transcript, July 4, 2011, pp. 71-72 (Marcel Shepert)

<sup>16</sup> Transcript, June 30, 2011, p. 97 (Neil Todd)

27. The FNC submits that this type of debate about what constitutes consultation and whether DFO has discharged its consultative obligations is rooted in the lack of clarity regarding the consultative processes that DFO relies upon, and permeates even the highest levels of DFO's senior bureaucracy.<sup>17</sup> Within this confusion, DFO staff are directed to keep track of every phone call, email and conversation they have with First Nation representatives so that the sheer number of contacts, whether substantive or not, will somehow add up to meeting their legal obligations. DFO's failure to collaboratively develop consultation processes that work for DFO and First Nations should be addressed by the Inquiry. The FNC submits that establishing effective and transparent Tier 1, 2, and 3 processes with clear mandates and responsibilities for all parties is an important step out of confusion and into more accountable decision making processes.

#### **D. Terminal and Near Terminal Fisheries**

28. Two First Nations participants, the Western Central Coast Salish First Nations ("WCCSFN"), and the Laich-Kwil-Tach Treaty Society ("LKTS") have raised some concerns about whether DFO has conducted deep consultation regarding a movement to more terminal and near terminal fisheries and the impacts of such a move to traditional First Nations' interception fisheries<sup>18</sup>
29. To be clear, and in reply to these concerns, the FNC is not recommending the pursuit of commercial terminal and near terminal river fisheries at the expense of coastal First Nations communities, or absent proper consultation or analysis. The FNC recognizes that terminal and near terminal fisheries on known stocks in many areas are still demonstration fisheries, and that further work is required and underway to assess the viability of these operations. The FNC supports this ongoing work to improve the knowledge about and ability to implement more sustainable fisheries into the future.
30. The FNC submits that DFO's move to encourage and develop commercial terminal and near terminal river fisheries must not be developed exclusively within the upper Fraser River or exclusively on FRSS. Rather, this tool must be deployed throughout the marine areas and watersheds and on many species in a manner that provides increased FSC

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<sup>17</sup> See, for example, Transcript, September 28, 2011, pp. 80-85 (Claire Dansereau)

<sup>18</sup> Final Submissions of Western Central Coast Salish First Nations, paras. 137-139 and Principle 1(d); Final Submissions of Laich-Kwil-Tach Treaty Society and Aboriginal Aquaculture Association, pp. 10-12

fishing opportunities on known stocks within First Nations' territories. There are plenty of examples along the coast of opportunities to rebuild stocks. Such a tool may help to decrease pressure on FRSS thereby helping to transition away from the decades of Fraser centric management by DFO, and will ensure First Nations access to fish within their territories.

31. Area G, Area B and D, and LKTS question whether DFO has conducted analyses of terminal fisheries or the value of the fish caught therein, and whether the case for terminal fisheries has been made out.<sup>19</sup>
32. The FNC disagrees with suggestions that PICFI and the pursuit of terminal and near terminal river fisheries are being undertaken blindly or absent analysis. Rather, through PICFI, the move is being studied and implemented in a manner that builds the necessary capacity and tests the marketability of these fisheries. First Nations organizations including the UFFCA, the Chehalis Indian Band, the ONA, and the SFC, among others, have conducted analyses of the viability of their demonstration fisheries over the years, and of the marketability of their products.<sup>20</sup> While analyses are ongoing, to suggest that analyses or reviews have not been undertaken to date is incorrect.
33. In reply to Area B and D's arguments regarding the "depreciated value of fish caught terminally,"<sup>21</sup> we submit that such a position is based not on fact, but on false assumptions. When questioned about the marketability of fish caught up-river during terminal or near terminal fisheries, Mr. Shepert testified that a number of buyers (including reputable grocers and hotels) have expressed interest in buying and selling fish caught in terminal areas.<sup>22</sup>

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<sup>19</sup> Final Submissions of Laich-Kwil-Tach Treaty Society and Aboriginal Aquaculture Association, pp. 10-12; Final Submissions of Area D Salmon Gillnet Association and Area B Harvest Committee (Seiners), pp. 52-53; Final Submissions of West Coast Trollers (Area G) Association and United Fishermen and Allied Workers' Union, para. 129

<sup>20</sup> See, for example, Exhibit 1261 (Final Reporting Compilation: Market Planning and Coordination Support for Mid and Upper Fraser Demonstration Commercial Fishery Projects); Exhibit 1424 (PICFI: Okanagan Nation Alliance, Pilot Demo Fisheries); Exhibit 1425 (Near Terminal Commercial Fisheries Development Program, Final Report)

<sup>21</sup> Final Submissions of Area D Salmon Gillnet Association and Area B Harvest Committee (Seiners), p. 53

<sup>22</sup> Transcript, July 4, 2011, pp. 74-75 (Marcel Shepert)

34. In reply to para. 134 of Area G's submission, which references "photographs adduced by Mr. Eidsvik (and accepted by Ms. Farlinger as representative) to show the reality of terminal fisheries," the FNC submit that these photographs (Exhibit for identification MMM) are not in evidence and were not accepted by Ms. Farlinger in this way. Notably, Ms. Farlinger was not able to say where these photographs were taken or what they represent.<sup>23</sup> It is both inappropriate and inaccurate for Area G to submit that such photos, which are not in evidence, are representative of terminal fisheries or of selective fisheries.

**E. Canada's Mandate for Co-Management**

35. In reply to the submissions of the B.C. Wildlife Federation and B.C. Federation of Drift Fishers ("BCWF") that DFO's pursuit of co-management with First Nations is an abdication of its responsibility to the public, the FNC submits that this position disregards the full constitutional legal context within which DFO operates, and are without merit.

36. Far from abdicating its responsibilities, in pursuing co-management with First Nations DFO is moving towards methods that may help it to meet its legal obligations arising from s. 35 of the *Constitution Act, 1982* including the obligation to act in a manner that meets the honour of the Crown, the requirement to justify any infringements to Aboriginal rights, and the requirement to consult and accommodate First Nations.

37. There are numerous examples of co-management models that are being implemented under the existing legislative framework. Examples before the Commission include: (a) the PNCIMA model and its bilateral coordination steering committee;<sup>24</sup> and (b) the Archipelago Management Board established under the Gwaii Haanas Marine Agreement;<sup>25</sup> among others. Governance models can and are being pursued now, without the need for amending the *Fisheries Act*.

38. Furthermore, DFO has begun to signal an interest in engaging in a more honourable, trust-based relationship with First Nations, presumably with the goal of leading to a more stable, sustainable, and cost-effective management of the fishery – avoiding the costs (human and financial) of conflict. It is too early to tell whether these efforts are genuine.

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<sup>23</sup> Transcript, September 27, 2011, pp. 57-62

<sup>24</sup> See Exhibits 1201 and 1203 (MOU on PNCIMA Collaborative Oceans Governance)

Many First Nations do not trust DFO's motives or goals and have taken their concerns to the Courts.

39. The FNC submits that an approach wherein Canada respects its constitutional obligations to First Nations and avoids the high costs of litigation and conflict, is an approach that is in the best interests of FRSS and the public, and should be encouraged. Co-management offers DFO and First Nations an opportunity to move forward together on the path of reconciliation, in the manner suggested by the courts (though negotiation, not litigation) and in a manner that best promotes conservation of the resource and a sustainable fishery.
40. The FNC advocates for an inclusive governance or co-management regime. We submit that the tiered model promotes clarity of roles and responsibilities for all governments and stakeholders, including clarity regarding the advisory Tier 3 processes that could then facilitate more efficient dialogue and engagement at that level. The lack of clarity in the roles and responsibilities of governments (including First Nations) and stakeholders within Tier 1, Tier 2, and Tier 3 is a central barrier to effective resource management.
41. Some participants, through their participation and final submissions, oppose reconciliation between First Nations and the Crown, and thus continue on the path of conflict and uncertainty. In the FNC's submission, such positions will not bring stability or sustainability to the fishery and are not persuasive.

**F. Common Property Resource**

42. In reply to the submissions of the BCWF, at paras. 10 to 23, 33, 56, 124, 127 to 138, and 153, regarding fisheries being a common property resource, the FNC relies on paras. 17 to 22 of our submissions in response to the Commission's October 1, 2010 Paper Entitled "The Aboriginal and Treaty Rights Framework Underlying the Fraser River Sockeye Fishery,"<sup>26</sup> and also adopts paras. 3 to 20 of the submissions of the Western Central Coast Salish First Nations ("WCCSFN") on the Commission's October 1, 2010

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<sup>25</sup> See Exhibit 908 (Gwaii Haanas Marine Agreement)

<sup>26</sup> PPR 1, beginning at PDF page 182

Paper Entitled “The Aboriginal and Treaty Rights Framework Underlying the Fraser River Sockeye Fishery”<sup>27</sup> which we say are a complete answer to such arguments.

**G. Dr. Harris’ Report and Testimony**

43. In reply to the Province’s assertion at page 18 of its final submission, that the section entitled “Indian Reserves and Fisheries” in Dr. Harris’ paper (Exhibit 1135) should be given no weight because he did not refer to the cases of *R. v. Nikal* and *R. v. Lewis*, the FNC submits that Exhibit 1135 was intended to be a historical recitation, and not a legal analysis or interpretation. Dr. Harris was specifically asked by the Commission to prepare a paper that “provide[d] an overview of significant legal and historical events which have influenced First Nations access to and participation in the Fraser sockeye fishery for a period from initial contact to 1982.”<sup>28</sup> He was not asked to review all decisions of the Supreme Court of Canada on Indian Reserves, reserve creation, and First Nations fisheries, nor to provide in-depth interpretations of such. The fact that Dr. Harris only referred to *R. v. Nikal* and *R. v. Lewis* in a footnote on page 34 of his Report, or that he testified that he disagreed with the Court’s interpretation of Crown policy and the idea of the Crown being a unified entity, is not, in the submission of the FNC, reason to give little or no weight to Exhibit 1135 or Dr. Harris’ testimony on the legal and historical events that have influenced First Nations participation in fisheries.

