

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

**SUPPLEMENTARY ARGUMENT- ISA HEARINGS
AQUACULTURE COALITION
DEC. 29, 2011**

The three days of hearings held by the Cohen Commission in response to recent positive test results for ISA in Pacific salmon both demonstrated that infectious salmon anemia is present in British Columbia, and, confirmed that the federal government does not take a precautionary or responsible approach to the risk and presence of disease in salmon in British Columbia (a point made by this and other participants during the main hearings). The following submissions highlight significant points from the three days of hearings on ISA.

A. ISA EVIDENCE

1. ISAv is Here in BC

The initial factual findings that the Commission should make are that a form of ISA virus is present in British Columbia and that it has been found in Fraser River sockeye stocks.

There is no reason to disbelieve the sworn evidence of Dr. Kibenge, Dr. Nylund or Dr. Miller. The evidence of each of these witnesses corroborates the findings of the others, and is reliable and credible. Although the findings of Dr. Kibenge and Dr. Nylund could in some cases be described as ‘weak positives’, they were nevertheless positives. Both are acknowledged experts in the field of ISA research and diagnosis. Dr. Kibenge stated that his lab engaged a process to ensure the results were true positives.¹ In his testimony, Dr. Nylund confirmed his expert opinion that Dr. Kibenge’s findings should be regarded as positives and reliable.² Dr. Nylund confirmed his own findings to be a reliable positive finding.³ The independent findings by Dr. Nylund and Dr. Kibenge in the initial Rivers Inlet group of 48 fish provided them with the confirmation of each other, and on a statistical basis eliminate any reasonable possibility of contamination or other laboratory error.⁴

The efforts of some Participants before the Commission (Canada, BC and BCSFA) to cast doubt on these findings fell far short of the civil standard of proof that should be applied by the Commission. Merely asserting the possibility of a ‘contamination’ without any positive evidence thereof, raising potential, unsubstantiated, technical flaws with Dr. Kibenge’s

¹ Transcript, Dec. 15, 2011 (Kibenge), p. 13:17-25

² Transcript, Dec. 15, 2011 (Nylund), p. 116:5-11

³ Transcript, Dec. 15, 2011 (Nylund), p. 116:12-15

⁴ Note that both scientists found ISAv in the same fish - #36. The odds of such contamination or random laboratory error in the same one of 48 fish is one in 2,256, which itself must be multiplied by the extremely low chances of a false positive or contaminated result in any test in such labs. Note further that Dr. Kibenge’s samples were forwarded by Dr. Routledge, without contact with Dr. Morton, and Dr. Nylund’s samples were forwarded through Dr. Morton, not Dr. Routledge. Dr. Kibenge received samples of the heart, Dr. Nylund received gills, so that the similar findings were in two separate parts of the fish. Dr. Miller forwarded the kidneys to Moncton.

laboratory practices, or attempting to rely upon the failure of ‘repeatability’ cannot displace the clear positive findings of two experts in their field.

The additional positive findings by Dr. Kibenge in the second group of samples from the Fraser River system (Weaver Creek, Harrison Mills) must also be confirmatory of the findings of the Rivers Inlet group, and vice versa. Again, there is no evidence of flaws in his methodology or results.

The subsequent findings of Dr. Miller are again confirmatory of both Dr. Kibenge and Dr. Nylund. The fact that Dr. Miller used different primers, a different machine, and a different methodology, but also produced positive findings, itself provides another level of confirmation, that reduces any possibility of a consistent error. Dr. Miller’s genetic approach is novel and advanced, but this is not grounds to reject it.⁵ Dr. Kibenge, the OIE designated expert on ISA, considered her results to be credible.⁶ Dr. Miller is a senior DFO scientist, in charge of the genomics lab, and it would not serve DFO or Canada well to contest the credibility of her findings. (Yet that is what DFO has done from the time of the findings.)

2. The failure of the DFO Moncton Lab to Confirm the Results

The consistent failure of the Moncton lab to be able to find the evidence of the virus clearly found by the three other labs involved in the testing does not and cannot disprove the clear positive findings in the other three labs. Rather, it suggests the incapacity of the Moncton lab, its methodology, or its diagnostic equipment.

The best evidence available to explain the Moncton’s lab failure comes from Dr. Kibenge and Dr. Miller. The evidence that the Moncton lab uses the stratagene machine – which, in published research has been found to be less sensitive and to generate false negatives -- may be the most compelling explanation, especially if it be assumed that only small amount of the virus or a weaker, more difficult to detect strain was present (Dr. Gagne’s lab was the only one of the four labs that tested the Pacific salmon to use this technology).⁷ The evidence of Dr. Miller should also be accepted - it appears that the primer and methodology being followed by Moncton may not be one suited to the particular strain of virus found in BC.⁸

The rigid, or even perhaps stubborn, application of one approved methodology is a weakness in the Moncton lab. Dr. Miller relied on a number of peer-reviewed primers to produce her results. It may perhaps be true that a highly-structured and consistent approach is appropriate for testing with a regulatory impact (as CFIA might contend) but such a limited approach is not more reliable if the goal is initial detection - which is the fact-finding approach the Commission should be most interested in. If early detection and protection of wild salmon was the goal, then any

⁵ Dr. Nylund’s expressions of concern over this methodology arose only from its unfamiliarity. Those expressions in his evidence did not amount to a considered expert opinion against her findings, and did not amount to a rejection of it. He was not asked to give that opinion, nor did he conduct the necessary experimental work to do so. At most it could be said that Dr. Nylund was unwilling, based on his uncertainty about the procedure to expressly confirm her findings.

