

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.

SUBMISSIONS REGARDING INFECTIOUS SALMON ANEMIA VIRUS (ISAV)

ON BEHALF THE CONSERVATION COALITION:

COASTAL ALLIANCE FOR AQUACULTURE REFORM,

DAVID SUZUKI FOUNDATION

FRASER RIVERKEEPER SOCIETY, GEORGIA STRAIT ALLIANCE,

RAINCOAST CONSERVATION FOUNDATION,

WATERSHED WATCH SALMON SOCIETY, AND

MR. OTTO LANGER

1. The Conservation Coalition makes the following submissions in response to the significant threat posed by recent and multiple detections of Infectious Salmon Anemia virus (“ISAv”) in B.C. In short, the inadequate response by government to detections of ISAv, both in 2004 and more recently, support the need for independent assessment of the presence of ISAv in B.C. Such an independent assessment must be conducted immediately, and it must be both comprehensive and transparent.

Ongoing Failure to Adequately Assess the Presence of ISAv in BC

2. In 2004, Molly Kibenge detected the presence of ISAv in 64 out of 64 Cultus Lake sockeye salmon (Ex. 2045; p. 13). Despite this large-scale detection seven years ago, DFO has failed to conduct any supplemental testing of Cultus Lake sockeye salmon for ISAv (Jones: Dec. 19; p. 57; l. 32 - 45). This failure to undertake supplemental sampling and testing of Cultus will not be addressed with the CFIA draft surveillance plan. Accordingly, an obvious aspect missing from the CFIA draft surveillance plan is supplemental sampling and testing of stocks where ISAv has already been detected. Thus, confirmatory sampling and testing must, at a bare minimum, include sampling from Cultus Lake and Rivers Inlet stocks. As noted in the OIE chapter on *Aquatic Animal Health Surveillance*, surveillance systems ideally focus on all populations susceptible to a disease; and, where limited, they

should target epidemiological units or subpopulations that would generate the most useful information (Ex. 2134, p. 3). Despite this, the CFIA draft surveillance plan will not sample or test from most subpopulations where previous detections of ISA v have occurred.

Multiple Assays

3. According to evidence from Dr. Miller, and despite DFO's Moncton laboratory inability to confirm its presence, there is a significant possibility that there is a novel strain of ISA v in B.C. Moreover, there is a significant possibility that a primary reason DFO Moncton has not confirmed the presence of ISA v in B.C. is as a result of its choice of assay (Ex. 2056). The use of multiple and varying methodologies is supported by the World Organisation for Animal Health ("OIE") in the *Aquatic Animal Health Code*, chapter 1.4 - *Aquatic Animal Health Surveillance*:

Surveillance data should be analysed using appropriate methodologies...whether it be planning interventions or demonstrating status. Methodologies for the analysis of *surveillance* data should be flexible to deal with the complexity of real life situations. No single method is applicable in all cases. Different methodologies may be needed to accommodate the relevant pathogens, varying production and *surveillance* systems, and types, quality, and amounts of data/information available [emphasis in original] (Ex. 2134; pg. 3)

4. By this same logic, if multiple laboratories are detecting ISA v with varying assays, one cannot adopt a single methodology for testing or confirmation. Instead, a practical response is for testing to be conducted using multiple assays, focusing on multiple segments. This is the response taken by Dr. Miller and, indeed, when applied by DFO's Dr. Kyle Garver resulted in positive ISA v detections (Ex. 2056). Despite this, the CFIA draft surveillance plan explicitly relies on the faulty assumption that "the same test can be used for the detection of both HPR0 and ISA v virulent strains" (Ex. 2112; p. 18).

Additional Shortcomings of Current CFIA Draft Surveillance Plan (Ex. 2112)

5. There are so many serious shortcomings with the CFIA draft surveillance plan that it seems designed to fail. Absent significant alterations, as well as independent oversight, the CFIA surveillance regime will very likely perpetuate uncertainty regarding ISA v in B.C. for years to come. Given that early detection is critical in disease management, this draft surveillance plan presents a serious risk to wild salmon generally and Fraser River sockeye salmon in particular. According to Dr. Kibenge, given today's technology a comprehensive assessment of the presence of ISA v should be completed in less than 6 months (Kibenge: Dec. 16; p. 41; l. 28 – 31)