**H. Challenges to Inter-Governmental Cooperation**

44. In response to Canada’s submission that DFO and Environment Canada (“EC”) are presently working together to clarify the respective roles of each department, with the objective of ensuring better coordination and communication between the departments,<sup>29</sup> the FNC submits that the evidence in the Inquiry was clear that there is very limited meaningful collaboration between the two agencies regarding scientific research, water quality monitoring, contaminant research and administration of s. 36 of the *Fisheries Act*.
45. For example, Dr. Talbot testified that with respect to contaminants, DFO and EC do not communicate on the research work that each is doing other than on an *ad hoc* basis.

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<sup>27</sup> PPR 1, beginning at PDF page 131

<sup>28</sup> Transcript, June 27, 2011, p. 3



Dr. MacDonald agreed.<sup>30</sup> Ms. Lisa Walls testified that a good coordination mechanism was lost with the dismantling of the Water Quality Unit in DFO.<sup>31</sup> Dr. Talbot also testified that EC does not have a formal process with DFO to work together, despite DFO's 1986 Habitat Policy citing the need for collaboration and cooperation on a number of habitat issues, including: cooperating in the establishment of federal priorities for the protection of fish and their habitats; cooperating in the use of powers to control the release of deleterious substances into fish habitats; and collaboration between DFO, EC and others to provide advice and specific requirements to control adverse effects.<sup>32</sup>

46. Dr. Paradis testified that although Directors General at both DFO and EC agreed that a more formal exchange would be beneficial to ensure the management of workload and development of new documents when providing science advice between the two departments, no formal exchange was ever developed.<sup>33</sup> Dr. Carey also testified that an integrated science planning framework had been developed to assist federal agencies including EC, DFO, and the Canadian Food Inspection Agency to collaborate on science issues, but that the framework was never implemented by Canada.<sup>34</sup> Both Dr. Carey and Dr. Paradis agreed that such a framework would assist DFO and EC in working together on science issues.<sup>35</sup>

47. Finally, a lack of formal cooperation between DFO and EC was highlighted by the Auditor General on page 44 of the 2009 CESD Report, which stated:

...there are no formal arrangements by which Fisheries and Oceans Canada and Environment Canada establish the expectations for administration of the pollution prevention provisions of the Fisheries Act. Environment Canada's administration of the provisions have been left to its discretion.<sup>36</sup>

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<sup>29</sup> Canada Final Submissions, para. 129

<sup>30</sup> Transcript, June 6, 2011, pp. 18-19 (Dr. Andre Talbot; Dr. Robie MacDonald)

<sup>31</sup> Transcript, June 7, 2011, p. 2 (Lisa Walls)

<sup>32</sup> Exhibit 260 (DFO - Policy for the Mgmt of Fish Habitat, October, 1986); PPR 14 (Policy and Practice Report: Overview of Freshwater Urbanization Impacts and Management, May 11, 2011), para. 128; Transcript, June 6, 2011, p. 70 (Dr. Andre Talbot)

<sup>33</sup> Transcript, June 7, 2011, pp. 16-17 (Dr. Sylvain Paradis); EXHIBIT 994 (Email thread from S. Paradis to S. Patrice et al re PBDE Letter to EC from DFO)

<sup>34</sup> Transcript, June 7, 2011, pp. 19-21 (Dr. Carey)

<sup>35</sup> Transcript, June 7, 2011, p. 21 (Dr. Sylvain Paradis and Dr. Carey)

<sup>36</sup> Exhibit 35 (2009 Report Of The Commissioner Of Environment And Sustainable Development: Chapter 1: Protecting Fish Habitat )

48. Ms. Walls testified that the 1985 MOU between DFO and EC regarding the administration of s. 36 of the *Fisheries Act* was “not operationalized in terms of any formal arrangement or management structure or leadership for how the Department would fulfil its responsibilities for the s. 36(3) of the *Fisheries Act*, in particular, on the compliance promotion side of things.”<sup>37</sup> Although there was evidence, and Canada submitted, that DFO and EC are working towards the development of a new MOU to address this issue, the Deputy Minister was not able to provide an estimate of when a new MOU would be signed,<sup>38</sup> whether responsibility for s. 36 of the *Fisheries Act* would be fully given to EC, or how the MOU is to be effectively operationalized<sup>39</sup> – all of which are of concern to the FNC given that the MOU could potentially impact the regulation of aquaculture waste, aquatic invasive species and Emerging Chemicals of Concern (“EECs”).<sup>40</sup>
49. In their submissions, both Canada and the Province identified the collaboration that has developed between them in aid of FRSS and their habitat.<sup>41</sup> In particular, the Province identified a number of “good news stories” about how cooperation between DFO, the Province, and at times First Nations, has led to increased habitat protection for FRSS.<sup>42</sup> Although the FNC agrees that there has been some progress on cooperation between Canada, the Province, and First Nations,<sup>43</sup> it is the FNC’s position that the Province overstates the degree of collaboration taking place and the role that it has in ensuring freshwater habitat protection.
50. A number of witnesses testified about the challenges facing DFO and the Province in collaborating on habitat protection in the freshwater environment. For example, Michael Crowe testified that DFO needs to engage with the Province to change some of its *Water Act Regulation* management practices relating to foreshore development,

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<sup>37</sup> Transcript, June 7, 2011, pp. 74-75 (Lisa Walls)

<sup>38</sup> Transcript, September 22, 2011, p. 44 (Claire Dansereau)

<sup>39</sup> Transcript, September 28, 2011, pp. 36-37 (Claire Dansereau)

<sup>40</sup> Exhibit 1960 (Memorandum for the Deputy Minister Administration and Enforcement of the Pollution Prevention Provisions of the *Fisheries Act* (Section 36) (Decision Sought), 23 December 2010)

<sup>41</sup> Canada’s Final Submission, paras. 699-702; The Province’s Final Submissions, paras. 40-41; 72 -74, pages 150-152

<sup>42</sup> The Province’s Final Submissions, paras. 41, 72 -74, pages 150, 151, 152

<sup>43</sup> For example, the St’at’imc Agreement with BC Hydro and the Province of BC; Exhibit 1861 (St’at’imc Settlement Agreement, May 10, 2011)

because the best management practice (“BMP”) currently in place had not succeeded.<sup>44</sup> Mr. Crowe testified that the Province’s decision to deem retaining walls below the high water mark as not falling within its regulatory jurisdiction, thereby requiring DFO to manage these issues through a BMP, created a real problem.<sup>45</sup> He went on to testify:

So we believe, based on a series of Environmental Appeal decisions, that actually the province does have the jurisdiction, and we need to engage with the province at senior levels to get them to revisit their directions and opinion on where their authorities lie in this matter, so that they can manage this type of development activity under the *Water Act*.<sup>46</sup>

51. Mr. Salomi testified that in 2002, the Province decided it would not review all the notifications for work in and around streams, or provide a review role at the Environmental Review Committee (“ERC”), often leaving just DFO and the local government to meet,<sup>47</sup> and creating a vacuum.<sup>48</sup> This was despite a recognition that cooperative work between the Province, DFO and local and regional governments through the ERC was “essential to delivering fish habitat protection in the Lower Fraser”<sup>49</sup> and for mapping and codifying water courses for annual maintenance works.<sup>50</sup> Mr. Salomi and Mr. Crowe both testified that they agreed with the views of Jason Hwang’s as expressed in Exhibit 662,<sup>51</sup> which includes the statement:

[The] relationship between the Province and DFO is in a state of dysfunction. We don’t coordinate on referrals in any consistent way, and there is no guidance or leadership from Vancouver-Victoria on this.<sup>52</sup>

52. The FNC submits that the Province’s lack of collaboration with First Nations on the *Riparian Area Regulations* (“RAR”) is another example of a “not so good news story.” Ms. Wilkerson testified that First Nations have never been invited to monthly meetings between DFO, the Union of B.C. Municipalities and the Province to coordinate and talk

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<sup>44</sup> Transcript, June 8, 2011, p. 7 (Michael Crowe)

<sup>45</sup> Transcript, June 8, 2011, p. 8 (Michael Crowe)

<sup>46</sup> Transcript, June 8, 2011, p. 8 (Michael Crowe)

<sup>47</sup> Transcript, June 8, 2011, p. 21 (Corino Salomi)

<sup>48</sup> Transcript, June 7, 2011, p. 99 (Corino Salomi)

<sup>49</sup> Transcript, June 7, 2011, p. 98 (Corino Salomi)

<sup>50</sup> Transcript, June 7, 2011, p. 99 (Corino Salomi)

<sup>51</sup> Transcript, June 8, 2011, p. 21 (Corino Salomi; Michael Crowe)

<sup>52</sup> Exhibit 662 (Jason Hwang, OHEB Key Issues, Draft Memo, July 26, 2007)

about RAR.<sup>53</sup> She also testified that the Province has not provided First Nations with a copy of the 2009 draft audit report regarding non-compliance with RAR,<sup>54</sup> or the names of developers, local governments or Qualified Environmental Professionals (“QEPs”) who have not been compliant with respect to developments on First Nations traditional territories.<sup>55</sup> The same challenges arise in the management of gravel removal for public safety purposes. It is unclear whether DFO or the Province will lead the multi-year approach necessitated for better management and how first nations will be included. On the ground government representatives encourage clearer understandings through tri-partite arrangements.<sup>56</sup>