⁶ Transcript, Dec. 15, 2011 (Kibenge), p. 59:17-42

⁷ Ex. 2034 (Kibenge et al, “ISAV Ringtest...”); Transcript, Dec. 15, 2011 (each witness), pp. 41:33-44:15

⁸ Transcript, Dec. 15, 2011 (Miller), p. 22:3-39; (Gagne), p. 30:36- 31:25

method which can give such early warning is to be supported. Also, if mutation or evolution of known strains of viruses is accepted as a possibility, a wider range of methodology and primers is far more likely to

It must also be noted that even Moncton did find a positive result.⁹ Dr. Gagne's willingness to dismiss that positive, based apparently on Dr. Kibenge's negative finding in the same fish, or its lack of replication, does not seem consistent with the scientific method. Again, this may be appropriate in a regulatory context, but not for a research or fact-finding approach.

3. The 2004 Finding - Dr. Molly Kibenge

The positive findings in 2002-2004 by Dr. Molly Kibenge at the DFO lab at the Pacific Biological Station must also be accepted, on the civil burden of proof, as positive findings. These findings were confirmed, at least in part, by Dr. Fred Kibenge's OIE laboratory in PEI at the time.¹⁰ The positive findings of both Dr. Molly Kibenge and Dr. Fred Kibenge – at two separate labs -- are corroborative of each other, and the number of them cannot be reasonably dismissed as 'false positives'.

The reasons given by DFO at the time and by Dr. Simon Jones in his testimony before the Commission, we suggest, should be found by the Commissioner to be completely inadequate. The rationale that the virus results could not be cultured, would not, on a scientific basis, prove the absence of the virus – by all accounts strains of ISA as well as other viruses, have been notoriously difficult to culture.¹¹ The fact that the result could not be replicated at the Moncton lab could equally justify concern about the Moncton lab's capacity as cast doubt on positive findings. At best, the lack of replicability and confirmation by culture *might have justified some caution* in accepting the results as absolute proof - what it cannot and could not at the time justify is dismissing the results out of hand. Had Dr. Jones truly been showing 'caution', as he suggests it would have been shown by attempting to reproduce the results, or by further testing.

DFO did not do further testing, or attempt to reproduce the results. Instead it buried the results completely for seven years. Instead it decided to not test any further wild salmon. This reaction is not consistent with the scientific method or a precautionary approach - rather it shows action of a political nature - denial and suppression of an inconvenient fact. In legal terms, it is known as willful blindness, also characterized in some circumstances as gross negligence.

There has been no *credible* explanation given to the Commission of the suppression by PBS of the 2004 results, and the failure to follow-up on these results, at least by the further testing of additional fish. The failure to credibly explain this failure should lead to some analysis by the Commission of what reasons exist for the structural failure of DFO to live up to its mandate to

⁹ Ex. 2040 (Email thread between Crystal and Gagne, Nov. 4, 2011); Testimony of Nellie Gagne Transcript, Dec. 15, 2011, p. 17:7-19:8; Dec. 16, 2011, p. 66. It was a "38 count" which Ms. Gagne says is at "the limit of detection". Note that Dr. Kibenge's evidence was that the stratogene machine used produced a count roughly 3 Ct's higher than others, which would mean this count was similar to Dr. Kibenge's results.

¹⁰ The fact that Dr. F. Kibenge found three positives among her negatives, and that he could not confirm all positives - only three of 10 - does not eliminate the fact that he also found positives. At best, it shows the difficulties in finding positives, and may relate to the strain of the virus.

¹¹ See, for example, the testimony of Dr. Kibenge, Dec. 15, p. 45:37- 46:19.

protect wild salmon. The willful blindness of DFO when it comes to disease, we submit, arises from a structural problem – its association with the protection of the aquaculture industry, and the unwillingness to examine diseases in wild salmon potentially challenging the viability of that industry in our coastal waters.

There was also no credible explanation given for the withholding of these results from the Commission itself. DFO failed to produce it in over a year of production, and failed again to produce it even once hearings into ISA had been scheduled and further production ordered. It was Dr. Kibenge who finally produced this report – had he not done so, it seems likely it would never have been disclosed.¹²

4. The Failure of the Provincial Lab to find ISA

Much emphasis has been placed by Canada, BC and the BCSFA on the failure of Dr. Marty and his lab to find ISA in 4,700+ PCR tests between 2004 and 2010. BC and BCSFA relied upon those tests to dispute the observations of ISA symptoms in the provincial audits in the original hearings on aquaculture and disease. DFO and CFIA relied upon it in all the media releases put forward in November and December.