6. One key shortcoming of the CFIA draft surveillance plan is that it is only being designed to detect known strains of ISA_v (Ex. 2112; p. 13). According to Dr. Miller, there is potentially a novel strain of ISA_v in B.C., which is not picked up by all current assays (Miller: Dec. 15; p. 22; l. 22 – 25). As noted in the OIE *Aquatic Animal Health Code*, chapter 1.4 - *Aquatic Animal Health Surveillance*: “The specific sampling requirements will need to be tailor-made for each individual *disease*” (Ex. 2134; pg. 20). ISA_v is known to mutate into divergent strains (Ex. 2083) and therefore an ISA_v surveillance regime must take this possibility into account. Indeed, the possibility that a novel strain exists in B.C. must be a central aspect of a reasonably designed surveillance plan.
7. Moreover, as a result of the potential serious consequences of ISA_v and initial positive detections of ISA_v – however preliminary – there is a need to immediately develop both research and surveillance plans that exclusively focus on ISA_v (Ex. 2085). Additional diseases may also be screened for, but DFO and CFIA should consult with all stakeholders to determine which diseases to assess. Indeed, based on received by this Commission, a surveillance regime should assess the presence of Heart and Skeletal Muscle Inflammation or HSMI (Miller: Dec. 15; p. 112, l. 13 – p. 113, l. 9).
8. The CFIA draft surveillance plan also states that the preferable manner for disease confirmation will be virus isolation (Ex. 2112; p. 13). Nonetheless, as noted by Dr. Miller, it took over eight years to culture a Norwegian strain, and the development of a new cell line may be necessary (Miller: Dec. 15; p. 129; l. 40 – 46)(Kibenge: Dec. 15; p. 45, l. 46 – p. 46, l. 19). Given that there is a potentially novel strain in B.C. and that culturing a strain may take many years, the design of this surveillance regime may result in a failure to ‘confirm’ ISA_v for many years, and notwithstanding significant evidence of its presence. While a surveillance regime must be designed to prevent the confirmation of ‘false positives,’ a surveillance regime must also ensure ‘false negatives’ are avoided (Nylund: Dec. 15; p. 68; ll. 32 - 38).
9. The CFIA draft surveillance plan also relies heavily – and unreasonably – on past non-detection of ISA_v in B.C. In this regard, the CFIA draft surveillance plan references various methodologies, including ‘temporal discounting,’ which will inform the surveillance plan and which will, ultimately, inform the stated probability of disease freedom (Ex. 2112; pp. 8 – 10). Once again, however, there is potentially a novel strain of ISA_v in B.C.; and the assay used by DFO Moncton (as well as the Province) may not detect this strain. It is unreasonable to base the methodology of this surveillance plan on past tests results and non-detection, when there is significant evidence that a novel strain and choice of assay renders past tests meaningless (Dr. Miller: Dec. 15; p. 121; ll. 11 - 30).

10. A reasonable surveillance plan should sample and test as many fish as possible, from a variety of locations and should sample various ages/life stages. Specific to Fraser River sockeye, a reasonable surveillance plan must survey multiple Conservation Units (“CUs”), and should focus on those CUs that have been preliminarily assessed in the ‘Red Zone’ (Ex. 184; pp. 92 – 96). This is particularly the case given that disease has been identified by DFO as one of three most likely causes in the decline of Fraser sockeye and, consequently, the most likely causes of Fraser sockeye CUs that are in the ‘Red Zone’ (Ex. 616A)(Ex. 1371; p. 4).
11. With regards to testing for ISAv in industrial aquaculture facilities, the CFIA draft surveillance plan states that industry will be responsible for providing and selecting its own samples where required (Ex. 2112; p. 26). To ensure accountability, the CFIA draft surveillance plan states that approximately 15 sites will be visited annually, or 10% of farms (Ex. 2112; p. 24). This means aquaculture facilities will be audited every 10 years. This is clearly inadequate.
12. Finally, the proposed number of fish to be sampled is clearly inadequate. In this regard, the CFIA draft surveillance plan envisions sampling and testing of 176 Fraser River sockeye salmon (Ex. 2112; p. 20). While we do not propose a specific number of fish that must be sampled and tested, we submit that sampling and testing must be wide-spread and comprehensive, and that 176 Fraser River sockeye salmon clearly does not meet this threshold.

Conclusion

13. The heavy-handed response by government departments to positive ISAv test results, which includes intimidation and publicly undermining government and independent scientists, supports the need for independent oversight of ISAv confirmation. The need for a separation between science and political decision-makers is further strengthened as a result of industry’s privileged access to government decision-makers (see, for instance, Ex. 2138). Indeed, this Commission will be hard-pressed to make recommendations that address the above concerns other than recommending a structural separation between science and political decision-making. It is absolutely integral that science not be influenced by politics. Due to the accountability of our democratic system, so long as science is conducted and disseminated transparently, political decision-makers may choose to ignore it at their peril. Nonetheless, the science must be transparent and free from political influence and there needs to be a separation between policy and science (Kibenge: Dec. 16; p. 43; l. 30 – 40)(Gagne: Dec. 16; p. 43; l. 18 – 19)(Ex. 2094; Rec. 3).

14. We therefore support the call from multiple leading scientists to establish a structural separation between science and political decision-making with respect to the management of fisheries generally, and with respect to the assessment of the presence of ISAv in B.C. particularly.

All of which is respectfully submitted this 29th day of December, 2011.



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