### **I. Recreational Fishery**

53. At para. 216 of its submissions, Canada highlights the objectives and principles of DFO’s Selective Fishing Policy. DFO considers the policy a requisite element of conservation-based fisheries, where fishing opportunities and resource allocations will be shaped by the ability of all harvesters, First Nations, commercial and recreational anglers, to fish selectively. In answer to Canada’s submissions, the FNC submits that despite the objective and key principles of the Selective Fishing Policy, and its application to recreational anglers, the evidence in the Inquiry reflects that in both 2007 and 2009 DFO had little or no cooperation from the recreational community to utilize selective fishing methods, even after they had been advised of a conservation concern regarding FRSS and that First Nations’ FSC needs were not being met.<sup>57</sup> Instead DFO had to close a portion of the river to recreational salmon fishing in both 2007 and 2009 to deal with the non-compliance.<sup>58</sup>
54. The recreational fishery’s failure to use selective fishing methods when there is a conservation concern regarding FRSS has the potential to impact the long term

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<sup>53</sup> Transcript, June 8, 2011, p. 90 (Stacey Wilkerson)

<sup>54</sup> Exhibit 1009 (Compliance with the Riparian Areas Regulation (RAR) Report on Monitoring Activities for Assessments, Submitted in 2007); Transcript, June 8, 2011, p. 91 (Stacey Wilkerson)

<sup>55</sup> Transcript, June 8, 2011, p. 91 (Stacey Wilkerson)

<sup>56</sup> Transcript, June 16, 2011

<sup>57</sup> Transcript, March 3, 2011, p. 48 (Deborah Sneddon); Exhibit 544 (Briefing Note for Deputy Minister: FR Recreational Fisheries for Sockeye 2007), pp. 1-2; Transcript, March 3, 2011, p. 49 (Deborah Sneddon); Transcript, March 3, 2011, pp. 49-50 (Deborah Sneddon)

<sup>58</sup> Transcript, March 3, 2011, p. 53 (Deborah Sneddon); Transcript, March 3, 2011, pp. 51-52 (Joe Tadey; Deborah Sneddon); Exhibit 538A (Early August Fraser Recreational Angling Method Breakdown, Aug 17 2009)

sustainability of FRSS. The failure by the recreational fishery to implement selective fishing methods, even when First Nations and DFO have advised that First Nations will not be able to meet their FSC needs, also adds to the distrust and conflict between First Nations fishers and recreational anglers.<sup>59</sup> The FNC submit that fisheries should be closed if the recreational fishers cannot conduct a fishery in a manner that respects conservation and FSC priority.

55. It is difficult to implement the Selective Fishing Policy when DFO provides limited regulation of the recreational fishery, or more often than not, relies upon self-regulation.<sup>60</sup> The FNC submits that DFO has the power to, and should, introduce more stringent regulation of gear type, including regulating the use of the bottom bouncing technique for salmon on the Fraser River.
56. At para. 641 of its submissions, Canada acknowledges that different fisheries require different levels of monitoring in different years depending on factors affecting conservation risks. Canada submits that a lack of understanding regarding why different fisheries are monitored differently, coupled with concerns about allocations between sectors, can create acrimony between sectors in the fishery. The FNC agrees. Canada suggests that there is increasing understanding amongst fishers regarding how various fisheries are monitored – and increasing understanding that consistent catch monitoring criteria and standards are being applied across fisheries.<sup>61</sup> The FNC agrees.
57. However, the evidence in the Inquiry is that there is limited catch monitoring of the recreational fishery, despite increased numbers of recreational anglers in B.C., and limited enforcement of the recreational fishery, despite a lack of compliance within

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<sup>59</sup> Transcript, March 3, 2011, pp. 77-78 (Devona Adams)

<sup>60</sup> The Inquiry heard that with respect to the education, regulation and enforcement pertaining to the recreational fishery in BC: a) Individual anglers are responsible for familiarizing themselves with the angling guide or the B.C. Sport Fishing Regulations and to ensure that they are in compliance with everything that they need to be, and of keeping themselves informed on openings and closures (Transcript, March 3, 2011, p. 43 (Deborah Sneddon)); b) DFO does not take action by getting enforcement involved when recreational anglers were not cooperating with DFO's request that they engage in selective fishing methods (Transcript, March 3, 2011, p. 53 (Deborah Sneddon)); Recreational anglers are not required to attend an education program as part of receiving an angling licence and DFO does not run angler education programs (Transcript, March 3, 2011, p. 41 (Devona Adams)); DFO do not have the ability to regulate the bottom bouncing technique, despite identifying the issue of using that technique in the lower Fraser River (Transcript, March 2, 2011, pp. 47-48 (Deborah Sneddon)); DFO has currently has limited regulations on gear type for recreational fishery (Transcript, March 2, 2011, p. 49 (Devona Adams))

certain recreational fisheries.<sup>62</sup> With respect to catch monitoring, there is evidence that the creel survey in the recreational fishery is used for stock assessment rather than catch monitoring for enforcement purposes.<sup>63</sup> Mr. Tadey testified that DFO prefers to collect information from the recreational community that's unbiased, and one of the things that may taint or bias the information that's provided would be if anglers perceive that DFO is enforcing its fishery regulations.<sup>64</sup> Mr. Masson identified the need to support additional recreational and enhanced recreational monitoring, particularly in the B.C. interior.<sup>65</sup>

58. Therefore, in reply, the FNC submits that the recreational fishery should be subject to a catch monitoring program and that more resources should be devoted to enforcing the recreational fishery, due to rates of non-compliance in that fishery and to ensure a balanced approach to both monitoring and enforcement amongst all sectors. It is the FNC's submission that taking a balanced approach to monitoring and enforcement amongst the various sectors will help alleviate some of the concerns that First Nations<sup>66</sup> have with respect to biases within DFO's monitoring and enforcement priorities, including the differences between the reporting requirements within First Nations fisheries in the lower Fraser River and the lack of any significant monitoring and enforcement of recreational fishers in the same area.

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<sup>61</sup> Canada's Final Submissions, para. 641

<sup>62</sup> From 2009-2010, when the compliance rate for the recreational salmon non-tidal fishery was 91 percent and the compliance rate for the recreational salmon tidal fishery was only 77 percent (Exhibit 882 (Pacific Region, Conservation and Preservation - 2009 Program Results (Salmon) presented to IHPC January 19, 2010 [PowerPoint DFO]), p. 17; Transcript, May 5, 2011, pp. 57-58 (Randy Nelson)); The 2009/2010 Fraser Coastal Highlights also indicated that there were 176 violations during closed time patrols, with the majority of the violations taking place in the recreational fishery (Exhibit 880 ( Fraser Coastal 2009-2010 Highlights, DFO C&P), slide 18; Transcript, May 5, 2011, pp. 59 (Randy Nelson)) Despite a non compliance rate of 23 percent in the salmon tidal recreational fishery, Mr. Nelson did not know if any changes had been made to enforcement of the recreational fishery (Transcript, May 5, 2011, pp. 57-58 (Randy Nelson))

<sup>63</sup> Transcript, March 2, 2011, p. 58 (Joe Tadey)

<sup>64</sup> Transcript, March 2, 2011, p. 58 (Joe Tadey). Mr. Tadey identified the survey as completely voluntary, and if a recreational angler refuses to answer questions or show their catch, the surveyors have no recourse (Transcript, March 2, 2011, pp. 58-59 (Joe Tadey)). With respect to reporting release numbers in a catch and release fishery, Mr. Tadey identified that there was nothing to get from the angler on the number of fish that are released (Transcript, March 2, 2011, p. 63 (Joe Tadey)).

<sup>65</sup> Transcript, May 12, 2011, p. 42 (Colin Masson)

<sup>66</sup> Transcript, May 12, 2011, p. 18 (Colin Masson)

**J. Catch Monitoring and Enforcement of Aboriginal Fisheries**

59. The FNC takes issue with the submissions of Area E concerning so-called “Aboriginal poaching.” Area E’s submissions, in particular those at paras. 58 to 73, are based on speculation and supposition that so-called “Aboriginal poaching” is a serious, widespread, and long-term problem.<sup>67</sup> Area E refers to incidents of “Aboriginal poaching” by citing certain facts from a few selected court decisions.<sup>68</sup> The FNC submits that the only facts upon which participants may rely in their final submissions are those properly adduced in the Inquiry; quasi-criminal court cases cannot be used to establish facts.
60. Area E’s submissions are inconsistent with the evidence in the Inquiry. Despite its repeated efforts, Area E was not able to adduce any evidence in support of its propositions. Numerous witnesses in the Inquiry have testified that if a fish is legally caught within an allocation, the sale of that fish does not raise a conservation concern.<sup>69</sup> In addition and importantly, not one of the scientists who testified in this Inquiry regarding the causes of decline suggested that the decline could be attributed to “Aboriginal poaching.”
61. Area E mischaracterizes and splices the testimony of Ernie Crey and Grand Chief Saul Terry, taking it in a direction that the witnesses did not go, to suggest that there is widespread support for poaching in many Aboriginal communities and from Aboriginal leadership.<sup>70</sup> Such characterizations are simply incorrect and Area E’s submissions on this point should be rejected.
62. The FNC strongly disagrees with Area E’s suggestion that previous commissions and investigations’ “failures” to address so-called Aboriginal poaching caused or contributed to the decline of FRSS, fishery closures, or the establishment of this Inquiry. Simply put, there is not a shred of evidence in the Inquiry that Aboriginal fishing, or so-called

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<sup>67</sup> Final Submissions of BC Fisheries Survival Coalition and Southern Area E Gillnetters Association, para. 52

<sup>68</sup> See Final Submissions of BC Fisheries Survival Coalition and Southern Area E Gillnetters Association, paras. 21, 22, 24, 26, 27, 29

<sup>69</sup> Transcript, September 28, 2011, p. 67 (David Bevan); Transcript, June 30, 2011, p. 70 (Barry Huber); Transcript, May 18, 2011, p. 68 (Scott Coultish)

<sup>70</sup> Final Submissions of BC Fisheries Survival Coalition and Southern Area E Gillnetters Association, para. 78; see Transcript, July 5, 2011, p. 37 (Ernie Crey) and Transcript, June 30, 2011, p. 43 (Grand Chief Saul Terry)

“Aboriginal poaching,” has any connection with the poor returns of FRSS in 2009, or the longer term decline of FRSS. In order to conclusively and unequivocally address these unfounded and unsubstantiated allegations of so-called “Aboriginal poaching,” the FNC submits that the Commissioner should confirm that Aboriginal fishing, or so-called “Aboriginal poaching,” is not causative or correlative with the poor returns of FRSS in 2009, or the long term decline of FRSS.