The evidence is now clear the Dr. Marty was conducting PCR tests with no confirmed validity. His PCR test was developed in-house, by a master's student.¹³ This methodology used a primer that was different from that approved by the OIE or by the Moncton lab. It was a primer that had never been through the validation process¹⁴, nor even apparently a peer-reviewed publication. Dr. Kibenge testified that in his opinion this test would not be sensitive to finding ISA.¹⁵ Without further scientific evidence supporting the validity of this test, the Commission should reject the prior evidence of the 4,700+ tests, or refer to them as being of 'questionable validity'.

Further, the failure of Dr. Marty to advise the Commission when he testified that the PCR process done by the province was a 'self-invented' one, should be subject to substantial criticism, at the very least. In our respectful submission, this 'non-disclosure' is tantamount to deliberate deception, given the significance that Dr. Marty placed on these PCR tests in attempting to refute and dismiss Dr. Morton's interpretation of the 1,100+ instances of ISA-like lesions found in the provincial audits.

It should be noted that the percentage of unexplained ISA-like symptoms which were highlighted by Dr. Morton in her testimony, and set out in Exhibit 1976 (p. 28), are remarkably similar to the percentages found by Dr. Miller in her results. If Dr. Marty's PCR results can no longer be

¹² Dr. Jones and Dr. Garver were both aware of these findings. Dr. Garver in particular testified before the Commission on August 24 and 25, 2011 and was questioned about ISA. His failure to disclose at that time, when ISA was clearly an issue before that Panel, has not satisfactorily explained and should be the subject of comment by the Commissioner. Dr. Miller also confirmed that Stewart Johnson also knew of the report (Dec. 15, 2011, p. 110: 1- 27), and Dr. Johnson also failed to disclose that to the Commission in his testimony.

¹³ Exhibit 2082 (Email from G. Marty, Aug. 12, 2011); Transcript, Dec. 15, 2011 (Miller and Gagne), p. 111:6-23

¹⁴ Dr. Wright confirmed that the test used by Dr. Marty had never been validated under the approach set out in Exhibit 2000: Transcript, Dec. 19, 2011, p. 107: 21-23

¹⁵ Dec. 15, 2011, p. 111-112 l. 45-6

accepted as conclusive, then it is important that the Commission revisit the histological findings from the provincial audits.

5. The Nature of the ISAv Strain Found in BC

It is not possible, on the evidence presently available, to make any conclusions as to the nature of the ISAv found by Drs. Kibenge, Nylund and Miller. It is possible that the strain may be a non-virulent strain that is not always pathogenic, such as the HPR0 strain that has been found in other places. It may be that there is more than one strain present.

The best evidence seems to be that it is a virus that is most closely related to the European strain of ISA, and not from the North American strain. This would indicate that the virus has most likely come from Europe through importation of eggs at some unknown time in the past.¹⁶ More research is necessary to answer those questions. However, the most likely explanation for ISA of a European-related strain in BC must be fish farming.¹⁷

The importation of eggs for fish farming has been the subject of criticism in our previous written argument.¹⁸ The testing of imports for ISA has not been adequate. Indeed, if there is a new strain that existing tests could not detect, that testing has been useless. Additionally, we have submitted a paper by S. Goldes, a former senior biologist with the Province, outlining additional problems with the egg import protection strategy.¹⁹

However, if it cannot be said to yet be proven that the ISAv present in BC is pathogenic to salmon, it is also reasonable to state that it is not yet proven that it is not. ISA is any influenza-like viruses, that with small mutations can become highly pathogenic. Like the Spanish flu, H1N1, or other variations of Avian and Swine flu in human populations, influenza viruses in general can be present in large populations on a regular basis, but only give rise to high-mortality epidemics on a much more occasional basis. Moreover, the ongoing research of Dr. Miller and her graduate student, Brad Davis, states that ISA is causing negative health symptoms in infected Pacific salmon.²⁰ According to their research, the fish are reacting strongly to the presence of the virus; and, it cannot be assumed that the strain is not causing disease.

6. The Cause of the 2009 Collapse - the Differences in 2007 vs. 2008 Smolts

Dr. Miller testified that she retested her samples of 2007 and 2008 smolts, and found a “relatively high percentage” of ISA in the 2007 smolts, as well as high incidence of flava

¹⁶ European eggs have been imported into BC during the last century, and from the 1940s. Eggs have also been imported from Washington State, which in its turn received them from Europe.