63. In reply to paras. 60 to 61 of the BCWF’s submissions, the FNC submits that the BCWF’s argument that increased in-river fishing by First Nations led to dramatic increase in differences between estimates (“DBEs”) disregards the evidence presented in the Inquiry regarding en route loss (“ERL”) or pre-spawn mortality (“PSM”). This submission ignores the evidence provided by Drs. Hinch, Martins, and Miller-Saunders as to climate change (including increasing river temperatures), ERL, and the decline in fish health resulting from cumulative impacts experienced in earlier life history stages. No scientist has suggested the cause of declines or ERL or PSM is fish caught in the lower Fraser River. The submissions of the Sto:lo Tribal Council and Cheam Indian Band at paras. 30-43 are a complete answer to BCWF’s arguments on this point and we adopt them.

**K. MSY**

64. In reply to paras. 28 to 33 of Area G’s submissions, the FNC says that it is impossible to exclude human activities from the activities that potentially impact FRSS, including weak or small stocks. The suggestion that the natural state of small stocks is somehow determined by an environment devoid of human activity or impact is not supported by the evidence.
65. In reply to paras. 21 to 25 of Area G’s submissions, the FNC say that there is no law, policy or evidence in support of the proposition that the *Fisheries Act* or the *Pacific Salmon Treaty* (“PST”) is founded upon the notion of MSY.
66. Area G, at para. 25 of its submissions, asserts that the PST reflects the goal of achieving maximum sustainable yield (“MSY”). In reply, the FNC notes that Article III(1)(a) of the PST refers to “prevent[ing] overfishing and provid[ing] for optimum production.”<sup>71</sup>

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<sup>71</sup> Exhibit 65 (PST)



Optimum production is not the same as MSY. Optimum production includes many other goals, including, for example, ensuring distribution and quality of the fisheries, that are not included in the notion of MSY. Article I(5) of the PST, defines “overfishing” in relation to MSY. The PST has as its primary goals the prevention of the historical problems in both the Canadian and American commercial fisheries of overfishing, and providing for optimum production. The PST does not require DFO’s management to be founded upon MSY.

67. In reply to Area G’s submissions regarding MSY and harvest “removals” at paras. 24 of its final submission, the FNC submits that Area G has presented the definition of “removal reference” found within Exhibit 1940, a CSAS Science Advisory Report entitled “A Harvest Strategy Compliant with the Precautionary Approach,” devoid of context. Area G makes no reference to the other reference points set out in Exhibit 1940 and fails to accurately describe the harvest strategy and conclusions within that Report.
68. Exhibit 1940 begins by describing the upper stock reference point and the limit reference point as follows:

The *Upper stock reference point* is the stock level threshold below which the removal rate is reduced. As such it applies to exploited populations. This reference point is determined by productivity objectives for the fishery. These objectives will vary among species and fisheries and include biological, social and economic factors. The stock status zone above the Upper stock reference is called the *Healthy zone*.

The *Limit reference point* is the stock level below which productivity is sufficiently impaired to cause serious harm but above the level where the risk of extinction becomes a concern. In this context, serious harm could be due to over-fishing, other human induced mortality, or changes in population dynamics not related to fishing. The stock status zone above the Limit reference point but below the Upper stock reference is called the *Cautious zone*. The zone below the Limit reference point is called the *Critical zone*.<sup>72</sup>

69. In the “Harvest Strategy” section of Exhibit 1940, it states that harvest strategies are typically implemented by regulating the removal rate either by controlling total catch or by controlling fishing effort and that “stock references and removal references are

defined for “normal” conditions and may be adjusted to reflect changes in stock dynamics.”<sup>73</sup> Fisheries management plans include harvest strategies that incorporate a limit reference point, an upper stock reference and a removal reference, so that if the stock is considered to be in the “healthy zone” the harvest would not exceed the removal reference; if the stock is in the “cautious zone” fisheries management actions must promote rebuilding and removal/harvest rates should not exceed the removal reference; and, if the stock is the “critical zone,” fishery management actions must promote stock growth, and removals by all human sources must be kept to the lowest.<sup>74</sup> These zones and the placement of CUs within them is not based on a MSY analysis, or reliant on determinations of yield or harvest; this analysis is conservation based.

70. Despite much effort, Area G was not able to adduce reliable scientific evidence to support the notion that the theory of MSY should be relied upon for the conservation or management of FRSS. In fact the preponderance of evidence is to the contrary. At best, MSY is a modelling tool that takes a particular view of the world. If the FRSS fishery was managed on MSY it would simply continue to authorize harvesting the yield from the strong stocks while putting at risk the weak; this is not advocated by ecologists or managers.<sup>75</sup>
71. From a conservation perspective there are serious concerns with the theory and use of MSY. Ken Wilson said this about the difficulties associated with the use of MSY for FRSS:

But for the most part, our concern is around productivity and how productivity changes over time. These models actually assume that productivity is, in some way, stable because you have to make some assumptions about the relationship between past data and the likely out come of things in the future, if you're going to evaluate alternative policy. The concern, of course, is that when we look at Fraser Sockeye or any other biological system, for that matter, stationarity is hard to find. The world isn't a stable place and in many areas it's quite chaotic. And although you can fit a model to historical data, that doesn't necessarily mean you're

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<sup>72</sup> Exhibit 1940 (CSAS Report: A Harvest Strategy Compliant with the Precautionary Approach, 2006), p. 4

<sup>73</sup> Exhibit 1940 (CSAS Report: A Harvest Strategy Compliant with the Precautionary Approach, 2006), p. 4

<sup>74</sup> Exhibit 1940 (CSAS Report: A Harvest Strategy Compliant with the Precautionary Approach, 2006), pp. 4-5

<sup>75</sup> Transcript, February 9, 2011, p. 35 (Ken Wilson)

going to be reliably predicting the future. And that's a fundamental issue that we haven't, I don't think, adequately addressed, common [sic] filters or not. Trying to track changing productivity, particularly if there's a time trend through the course of your data where productivity is in relatively constant decline for some time period, you're left with the problem of what's going to happen if the trend continues? Will the trend break? At what level will productivity recover to and how long will it stay there? And those are all questions that you have to have answers for, if you're going to run the model 48 years into the future. And I don't believe we have answers for those things and it causes me to fundamentally question whether maximum sustainable yield is anything more than a theory.<sup>76</sup>

72. Mr. Wilson testified about the management challenges associated with the use of a MSY model for FRSS as follows:

We're not simply trying to maximize harvest, in my view, when we manage salmon. We're trying to conserve the resource, we're trying to keep small stocks in reasonable levels of abundance, we're trying to address the harvest needs of First Nations, which are unique, and there a whole range of social and even spiritual values that have to be addressed in the management of salmon. These MSY models take a very particular view of the world.

...

So when you're harvesting a large stock that shows this effect, you might want to harvest it fairly hard. Unfortunately, it's commingled in the fisheries with large numbers of stocks that may not show those effects, and it may not benefit from being harvested, if you want to put in that respect. So it is a compromise. It's not that conservation comes first and we deal with conservation and then harvest comes second. We're compromising constantly in harvesting the yield from the strong stocks, trying to protect the weak stocks and trying to grapple with values that are clearly external to our models but important to people.<sup>77</sup>

73. On the companion argument regarding over-escapement, Mike Staley said this:

That's one of the points in the -- on the spectrum of abundance for any particular stock, is the point at which maximum sustainable yield, if the world was equal -- if equilibrium existed and the world behaved in some hypothetical way, and someone -- at that point your sort of sustainable harvest rate, if my recollection is correct,

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<sup>76</sup> Transcript, February 7, 2011, p. 61 (Ken Wilson)

<sup>77</sup> Transcript, February 9, 2011, p. 35 (Ken Wilson)

is in the 60 to 70 percent range. Look at the stock recruitment curves that you get from most healthy stocks, the 60 to 70 percent range is where you would find, theoretically, the MSY level.<sup>78</sup>

74. In reply to Area G's, B's and D's submissions, the FNC also submit that MSY can not be relied upon for the management of FRSS. Mr. Marmorek, who testified that the MSY concept could in theory apply where there is reasonable data and consistency in the stock recruit relationship, but noted that, recognizing stock recruit relationships vary over time, suggested that fisheries management would need to adjust accordingly:

Q: Would you agree that setting management targets for Fraser River sockeye salmon on the principle of maximum sustainable yield historically assumed or depended on a constant and predictable ecosystem?

A: Yes, there is a paper by Peter Larkin called, "An Epitaph for the Concept of Maximum Sustainable Yield," so I think there has been an increasing recognition that stock recruitment relations vary over different periods and that fisheries management needs to adapt accordingly.

Q: Would you also agree that the MSY calculations, they're only potentially relevant for predictably strong stocks in a predictable ecosystem?