¹⁷ Evidence of Dr. Christine MacWilliams, Transcript, Aug. 23, 2011, p. 47:41-46; also see Transcript, Dec. 15, 2011 (Nylund), p. 124

¹⁸ Written Submissions of the Aquaculture Coalition, Oct. 17, 2011, pg. 64-65

¹⁹ Exh TTT for identification, admissibility subject to a ruling from the Commissioner. In a separate letter to the Commission, we submit that the paper by Goldes ought to be admitted and considered by the Commissioner. Goldes has significant experience and education in fish health diagnostics and in particular the testing methods used by the government to monitor for disease in fish.

²⁰ Ex. 2052 (Davis, “Identification of the ISAv7 genomic expression profile...”), in particular see p. 5; Transcript, Dec. 15, 2011 (Miller), pp. 48:28-50:34

bacterium and “quite a high positive rate for the pasendrial virus that is possibly causative of HSMI”.

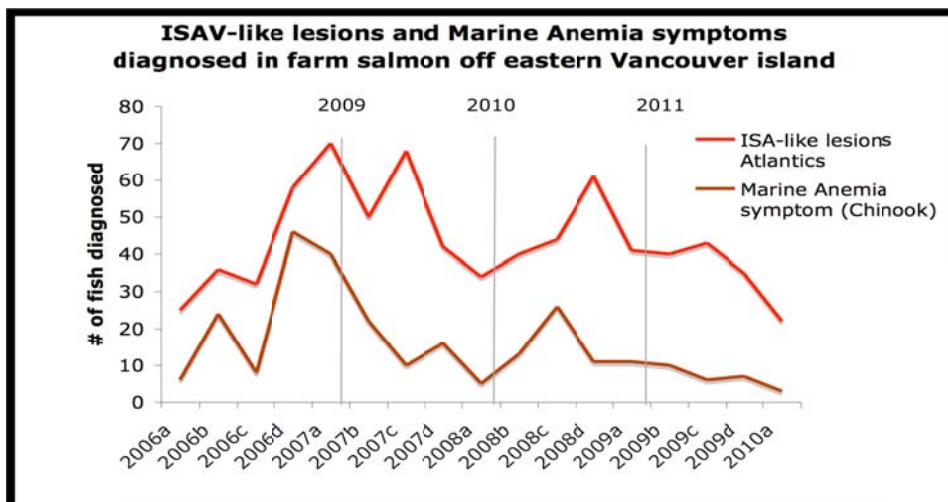
DR. MILLER: “The three differentials that we can see, and this is, again, based on a very small sample size, we have to be very careful with these data, but 2007 fish left the Fraser River with the high 1 incidence of a flava bacterium and it's pseudochromis, or something. It is a pathogenic strain of a flava bacterium that we haven't seen in other years. And when we sampled them in the marine environment, they had quite a high positive rate for the pasendrial [sic]²¹ virus that is possibly causative of HSMI. And they had, I believe – I can't remember the exact percentage, but a relatively high percentage of ISA, as well.”²²

This is important evidence in the context of this Inquiry. The significant difference in the disease status of the 2007 and 2008 smolts confirms and expands the earlier evidence of Dr. Miller of the discoveries of the PBS Genomics lab.

Although Dr. Miller's research is at an early stage, and there have been suggestions of weaknesses in her methodology, those alleged weaknesses could not explain the significant difference between the 2007 and 2008 results that she found. If her methodology (e.g. pre-amplification) were producing erroneously sensitive results, such errors should apply to all data. They do not explain why in 2007 smolts would produce consistently higher readings than in the 2008 smolts. That difference requires further examination, and suggests disease causation.

We refer to the earlier Written Argument of the Aquaculture Coalition. The evidence continues to suggest that ‘Disease’ is the leading explanation for the collapse of the 2009 sockeye salmon.

The consistency of this finding of 2007 versus 2008 results for ISA, and her earlier results in relation to the ‘Miller Virus’ or MRS also continues to suggest a link of some kind between the MRS and the ISA virus findings. It is not yet clear whether the link is causative or correlative, or whether there is some third factor at work, but it does support the need for further examination of the link. We reproduce Dr. Morton's chart, based on histological symptoms found in the provincial audits, which observe the two factors potentially acting in concert.



²¹ We believe that Dr. Miller may have used the term “piscine reovirus”.

²² Transcript, Dec. 15, 2011, p.113:45- 114:10.

7. HSMI

Dr. Miller's findings of HSMI in the creative salmon fish farm in Clayoquot Sound should raise some substantial concern, and should trigger a DFO response.²³ Her research comparing 2007 to 2008 smolts also showed a "high positive rate" for the causative virus for HSMI in the 2007 fish.²⁴

The HSMI disease has been a major factor in Norway, associated with fish farms²⁵. The most likely explanation for its presence in BC fish farms must be transferred from Europe, either through avian ports or other similar factor. The effects of HSMI on wild salmon have not been studied in Canada. HSMI has not been tested for in previous studies, nor has it been part of the egg import regime.

The presence of HSMI in a fish farm which has been showing evidence of a hitherto unexplained disease, and its confirmation in the 2007 smolts may be evidence of a direct link from fish farm disease to the 2009 sockeye collapse.