A: I think **theoretically maximum sustainable yield could apply to any stock** provided that you have reasonable data on that stock recruitment relationship, not only strong stock. I mean, there is the challenge of mixed-stock fisheries and how you can allow harvest on a very strong stock while at the same time maintaining the weaker stocks. That's an implementation challenge for sure.<sup>79</sup>

75. Finally as Dr. Woodie explained, the use of MSY on strong stocks was part of the modelling that resulted in the commercial fishery too intensely harvesting during the 1980s and 1990s (i.e., overfishing), and ultimately led to the need for the PST to curb such fishing.<sup>80</sup>
76. In our submission the reliance on MSY as a suggested model for harvest management has been rejected scientifically and was eclipsed by the WSP when the importance of maintaining healthy diverse CUs of wild salmon was adopted as the strategy to respond

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<sup>78</sup> Transcript, February 7, 2011, pp. 93-94 (Mike Staley)

<sup>79</sup> Transcript, September 20, 2011, p. 73 (David Marmorek)

<sup>80</sup> Transcript, February 9, 2011 p. 36 ll 2-40 (Dr. Woodie)

to the increasing challenges facing wild salmon. Changing ecological conditions, the accepted need for biodiversity and the benefits of preservation of weak stocks was in part driven by the serious conservation concerns resulting from the use of MSY on strong stocks of FRSS.

**L. Delayed Density Dependence, Cyclic Dominance, and “Over-escapement”**

77. In full response to paras. 41 to 106 of Area G’s submission, pages 42-48 of Area B & D’s submission, and paras. 70 to 95 of BCWF’s submission, the FNC says that to the extent that delayed density dependence (“DDD”) and/or “over-escapement” could be a concern for the management of FRSS, which is not accepted, those concerns are only hinted at for the Quesnel run, and for that run, can be adequately addressed in the manner recommended by the 2010 PSC Report, Exhibit 73. We strongly disagree that the evidence of Dr. Walters was uncontroverted.
78. In the FNC’s submission, despite all the time and effort by Area G during this Inquiry to prove that a primary cause for the long term declines is over-escapement or DDD, such evidence is not available and in fact the weight of the evidence does not support this conclusion.
79. It is useful to acknowledge that the scientific hypothesis or theory of DDD does not equate to a finding that over-escapement is harmful for FRSS nor does it equate to cyclic dominance being harmful for FRSS. This was explained carefully during the panel on “over escapement.”<sup>81</sup>
80. By his own admission, Dr. Walters’ concerns regarding over-escapement arise not from the point of view of the biology or ecology of FRSS but from the point of view of commercial access to available harvests.<sup>82</sup>
81. Exhibit 73 canvasses DDD as one of the nine possible explanations for the poor returns of FRSS in 2009. The theory of DDD, which was first espoused by Dr. Carl Walters, is described in this way:

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<sup>81</sup> Transcript, February 9, 2011 (Dr. Woodie et al)

<sup>82</sup> Transcript, February 9, 2011, p. 57, ll 23-37

The hypothesis states that, for total life-cycle productivity (adult recruits per spawner) of a given brood year of sockeye salmon, there is some effect (usually negative) of the number of sockeye salmon spawners in previous years (i.e., with a 1-, 2-, or 3-year lag). This hypothesis is based on the assumption that a large number of spawners in one year will produce large numbers of eggs and fry that may subsequently reduce food supply for juvenile salmon in the rearing lake, increase incidence of diseases on salmon, and/or lead to an increase in predators and/or predation rate on juvenile salmon in the rearing lake or elsewhere in the life cycle. All three of these density-dependent processes may potentially reduce survival rates of cohorts of juvenile salmon in the next or other years subsequent to a large spawner abundance. Hence, this hypothesis is termed delayed density-dependent productivity.<sup>83</sup>

82. The Panel that was convened for the PSC workshop expressed opinions about the effect of DDD on the long-term decline in FRSS productivity that ranged from **likely** to **possible** to **unlikely** as a contributing factor. Panel members agreed, however, that DDD was **very unlikely** to have played a role in the 2009 decline.”<sup>84</sup>
83. The Panel made the following recommendations for research:
- a. The FRSSI group should attempt to replicate Carl Walters’ results for fitting the Larkin and Ricker models;
  - b. Better (more accurate and precise measurement of abundance at different life stages (fry, smolt, marine migrant) are needed;
  - c. We need to better understand food supply dynamics;
  - d. Other research needs to be conducted into mechanisms such as predators, disease and food supply so as to try to detect the density effect; and
  - e. Contrasting management strategies should be applied to different stocks over enough time to observe a response.<sup>85</sup>
84. Specifically in response to these recommendations, Dr. Riddell testified as follows:

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<sup>83</sup> Exhibit 73 (Synthesis of Evidence from a Workshop on the Decline of Fraser River Sockeye), p. 84

<sup>84</sup> Exhibit 73 (Synthesis of Evidence from a Workshop on the Decline of Fraser River Sockeye), p. 86

<sup>85</sup> Exhibit 73 (Synthesis of Evidence from a Workshop on the Decline of Fraser River Sockeye), pp. 86-87

Well, the first four [recommendations in Exhibit 73] really are recommendations that we've talked about in the past. I mean, they're all about better information in the lakes and looking at what the causes are. The final one, as you're pointing out, involves management strategy changes, or an adaptive management study, as Carl [Walters] referred to, and that would take more planning because that could cause, you know, impacts on fisheries as we've talked about already, as well.<sup>86</sup>

85. Subsequent to the PSC workshop, and as part of Technical Report #10, Dr. Peterman, Canada Research Chair in Fisheries Risk Assessment and Management at the School of Resource and Environmental Management at SFU, considered DDD.<sup>87</sup> He has authored numerous peer reviewed papers on trends in FRSS productivity and density dependence and has mentored numerous students of fisheries science and management.<sup>88</sup> Dr. Peterman was qualified as fisheries biologist with expertise in fish population dynamics and ecology and risk assessment during the course of this Inquiry,<sup>89</sup> and the FNC submits that his expert opinions on FRSS population dynamics, including production and declines, deserve considerable weight.
86. In Technical Report #10<sup>90</sup> Drs. Peterman and Dorner evaluated the hypothesis that large numbers of spawners could be detrimental to the productivity of FRSS populations (i.e., the over-escapement theory). With regard to this theory, Drs. Peterman and Dorner wrote as follows:

The downward time trend in productivity of these stocks, combined with successful management actions to rebuild spawner abundances, has led to speculation that these unusually large spawner abundances might in fact be to blame for declines in productivity and consequently also substantial declines in returns. For the Quesnel sockeye stock on the Fraser, there is indeed evidence that interactions between successive brood lines that are associated with large spawner abundances may have reduced productivity of subsequent cohorts. Thus, the recent decline in productivity for Quesnel sockeye might be more attributable to increased spawner abundance than to broad-scale environmental factors that affect other sockeye stocks in the Fraser and other regions. However, other Fraser sockeye populations do not show such evidence. Our data do not support the hypothesis that large

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<sup>86</sup> Transcript, February 10, 2011, p. 77 (Dr. Brian Riddell)

<sup>87</sup> Exhibit 749 (CV of Dr. Randall Peterman)

<sup>88</sup> Transcript, April 20, 2011, pp. 3-4 (Dr. Randall Peterman)

<sup>89</sup> Transcript, April 20, 2011, p. 4 (Dr. Randall Peterman)

<sup>90</sup> Exhibit 748 (Technical Report #10, Fraser River Sockeye Production Dynamics)

spawner abundances are responsible for widespread declines.<sup>91</sup>  
[emphasis in original]

87. In Dr. Welch's review of Technical Report #10 he notes that this "superb piece of work" in which the authors had done a "tremendous job of extending their previous studies to develop a comprehensive analysis within which the mandate of the Cohen Commission can be put in context."<sup>92</sup> He went on to rate the report as "exceptional in all parts."<sup>93</sup> Dr. Welch's perspective on the merits of the over-escapement theory are as follows:

The authors conclude that there is little to no evidence in support of the theory that Fraser River sockeye escapements have been excessive (a point of view that Prof Walters has been a particular champion of) and have reduced the productivity of the stocks. I am satisfied from Peterman and Dorner's results that this is not the case -- and this should allow the Commissioner to strike one possibility off the rather dauntingly long list of possible causes for the Fraser River sockeye decline.

88. Cyclic dominance is naturally occurring in some FRSS and for some FRSS stocks cyclic dominance is transient. There is some evidence that for example for the Bowron stocks, cyclic patterns can stop, revise and renew at a later time.<sup>94</sup>
89. Cyclic dominance is a biologically-based cycle or phenomenon that ecologists acknowledge is likely good for the long term sustainability of FRSS. Both Drs. Woodie and Riddell agreed that it may be a good thing for FRSS.<sup>95</sup> Mr. Wilson supported this notion and testified:

...I view cyclic patterns and returns in Fraser sockeye for many stocks to be an entirely natural circumstance, and I'm sure we all agree with that. So from a biological perspective, it doesn't concern me that the dominant cycle might shift from one year to another. And I don't see that we should necessarily be managing to maintain a particular dominance pattern. I think we should let the Fraser sockeye do what Fraser sockeye do and adapt to those changes.<sup>96</sup>

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<sup>91</sup> Exhibit 748 (Technical Report #10), pp. 3-4

<sup>92</sup> Exhibit 748 (Technical Report #10), p. 79

<sup>93</sup> Exhibit 748 (Technical Report #10), p. 79

<sup>94</sup> Exhibit 748 (Technical Report #10: Fraser River Sockeye Production Dynamics, February 2011), p. 13

<sup>95</sup> Transcript, February 10, 2011, pp. 80-81 (Dr. Brian Riddell)

<sup>96</sup> Transcript, February 10, 2011, pp. 80-81 (Dr. Brian Riddell) pp. 84-85 (Ken Wilson)



90. It is the FNC's submission that patterns of cyclic dominance in FRSS are naturally occurring mechanisms that allow this complex wild species to cope, thrive and evolve in changing ecosystems, including responding to new predation or other threats. From a traditional or indigenous world view, salmon are simply doing what they need to do.
91. Similarly, concerns raised by Dr. Walters regarding increased synchronicity amongst FRSS stocks (coming together of dominant runs and the coming together of run timing groups) appear to arise most from his concerns for the marine commercial fishery. Scientists cannot presume to know why this increased synchronicity is happening. Scientists acknowledge this phenomena is biological and not resulting from harvest practices. From an indigenous world view if salmon are biologically changing their patterns it will be in response to something changing in their environment and is likely in aid of survival or evolution. For example, if there is a change in oceanographic conditions or related processes, as suggested by Drs. Peterman and Dorner, FRSS may already be trying to maximize the resources available to them, including synchronizing their runs. The point being that we should not and cannot presume that it would be useful to prevent this pattern. Rather, using both indigenous world views and a precautionary approach, these changes in FRSS must be observed with care, and not presumed to need intervention by harvesting.
92. The FNC stresses that caution must be used when scientists promote using harvest to change or intervene in FRSS cycles. Such arrogance, on the part of science, has in the past, by Dr. Walters' own admission, resulted in a failed experiment when "science" suggested to management to try to build up off cycle lines of cyclic stocks.<sup>97</sup>
93. The FNC submits that Area G's, Area B's and Area D's submissions which promote MSY as a model for the determination of "over-escapment", rest on the mistaken assumption that FRSS can withstand the experiments of humans, can be sustainably overfished, that weak stocks will indefinitely survive the hit of mixed stock fisheries, and that scientists can somehow predict that the strong runs will remain strong indefinitely. 2009 is a clear illustration that this is not true.
94. In our submission the weight of evidence in the Inquiry leads to the conclusion that MSY cannot be used to manage FRSS, and only one recommendation regarding DDD is

required, namely that fisheries managers, through FRSSI or otherwise, need to monitor escapements on the Quesnel run so that if any legitimate concerns regarding DDD arise, these concerns can be addressed through increased harvesting on that run using terminal or other known stock fisheries.

95. The FNC submits that there are numerous positive benefits of large escapements to individual systems, including increased genetic diversity, recolonization, and the transport of marine nutrients to the watershed. First Nations' wisdom and knowledge is that the term "over-escapement" is really a misperception. Former Chief Alexis testified as follows:

Back in the early days during our weir fisheries, we were managing so sustainably that the fish came back in very high abundance. Our people used to talk about walking across the backs of the salmon to cross the river. And I think you'll hear those stories all along the river – the river systems even today. Hearing those stories made me think about the times we're having now. A lot of people say that, you know, there's overabundance in those systems and that's not truly so. There's over a hundred streams in our – the Carrier Nation territories that – that produce sockeye salmon or produce Chinook and fish like that. And those streams today are not being fully utilized. So there's – the misperception of overabundance is not really there. You know, the animals are smart enough to go to a different spawning stream if there's – there's capacity, there's – the other stream couldn't carry him as a capacity. And these things are observed throughout the millennia that if there's an empty stream there it would be full some day again.<sup>98</sup>

96. Commenting on the notion of "over-escapement" as interpreted by the Secwepmec people, Dr. Ignace testified:

...when the salmon spawn and die in the spawning grounds, what they're doing is fertilizing the river, fertilizing the food that the fry and the salmon will eat as they grow and get ready to go back out in the ocean. And it feeds -- they feed -- it's -- it's a great fertilizer. We all know salmon is a great fertilizer. And without that, you cannot feed the future generations of fish. And we have to ensure that there's nothing wrong with over escapement. That's just an

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<sup>97</sup> Transcript February 10, 2011, pp. 12 (Dr. Walters), ll 7-15

<sup>98</sup> Transcript, December 14, 2010, pp. 42-43 (Chief Thomas Alexis)

excuse to catch more fish for commercial sales and to enhance somebody's bankbook.<sup>99</sup>

97. Mr. Wilson summarize the ecological considerations this way:

Well, clearly there's an impact on productivity at the very high -- if productivity is measured as returns per spawner. It certainly impacts at very high spawner abundance. And I'm not arguing the point that managing escapements is important to maintaining human yield. **What I am suggesting is that if we go back to the time pre-contact, when harvests were low, populations were large and periodically very large escapements, much larger than we've seen recently certainly, may have been commonplace. This isn't a problem for salmon. The salmon have adapted and the systems have adapted to this natural periodic influx of nutrients. I'm saying that from a salmon's perspective, it's not a bad thing necessarily. We don't understand all the consequences of these sorts of large escapements. If you broaden your frame of reference beyond human harvest and the abundance of salmon alone, I'm suggesting that it's an entirely natural thing that these ecosystems have adapted to, and we're now changing the world because we're trying to redirect and have redirected for the last 100 years or so up to 80 percent of that nutrient for human use. I'm not saying that's a bad thing, I'm just saying that it's one thing to say that it affects future yield to humans and another to suggest that there's biological harm or ecological harm that results from periodic large escapements, whatever the consequences of that escapement might be for future production.**<sup>100</sup>

98. Finally, we note also that in his testimony related to Dr. Walters' data, Mr. Marmorek succinctly pointed out the concerns that must be brought to bear we submit not only on the data but also on the submissions that Area G has made which rely primarily on Dr. Walters' theories and data:

So what I did in preparing for this week is the previous lawyer talked a lot about the workshop that we had had, November 29th and 30th, and in that document at that time Dr. Peterman said, well, Carl Walters seems to be coming around to the belief that the Quesnel stock is really the only one for which there's any evidence of delayed density dependence. And so I was rereading that and I thought, well, that's interesting. I wonder if Carl [Walters] still thinks that way... So I sent him an email and he sent me back an email, actually more than one, and my response to that is that

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<sup>99</sup> Transcript, December 14, 2010, pp. 33-34 (Dr. Ron Ignace)

<sup>100</sup> Transcript, February 9, 2011, pp. 26-27 (Ken Wilson)

what we have, if you go back, rewind to the June 2010 PSC workshop where Carl Walters presented his hypothesis that there was delayed density dependence in several stocks and he had a five-page handout. **So that was a five-page handout, not very detailed on methods, and then Drs. Peterman and Dorner went through their very detailed analysis. And in the correspondence I had with Dr. Walters, and also in the handout that he'd done, it's clear that there's several things which differ between what he's doing and what Randall Peterman and Brigitte Dorner did. So first of all, Dr. Walter is using a different method of fitting the curves, at least he did before, and that he had -- not allowing positive coefficients on those Larkin parameters. Secondly, the different of way of weighting the weak years. Thirdly, they may be using somewhat different datasets, because I know that Drs. Peterman and Dorner fixed up some problems with the dataset since the PSC workshop. And fourthly, they're using somewhat different ways of deciding whether delayed density dependence is happening or not.**<sup>101</sup>

99. The FNC submits that the extensive population dynamic work of Drs. Peterman and Dorner, together with the ecologically sound observation that FRSS have survived for thousands of years as an important staple of food for indigenous people supports the conclusion that the theory of over-escapement is not a concern for the long term sustainability of FRSS.

#### **M. Aquaculture**

100. In reply to the Province's submissions that no weight be given to Dr. Dill's evidence on the potential risk of ISA from aquaculture in BC because he is not a fish health professional, the FNC submits that the Province has mischaracterized the evidence as to his expertise in fish health.<sup>102</sup> Dr. Dill's testimony is as follows:

Q (Tara Callan for the Province): And you would defer to a fish health expert's opinion or a veterinarian's opinion on what or what is not a risk to sockeye, as far as disease is concerned?

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<sup>101</sup> Transcript, September 20, 2011, pp. 27-28 (David Marmorek)

<sup>102</sup> Dr. Dill testified that the classic symptoms of ISA were outlined in the diagnostic reports of Dr. Gary Marty (Exhibit 1540 (Technical Report 5D, Impacts of salmon farms on Fraser River sockeye salmon: results of the Dill Investigation), pp. 24-25). The Province rely on Dr. Dill's own testimony that he would defer to an expert on diagnosis of ISA as a basis for not giving weight to his evidence (Final Submissions of British Columbia, page 105, para. 82).

DR. DILL: No, I would not defer because I think there are ecological considerations that have to be taken in that a veterinarian cannot speak to.

Q: And would you agree that you're not an expert on diagnosing disorders such as infectious salmon anemia or infectious salmon anemia virus and would have to defer to another expert?

DR. DILL: I certainly would on diagnosis, yes.<sup>103</sup>

101. It was however clarified that Dr. Dill does have expertise to speak to fish health:

Q (Brenda Gaertner, FNC): Mr. Commissioner, I'm sorry for rising but the qualification the Province has made and the answers given, I wasn't sure I understood it, fish health and ecological factors are related, aren't they, Dr. Dill?

DR. DILL: That's why I said I would not defer to a veterinarian on questions of fish health. I would defer in terms of diagnosis.<sup>104</sup>

102. Dr. Dill was qualified as an expert in ecological factors affecting wild fish, including parasites and fish farms<sup>105</sup> and his evidence regarding fish health and the potential risks of disease transmission from fish farms to wild salmon populations should certainly be given weight. The FNC submits that Dr. Dill was qualified to give evidence that fish farm samples may be suspect for ISA virus in BC, particularly when the purpose of that evidence was not to make a diagnosis of ISA virus but to provide advice regarding both the importance of closely watching for indications of disease and ensuring biosecurity measures are reinforced because of the potential for devastating impacts to BC wild salmon populations.<sup>106</sup>

103. Other scientists, including Dr. Noakes, did not discount the expertise of Dr. Dill. Dr. Noakes testified that he respected the work of Dr. Dill and that his and Dr. Dill's work was based on methodological differences rather than a superiority of expertise:

Q: All right. Dr. Noakes, do you have a comment on this, and that is, whether the literature that is relied on in Dr. Dill's report, represents a balanced approach to literature or whether it's not?