DFO has not yet responded to this finding. Given DFO's response to other novel pathogens - denial, delay and suppression - we ask that the Commission make recommendations in respect of HSMI research.

8. The Risk of Aquaculture for Wild Salmon Disease

The continued rise of novel pathogens in BC's wild salmon requires scrutiny of the wisdom of placing fish farms on wild salmon migratory routes. We repeat our submissions from our Final Submissions provided after the main hearings.

Fish farms create significant risk to wild salmon in two major ways:

- (a) as a source of new diseases; and
- (b) by providing an ideal -- and unnatural -- environment for amplification of endemic diseases, and for mutation of new diseases and increased virulence of existing ones.

The powerpoint presentation of Dr. Kibenge for the OIE and entered into evidence during these hearings provided a stark description of the severity of the disease risk associated with aquaculture.²⁶ The presentation opened with the statement "The spread of disease is the most feared threat to aquaculture" and went on to set out the spread of numerous significant epidemics and diseases in fish farms across the globe.

²³ Transcript Dec. 15, 2011. p. 113.

²⁴ Transcript Dec. 15, 2011, p. 114: 1-25.

²⁵ It is described in Exhibits 1482 and 1483. See also Kongtorp et al <http://www.int-res.com/articles/dao2004/59/d059p217.pdf> (and other Kongtorp papers referenced in Exhibits 1482 and 1483).

²⁶ Exhibit 2092 (Kibenge, et al "Laboratory Issues, Aquatic Animal Disease, Diagnosis and Global Trends")

If ISA (and HSMI) is present in BC waters, as it appears to be, regardless of its original source, it greatly increases the risk of fish farms to wild salmon. It is undisputed that Atlantic salmon are particularly susceptible to ISA, and may readily harbor and breed the virus. Even if this virus is currently non-pathogenic to wild salmon in its current form, that form will inevitably change where concentrations of fish farms exist.

Given the difficulties of identifying new and evolving diseases in wild salmon, and the impossibility of successfully treating salmon should such diseases become virulent, it is not prudent to wait until it is too late. The only prudent course, given the difficulties of disease, are to avoid creating the risk in the first place. Fish farms must be removed from contact with significant wild salmon migratory populations.

9. Testing of Aquaculture Fish for ISA and Disease

During the main hearings, Dr. Miller testified that the aquaculture industry, as represented by the BCSFA and Mary Ellen Walling, had agreed to provide her lab samples of aquaculture fish to allow her to test for disease, BCSFA asked her to confirm this agreement.²⁷ During the recent ISA hearings, however, Dr. Miller testified that, after those hearings were over, BCSFA would no longer cooperate to provide her with samples and attempted to change the terms of any testing. In a very recent letter to the Minister, the BCSFA/Walling again states that it would cooperate to provide fish for testing to the CFIA.²⁸ With respect, this letter appears disingenuous. The past conduct of the BCSFA emphasizes that testing of farmed fish must be mandatory, legislated, and not dependent upon the cooperation or consent of the industry.

B. THE FEDERAL GOVERNMENT REACTION -- DFO AND CFIA

1. The Reaction of DFO and CFIA - Denial and Suppression

The most significant import of the evidence called December 15-19 may be to demonstrate the instinctive reaction of DFO (as well as CFIA, BC and BCSFA) to a new pathogen in wild salmon. Rather than turning their primary efforts to protection of the wild salmon, DFO and CFIA reacted against the initial reports of ISAv as a public relations and trade problem. They fell into a pattern of denial, delay and suppression, similar to those outlined earlier in the Commission Hearings for Sea-lice and the virus signature ('MRS') identified by Dr. Miller.²⁹

The reasons behind this traditional and instinctive reaction demonstrates why - for the protection of wild salmon - the science functions of DFO must be separated from the political ones, and why regulation and protection of wild salmon must be separated from the regulation and promotion of aquaculture.

²⁷ Transcript (Miller), Aug. 24, 2011, pp. 13-14, 83; also see Ex. 1734 and testimony by Clare Backman that Walling was coordinating the provision of samples by industry (Sept. 8, 2011, pp. 29-30)

²⁸ Exhibit 2081 (Letter from M. Walling to Minister, Nov. 25, 2011)

²⁹ See our previous written Final Submissions, pp. 66-75.

2. The Failure of Disclosure by the Ministers

The Ministers' two statements, dated November 9 and December 2, 2011,³⁰ were 1) misleading on the matters disclosed and under the circumstances, were 2) highly misleading in the failure to disclose the further findings of ISA in additional samples.