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<sup>103</sup> Transcript, August 25, 2011, p. 72 (Dr. Larry Dill)

<sup>104</sup> Transcript, August 25, 2011, p. 72 (Dr. Larry Dill)

<sup>105</sup> Transcript, August 25, 2011, p. 71

<sup>106</sup> Exhibit 1540 (Technical Report 5D: Impacts of salmon farms on Fraser River sockeye salmon: results of the Dill investigation), p. 3; p. 25

DR. NOAKES: I don't have a comment with that respect. I mean I respect Dr. Dill. We approached the same problem from different aspects and our backgrounds dictated sort of what we looked at. So I'm not in a position to say whether it's balanced or not because obviously he has different expertise and a different insight into the issue. And it was certainly different than my literature review which again reflects the approach that I took. So I don't really have a comment on whether it's balanced or unbalanced. I'm assuming that it reflects his understanding and his background in expertise in the way he approached the problem.<sup>107</sup>

104. The Province, Canada and the BC Salmon Farmers Association (“BCSFA”) rely on the analysis of Dr. Noakes with respect to the risk of disease from farmed fish,<sup>108</sup> despite the fact the he is not an expert in disease, parasites or fish health. Canada uses Dr. Noakes’ report as the basis to conclude that, overall, salmon farms pose no significant threat to FRSS and that salmon farming has not caused the decline in FRSS productivity.<sup>109</sup> The FNC reject this approach as it does not accurately reflect a risk based analysis or a precautionary approach.
105. The FNC supports the points made by the Aquaculture Coalition at pages 13 and 14 of their submissions where they state:

The Commission’s process for the Project 5 Reports was unusual. Rather than seeking one neutral scientist to author a single Report (opposed by the BCSFA), Commission staff consciously identified a scientist from each ‘side’, and commissioned a Report from each. While that process seems fair, it must be recognized that the inevitable consequence of that choice is to produce the appearance of ‘dueling’ science.

In such circumstance, it might be tempting to conclude that “the science is controversial”, or that in the absence of consensus, “no conclusion can be reached”. Given that the Commission, through its process, has constructed the very scenario of opposing viewpoints, to do so would be an abdication of the Commission’s responsibility.

It is questionable as to why the Commission sought to employ, as a primary strategy, a search for statistical proof. That is not to blame Dr. Korman, Connors or Noakes, all of whom are primarily

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<sup>107</sup> Transcript, August 26, 2011, pp. 48-49 (Dr. Noakes)

<sup>108</sup> Canada Final Written Submissions, para. 672; British Columbia Final Submissions, paras. 54-155; BCSFA Final Submissions; paras. 134, 137, 138, 143, 153-184, 321

<sup>109</sup> Canada Final Written Submissions, para. 672

statisticians, and not experts in fish health. They did what they were asked to do. However, it must be noted that 'disease' and particularly 'epidemic disease' is not necessarily subject to statistically precise patterns. By its very nature, epidemic disease happens occasionally and often unpredictably. To expect a predictable pattern, based on slight changes in population or production, that could be exposed through statistical analysis would not be the first choice in looking for evidence.

In population disease, the normal course to find patterns would be to look to ecological science. That is all the more true in this case, where only a few years of data were produced by fish farmers. Although they have been operating for 20+ years, only 5 years of usable data was available. In that circumstance, it is no surprise that any statistical correlation would be either difficult to find, or a very weak one.

106. Canada submits that the science DFO has undertaken has been adequate for addressing the potential impacts of aquaculture to wild salmon. The FNC disagrees. At para. 670 of their submissions, Canada incorrectly asserts that:

The science underpinning management decisions is a critical element in setting current practice and future directions. Throughout the last two decades, there has been ongoing investment and leadership in research by DFO to better understand the potential risks associated with the interaction of farmed and wild salmon...DFO has continued to develop and advance both an understanding of potential interactions and management measures to address them.

107. There is no substantive evidence in the Inquiry to suggest that DFO has provided investment and leadership in research that considers the potential risks associated with the interaction of farmed and wild salmon. In fact, the submissions of many participants identified the lack of information or data on interactions between farmed and wild salmon in BC, including the lack of research on disease.<sup>110</sup>

## **N. Contaminants**

108. It is the FNC's submission that pages 166 and 179 of the Province's submissions do not accurately reflect the evidence in this Inquiry, and in particular they incorrectly suggest that effluents are not a factor of concern in the long term decline of FRSS.

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<sup>110</sup> See for example, para. 75 at page 103 of the Province's submissions; pages 10-13 of the Aquaculture Coalition's submissions; paras. 324-341 of the FNC's submissions

109. Mr. Marmorek testified that he could draw no conclusion as to whether ECCs or endocrine disrupting contaminants were a primary driver in the long term decline in the productivity of FRSS because of a lack of data.<sup>111</sup> He was only able to make conclusions with respect to measured contaminants outlined in Technical Report #2. Mr. Marmorek also testified that his conclusions regarding the role of conditions in the freshwater environment depended upon the data that was available about those conditions and that there “weren’t many datasets available within the time they had and may not be available...”<sup>112</sup>
110. Dr. Peter Ross, Mr. Van Aggelan and Dr. Ashley also identified the need to conduct further research regarding the effect of ECCs and endocrine disrupting contaminants from municipal wastewater effluent.<sup>113</sup>
111. The FNC submits that the Province has failed to differentiate between measured contaminants and ECCs and endocrine disrupting contaminants (“EDCs”) in their submissions, and mischaracterized the evidence with respect to the conclusions in Technical Report #6. The evidence does not support the Province’s conclusion that contaminants were not a primary factor in the long term decline of FRSS, or that wastewater effluents were not a contributor in recent declines of FRSS. The only conclusion that can be drawn is that it is currently unknown whether ECCs or EDCs, including those from municipal wastewater, are a factor and that further research is required.

### **III. AREAS OF AGREEMENT**

#### **A. Broad Areas of Agreement**

112. There are many areas of agreement among the participants in the Inquiry regarding what recommendations will best ensure the sustainability of FRSS and FRSS fisheries into the future. In this section, consistent with the call for broad cooperation among all participants in the Inquiry, we begin the task of noting where recommendations and submissions of other participants are broadly aligned and converge.

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<sup>111</sup> See FNC submissions, paras 462-463

<sup>112</sup> Transcript, September 19, 2011, p. 35 (David Marmorek)

<sup>113</sup> Transcript, June 14, 2011, p. 10 (Mr. Graham Van Aggelan); Transcript, June 14, 2011, pp. 12-13 (Dr. Peter Ross); Transcript, June 14, 2011, p. 15 (Dr. Ken Ashley)



113. The FNC agrees with the submissions and recommendations of the First Nations participants in the Inquiry regarding the need for:
- a. recognition of and respect for s. 35 Aboriginal rights;
  - b. implementation of meaningful, transparent, and comprehensive co-management and joint decision-making structures;
  - c. continued development of the capacity in First Nations communities to allow them to take on co-management responsibilities;
  - d. changes to existing fisheries management practices and structures in light of co-management; and,
  - e. incorporation of indigenous knowledge and TEK in research and management.
114. We submit that these areas of convergence are consistent with many of the recommendations we outlined in our topics: “Aboriginal Rights and Co-management” and “Indigenous Knowledge and TEK.”
115. In addition, the FNC notes that certain participants, including the Conservation Coalition and Canada, have explicitly recognized in their final submissions the “unique position of First Nations and their relationship to Fraser sockeye,”<sup>114</sup> and the priority place that First Nations rights to fish for FSC purposes have within the management of the fisheries.<sup>115</sup> The FNC says that submissions such as these exemplify the recognition that First Nations are not simply another stakeholder interested in the conservation of FRSS and the proper management of the fisheries, but that First Nations hold unique, *sui generis*, Aboriginal rights and responsibilities in connection with Fraser sockeye.
116. In addition, the FNC agrees with para. 40 of Canada’s submissions, which provides:
- Success in building strong collaborative relationships through DFO programs will help in achieving the overall goal of reconciliation with First Nations. This, combined with a sound integrated management framework, will in turn contribute to the stability and sustainability of the overall fishery.

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<sup>114</sup> Final Written Submission on behalf of the Conservation Coalition, para. 2(e)

<sup>115</sup> Final Submissions of the Government of Canada, para. 482

117. The FNC submits that it is especially relevant that Canada acknowledges that “moving toward co-management, including an increased role for Aboriginal groups in development and decision-making, is an objective for DFO.”<sup>116</sup>
118. The FNC agrees with the submissions and recommendations of the First Nations participants and the Conservation Coalition regarding the need for:
- a. implementation of the WSP;
  - b. protection of weak or vulnerable CUs;
  - c. approaching salmon management from a holistic perspective and using precautionary approaches; and
  - d. managing fisheries and conducting science in a fair and transparent manner.
119. We submit that these areas of convergence are consistent with many of the recommendations we outlined in our topics: “Conservation, Biodiversity, and Precautionary Approaches”, “WSP”, and “FRSSI and Setting Escapement Objectives,” “Aquaculture and Contaminants” and” Marine Environment.”
120. The FNC agrees with the submissions and recommendations of the First Nations participants, the Conservation Coalition, Area B and D regarding the need for:
- a. Proper habitat management, monitoring and enforcement.
121. We submit that these areas of convergence are consistent with many of the recommendations we outlined in our topic: “Habitat Management, Protection, and Enforcement.”
122. Finally, the FNC agrees with the submissions of many participants as to additional research that must be undertaken, including research on:
- a. Stock assessment during all life history stages;
  - a. Impacts from aquaculture on farmed and wild fish;

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<sup>116</sup> Final submissions of the Government of Canada, para. 691

- b. Cumulative impacts in both and freshwater and marine environments.
- c. Impacts and effects in the marine environment;
- d. Contaminants.