The only reasonable conclusion that can be drawn is that the Minister, and the Department, were more concerned with the 'political' objectives - to avoid or minimize public reaction (whether or not justified); and the 'commercial' - to avoid or minimize trade implications. As noted in a recent Vancouver Sun article:

“Government’s reaction to the news ... prompts one to fear that wild salmon rank disturbingly low on their list of priorities”.³¹

If accurate science and reliable provision of information were the driving factors at DFO, the news releases and web postings would have referred to 'presumptive positives' along with the need for verification, right from the outset. It would not have implied that Dr. Kibenge's findings at the OIE lab were contrary to 'protocol'; it would not have implied that the findings were not "sound science"; it would not have suggested that Dr. Nylund's findings were 'consistent'. It would have disclosed that the results from Moncton were "inconclusive" as a result of the degraded nature of the samples (and disclosed that Moncton had actually found one potential positive).

Even the very first statements from DFO and CFIA - October 21 and October 24, 2011 - came while CFIA was fully aware that Dr. Kibenge had found additional positives in the Fraser River system in the second batch of Weaver Creek/Harrison Mills samples sent to him by Dr. Morton.³² A second set of positive samples would, with any true scientists, give rise to pause in dismissing the original result. If 'correct information to the Canadian public' was the goal of either CFIA or DFO, the finding of a second set in the Fraser River system should have been disclosed, with whatever qualifications about its uncertainty were appropriate. In the end, this fact was disclosed through a leak by an unknown person to the media.³³

One must ask 'Why?' in relation to the lack of disclosure. This is not a virus with human health implications that could cause needless panic. The presence of a new virus in fish should cause scientific interest not political suppression. What makes the virus 'ISA' politically significant is its potential interrelation with aquaculture. Even while denying any connection between fish farms and ISA, DFO's instinctive and immediate reaction to deny the presence of ISA - continued to the hearings - can only be explained as a protective reaction toward the aquaculture

³⁰ Exhibits 2089 and 2004.

³¹ Vancouver Sun, December 27, 2011 "Fraser Sockeye Being Hung Out to Dry by Politicians".

³² Dr. Kibenge advised CFIA on October 20, 2011. Dr. Morton was not advised by Dr. Kibenge. Dr. Morton first learned of these positives - in her own samples - from the Commission the following week, and was bound by her undertaking till notified by Dr. Kibenge later. See timelines Exhibits 2141 and 2142

³³ If the leak came from a Participant, which has not been determined, which would be a breach of undertaking, Dr. Morton and the Aquaculture Coalition were not involved - Dr. Morton had no access to those documents prior to the breach. Note, had this unauthorized disclosure not occurred, it is entirely possible that the Canadian public would not have learned of the new finding until the Commission Hearings on December 15, 2011 - and potentially never, except for the Commission's decision to hold further hearings.

industry. This protective reaction clearly permeates the entire senior management staff at DFO, and demonstrates yet again why promotion of the aquaculture industry has corrupted DFO's mandate to protect wild salmon.

3. The Role of CFIA and the Beres Email

The reaction by CFIA to the positive test results raises questions about the integrity or reliability of the department, their internal culture and their ability to react to future outbreaks of (novel) diseases in wild Pacific salmon. CFIA has recently been tasked with the new job of oversight of reportable diseases in wild salmon. The appropriateness of that delegation of power must be questioned. CFIA is the agency trusted by Canadians to protect us from human health viruses and to regulate food inspection. If their reaction in this case is an example of how they would deal with new reports of harmful human diseases, we have much cause for concern.

CFIA's actions following receipt of a positive finding of ISA on October 15, 2011 do not show a concern for wild salmon. Rather, they show an immediate and highly questionable strategy of suppression of information and research. CFIA's reaction was to:

- (a) Seize all possible confirmatory samples;
- (b) Deny the results of the initial tests;
- (c) Undermine the lab that found the results (i.e. shoot the messenger);
- (d) Prevent other labs from further testing;
- (e) Reassure international trading partners;
- (f) Plan a strategy to manipulate the media.

What is significant is what they did not do - make any arrangement for immediate confirmatory sampling of wild Pacific salmon during the 2011 spawning season.³⁴

(a) *The Seizure of Samples - the so-called 'quarantine'*

CFIA's first action was to seize all of Dr. Routledge's samples. They did this through a questionable mechanism of a 'Notice of Quarantine'. However, this 'quarantine' could have been accomplished simply by requiring Dr. Routledge to keep his samples locked up and separated in his lab. It did not justify removing the samples from his possession, and taking them to Moncton.

³⁴ Surely, if botulism was found in a meat packing plant, and there was any doubt about the results, the first step would be to get more sampling from that plant. CFIA has yet to take an additional sample. Any suggestion that sampling was not feasible can be readily dismissed. Dr. Morton's first reaction upon hearing the results was, by comparison, to immediately go to take further samples from readily available spawning Fraser sockeye, which she was able to do in a matter of days. Those samples were also positive. Why did neither CFIA nor DFO make any such efforts?

Nor could this action be justified by the desire to do confirmatory testing - that could have been readily accomplished with Dr. Routledge's cooperation by taking some or a representative number of the samples, or portions of them. What CFIA did was to take all of the 2011 samples, and all portions, leaving him nothing to further confirm the results. This was either punitive, or designed to remove all evidence from his hands and centralize it in their control.

When CFIA learned that portions of the original fish had gone to Dr. Miller and Dr. Morton, they took the same action - a heavy handed removal of all of those samples from their control. They seized all samples from UBC. They also contacted Dr. Nylund in an attempt to control his information.

CFIA has since refused to return any of the samples to either Dr. Routledge or Dr. Morton, despite a request they do so. Given that CFIA purports to assert that these samples are *negative* of ISA, how do they justify any continued 'quarantine'. If there is no disease in these fish, then there is no jurisdiction for continued quarantine. Their refusal to immediately return these samples following testing must disclose their true motive.

The only possible conclusion explaining CFIA's action is a desire to suppress the truth, and prevent further inconvenient testing by independent labs which would contradict the results that CFIA desires to show.

(b) ***Denial***

The joint statement issued by CFIA and DFO on October 24, 2011 (Exhibit 2028) stated:

- "... we are concerned that proper protocols may not have been followed in the testing ... of these findings".
- That CFIA and DFO were "working to assess the results through scientifically sound and internationally recognized procedures".
- Referred to the BC program – and referred to it as a "scientifically designed surveillance program" (although it had never been validated by CFIA) and stated there had never been a "confirmed case of ISA in British Columbia".

These statements were a conscious and considered choice, and whether or not technically accurate, show a public relations attempt to minimize concern in a very misleading way. This was a 'public relations' document, not an impartial exchange of information.

This is all the more so, given that CFIA was aware of a second set of findings at the time.

That denial continued in the Ministers' statements and web postings of November 8-9, 2011, and continues today.

(c) *Undermine the Lab*

Dr. Kibenge's lab at the Atlantic Veterinary College was one of two OIE labs in the world, and Dr. Kibenge was himself a recognized expert. There was no legitimate reason to have suspected the quality of his findings (other than a pre-determined conclusion that ISA could not be present). The fact that CFIA went to interview Ms. Gagne about potential flaws in his process, and the fact that CFIA had determined by October 19, 2011 that it was going to conduct an examination of this lab shows a conscious strategy and intent to find flaws in his testing procedure before the study had every been done.

Dr. Kibenge confirmed that in the process of having that assessment done, the bias became apparent.³⁵ The final result confirms that deliberate strategy. In fairness, it amounts to nothing more than a 'hatchet-job' that finds faults, of manufactured significance, where none exist.³⁶ The same scrutiny has not been applied to the Moncton lab. This was hardly an independent assessment.

(d) *Prevent Other Labs from Testing*

Dr. Klotins Nov. 4 email (Exhibit 2104) has not been adequately explained by Dr. Klotins³⁷. Her consideration that CFIA should "advise all laboratories in Canada to not test any more samples of wild finfish for ISA" confirms the CFIA desire to control all information and testing. In context, it refers to the samples submitted by Dr. Morton. The only reasonable assumption is that Dr. Klotins was concerned to ensure that Dr. Morton would not be able to get results from any further samples.

The explanation that this involved 'chain of custody' issues does not bear any credibility (especially given that CFIA was not itself planning to test immediately). This is a clear intent to suppress new testing and new information. The effects of this strategy will be counter-productive to proper, reliable surveillance, research and diagnosis of disease. The concerns expressed by Dr. Miller that positive test results for ISA in her lab could lead to the seizure of all her fish samples and an end to her research demonstrates the very problematic effect CFIA's approach has.

35 DR. MILLER: "One of the issues that had been brought
36 up, and it had been brought up with Fish Health
37 previously and it was brought up again in these
38 discussions, is that if something is classified as
39 being ISA that CFIA will come and basically take
40 all the samples in the lab away, and as a way --
41 as their way to control for disease spread.
42 I have a very large genomics program that
43 relies on the very extensive sampling inventory
44 that we have, and I was very concerned that that
45 would be one threat if this was classified as ISA,
46 that I could lose the samples that I rely on for

³⁵ Transcript Dr. Kibenge's evidence.

³⁶ Exhibit 2075 (Draft- Infectious Salmon Anaemia (ISA) Laboratory Assessment: ISA OIE Reference Laboratory Atlantic Veterinary College)

³⁷ Dr. Klotins Dec. 16, p. 67, l 1-13; Dec. 19 p.48 l.18 to p.49 line 37

47 my genomics program.”³⁸

If CFIA was truly concerned about finding the facts, and about the health of wild salmon, more testing of more stocks by more laboratories would have been the most desirable outcome.

(e) ***Trading Partners***

CFIA notified its trading partners before it notified the Canadian public. This was the first step taken by them. Clearly the priorities of CFIA have been exposed.

(f) ***Plan a Strategy to Manipulate the Media***

Dr. Beres Nov. 9th email³⁹ justifies some examination by the Commission, and in our submission exposes both the bias and the culture of CFIA.