## **B. Specific Areas of Agreement**

123. In this section, we note in greater detail some of the specific areas of agreement between the FNC and other participants, and in some cases endorse the submissions of other participants.

### **i) Canada's Submission on Future Sustainability of the FRSS Fishery**

124. At paras. 284 and 712 of its submissions, Canada outlines the six elements that it says are important to the future sustainability of the FRSS fishery. The FNC also views these six elements as important to the future sustainability of the FRSS fishery and would agree with them with the revisions noted below:

1. **Canada says:** "A clear framework to guide the planning, consultations and work required to enable future sustainability of a healthy Fraser sockeye resource"
  - a. **The FNC submits:** This is best achieved through Tier 1, 2, and 3 structures aimed at clarifying roles and responsibilities of governments (Canada, the Province, and First Nations) and stakeholders.
2. **Canada says:** "A strong scientific foundation to support discussions around risks, benefits, and trade-offs"
  - a. **The FNC submits:** This foundation must include TEK and principles of ecosystem-based management, and must also include social science in order to develop sufficient understandings to better inform and assess risks, benefits and trade-offs.
3. **Canada says:** "An approach to managing Aboriginal fisheries in an effective and respectful manner"
  - a. **The FNC submits:** All fisheries should be managed in an effective and respectful manner that respects s. 35 Aboriginal rights, including the corresponding responsibilities.

4. **Canada says:** “Clear rules for sharing the Fraser sockeye harvest including more flexible approaches to avoid weak stocks, address First Nations fishery aspirations and improve the viability of the fishery”
  - a. **The FNC submits:** These rules must to be reached using effective Tier 1, 2, and 3 processes so that their implementation is not fraught with conflict.
5. **Canada says:** “Confidence and trust among all parties that fisheries are being effectively managed, that fishing regulations are being complied with, that data on catch and spawner levels are reliable, and that finfish aquaculture is being effectively regulated”
  - a. **The FNC submits:** There must be an in-depth understanding of what “effectively managed” means, especially with regard to finfish aquaculture.
6. **Canada says:** “The incentives, structures and supports to promote effective collaboration and shared responsibility for future sustainability of the Fraser Sockeye fishery”
  - a. **The FNC submits:** Like element #1, this is best achieved through meaningful dialogue and Tier 1, 2, and 3 structures.

**ii) Funding**

125. The FNC agrees with p. 8 of Area B and D’s final submission that the “overwhelming body of evidence heard throughout these hearings [is] that funding shortages [are] impairing an effective management.” Financial challenges facing DFO are a relevant factor affecting the decline of FRSS and DFO’s ability to work towards the conservation of FRSS the authorization of sustainable fisheries into the future.

**iii) Aquaculture**

126. Given the potential risks of ISA virus, the FNC agrees with the proposed solution of the Conservation Coalition in para. 63 of its submissions, which states:

63. Finally, there is strong evidence that Infectious Salmon Anemia (or ISA) can be transmitted vertically, and that the recent outbreak of ISA in Chile was transmitted via imported salmon embryos (Exhibit 1502, ISA Virus in Chile: Evidence of Vertical Transmission, p. 1). In accordance with the precautionary principle, importation of salmon eggs into Canada must be banned outright.

127. The FNC supports the submissions of the Conservation Coalition in paras. 41-43, outlining the risks of open net pen aquacultures, including the risks of disease. The FNC

also supports the submissions presented in paras. 46-49 of the Conservation Coalition's submissions, which refer to issues with siting, problems with the new *Pacific Aquaculture Regulations* and the problematic models used to assess the impacts of fish farms, which do not consider the risk of increased disease.

128. Given the increased risks and uncertainty that open net pen aquaculture pose to wild salmon and the need for further research on the impacts of disease, the FNC supports the solution set out in para. 58 of the Conservation Coalition's submissions, which states:

Expansion of the open-net aquaculture industry, both its terms of farm sites and increased production levels, must cease immediately. DFO should not even consider expansion applications until an assessment of the cumulative impacts of current open-net aquaculture, as well as the carrying capacity of the receiving environment, is conducted.

129. The FNC can also support the recommendations, iv.5 and iv.8, set out at page 20 of the Conservation Coalition's submissions. These recommendations are:

iv.5. Adopt the precautionary approach to all permitted industrial activities taking place in Fraser Sockeye habitat. Increase compliance monitoring and enforcement activity, and undertake comprehensive peer-reviewed research into the impacts of open-net cage salmon aquaculture on wild fish stocks, focusing primarily on fish health;

iv.6. Immediately halt DFO's and the Canadian General Standard Board's efforts to certify net-cage reared farmed salmon as organic;

iv.7. Extinguish all licences, and recommend the province extinguish all tenures, without compensation, of farm sites that have not been in active use for over 12 months;

iv.8. Ban the importation of salmon eggs into Canada.

130. The FNC supports the evidence presented by the Aquaculture Coalition starting on page 5 of their submission, under the heading: "The risk is from Endemic and Exotic Disease" to the top of page 9 and supports the recommendation on page 9 that flows from those submissions, which states:

DFO institute a program to audit disease in live fish, and the federal government implement regulations to allow DFO to conduct the audits.

131. The FNC also supports the recommendation made on page 13 of the Aquaculture Coalition's submissions, which states:

DFO should prioritize scientific research that impartially investigates the impacts of aquaculture on wild salmon stocks and the ocean ecosystems and aimed at ensuring the conservation of wild salmon and salmon habitat. Research into disease in wild salmon and aquaculture; and disease interactions between the two, be given highest priority.

**iv) Marine Spills**

132. The FNC adopts the evidence and submissions with respect to marine spills set out at paras. 111-116 of the Conservation Coalition's final submissions and highlights below further evidence in support of this matter.
133. Dr. Ross identified the impacts from oil and diesel spills on migrating marine species, including FRSS, stating:

...there are many thousands of scientific studies around the world looking at the effects of fuels and hydrocarbons, related hydrocarbons on the health of fish. In moderate to higher concentrations, we'll see acute toxicity. We'll see belly-up. In lower concentrations, we can see malformations in fish fry, death of eggs, we can see difficulties in transforming from fresh water to salt water. We can see narcosis, a dulling of the senses and confusion in adult fish that are migrating through these -- through such spills. So we -- I think there exists ample understanding about the risks posed by a number of different types of hydrocarbons, the extent to which we can apply that to a B.C. setting is a little bit unclear, because there is no research being carried out right now on any kinds of hydrocarbons and their effects on any species in British Columbia.<sup>117</sup>

134. However, in his evidence, Mr. Di Franco agreed that an individual working with the Canadian Coastguard, who makes an assessment about the impact of an oil spill in the marine environment and who decides whether further action is required (including activating the Regional Environmental Emergency Teams ("REET")), would not likely

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<sup>117</sup> Transcript, August 18, 2011, p. 32 (Dr. Peter Ross)

have an understanding of the short and long term impacts of the oil spill to the environment and marine species, including salmon.<sup>118</sup>

135. When asked whether communications with First Nations should occur, regardless of the size of the spill within their traditional territories, Mr. Di Franco stated that First Nations do not need to be contacted for every spill that occurs.<sup>119</sup> Dr. Peter Ross disagreed, and testified that it is important that First Nations be notified about oil spills, given the importance of fish and aquatic resources to First Nations communities.<sup>120</sup> Dr. Ross went on to identify his main concern with the Coast Guard's current operational framework with respect to oil spill response, including their engagement with First Nations. He testified:

...there does not appear to be any requirement to build science, habitat or aboriginal concerns into that operational framework right now, and that remains the purview of a voluntary instigation of the REET and that that REET is a good conduit for many of these concerns or many of these communications, but it's voluntary. It's not always enacted. It does not guarantee effective communication with some of the important stakeholders, so I guess those are two different issues. That's the role of the REET whether it's currently satisfactory and then before that, whether the operational response is satisfactory in terms of accommodating science, habitat or First Nations perspectives.<sup>121</sup>

136. The FNC submits that there are many benefits of more stringent reporting and collaboration between DFO (Coast Guard) and First Nations, including expertise, monitoring, potential impacts, etc. DFO should make immediate contact with First Nations when there is any hydrocarbon spill in their traditional territories in order to provide information about the spill and to consult with First Nations about the potential impact of the spill and potential responses.
137. The FNC agrees with the recommendation of the Conservation Coalition made in para. 116 of its submissions, that a formalized structure be established that ensures ecosystem impacts of marine spills are adequately considered be established, with the addition that First Nations must be part of the formalized structure and that the

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<sup>118</sup> Transcript, August 18, 2011, p. 33 (Sergio Di Franco)

<sup>119</sup> Transcript, August 18, 2011, p. 35 (Sergio Di Franco)

<sup>120</sup> Transcript, August 18, 2011, p. 37 (Dr. Peter Ross)

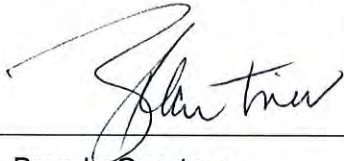
<sup>121</sup> Transcript, August 18, 2011, pp. 37-38 (Dr. Peter Ross)

operational structure and response must satisfactorily include their concerns, interests and knowledge regarding habitat, and other issues.

**v) Terminal Fisheries**

138. The FNC supports the submissions of the Conservation Coalition, at para. 35 and recommendation iii.3, wherein it notes that shifting to more precautionary in-season harvest decisions that adequately protect stocks at the CU level is supported by a move to more terminal fisheries.
139. As we finalize our work in the Inquiry, we will continue to look for areas of convergence amongst the participants in aid of the conservation and management of sustainable FRSS fisheries.

All of which is respectfully submitted this 3rd day of November, 2011.



Brenda Gaertner

"Anja Brown"

Anja Brown



Leah Pence



Crystal Reeves



List of Authorities

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