Dr. Beres is the Acting Regional Director of CFIA, its senior person in BC. He was the “incident co-commander”, and therefore also the senior investigator for CFIA. His email is to Dr. Cornelius Kiley, Director of the National Aquatic Animal Health Program for the CFIA, and senior media representative on the matter. We set out Dr. Beres’ email in full:

*“Con,
It is clear that we are turning the PR tide to our favour - and this is because of the very successful performance of our spokes at the Tech Briefing yesterday - you, Stephen, Peter and Paul were a terrific team, indeed. Congratulations!*

One battle is won, now we have to nail the surveillance piece, and we will win the war, also.

*Cheers
Joe”*

This email is in response to an email from Dr. Kiley, National Director, as follows:

“Concentrate on the headlines - that’s often all that people read or remember. Both the “Top Stories” and the “related articles”.

Con”

Dr. Klotins refused to answer questions before the Commission on this email, even though it was addressed to her.⁴⁰ There are no emails to suggest that Dr. Klotens disagreed with Dr. Beres, or responded in any way; nor that Dr. Kiley responded or corrected him.

³⁸ Transcript, Dec. 15, 2011 (Miller), p. 56

³⁹ Exh. 2110

⁴⁰ Transcript Dec. 19, 2011 p. 55:22 “I’m not going to comment on this email. It’s not my email, and I can’t speak to what Joseph was thinking at that time.”

Mr. Stephen from DFO was also a recipient of the email and a ‘performer’ at the press conference on November 8, 2011.⁴¹ Dr. Stephen apparently also accepted that email, without need for response.

What does this email say about the corporate culture of CFIA, and the approach to provision of information to the public?

“turning the PR tide to our favour”

“Our favour” is an interesting choice of words. Dr. Beres, given the persons addressed, clearly intends to include CFIA and DFO jointly. The use of the term “PR” refers to ‘public relations’, and the word ‘our favour’ clearly identifies a pre-determined point of view and a desire to persuade the public of that point of view. The phrase ‘turning the PR tide’ can only refer to the public and media interest in the discovery of ISA by Dr. Routledge. The intent of CFIA is disclosed as being to change public opinion, even while the facts were not yet in.

“very successful performance”

The word “performance” speaks for itself. Far from being disinterested scientists, or impartial civil servants, the participants in the press conference were performing, for a particular purpose.

“a terrific team”

Clearly, CFIA was acting in concert with DFO, in this ‘performance’ and ‘PR tide’. CFIA whose duty is to act as an impartial regulator, was not acting independently of DFO – they were a team. Any suggestion of an impartial ‘investigation’ is completely exposed as a pretence.

“One battle is won”

The concept of a “battle” confirms the bias of the CFIA investigators and participants. This was a game or a contest to them. The concept that it has been “won”, based on the headlines included in the email, shows the nature of that bias. There is no place or consideration in this ‘battle’ for the fate of wild salmon which may potentially be facing a deadly disease.

“and we will win the war also”

This phrase is forward-looking – what the CFIA intends the outcome to be. Coming from a purported investigator, it confirms a complete predetermination of the outcome. We suggest the predetermined outcome is to convince the public that ISA does not exist, and to use whatever evidence selectively or otherwise, to achieve that determination.

“now we have to nail their surveillance piece”

The Commission must carefully consider the importance of this statement, made to senior DFO and CFIA officials, and consider the time it was made. CFIA through Dr. Klotins has testified that it is now designing a Surveillance Plan. Dr. Beres has indicated that the aim of that plan will be to “win the (PR) war”. On its face, CFIA’s intent to “nail” the surveillance piece is to convince the Canadian public that ISAv does not exist. The Surveillance Plan is a sham.

This Commission can only conclude that the CFIA is not impartial, and that under its current management, neither CFIA nor DFO can be trusted to carry forward that Plan.

⁴¹ Exhibit 2030.

Dr. Beres, Dr. Klotins, Dr. Kiley and Mr. Stephen should be relieved of any duties relating to the investigation of ISA in BC or the Surveillance Plan.

4. The Appropriateness of the CFIA's Role with Wild Salmon

In any event, real questions have to be asked about why the CFIA is involved in the ISA determination in wild salmon.

The sensible reason is that ISA is a reportable disease with international implications. This legislative obligation was given to CFIA coincident in time with the transition of federal jurisdiction over aquaculture following the Morton Decision.

However, CFIA has no other general regulatory mandate over wild salmon. They have no testing mechanism in place, and in the normal course, would not have 'inspectors' with the mandate to review wild salmon as they might were they involved in inspections of commercial operations such as chicken farms or meat packing plants.

This leads to the odd situation that was highlighted when Dr. Klotens was answering questions regarding her November 4, 2011 email (Exhibit 2104), which contemplated precluding testing by other labs. Dr. Klotins testified:

“We wanted to provide the oversight on that testing, yes, because we are by legislation the final arbiter of fish health status in Canada.”⁴²

Dr. Klotins also testified that if a testing is done for someone else, which produces positive ISA results, the 'chain of custody' considerations would preclude the possibility of confirmation as a positive result.⁴³

As well, Dr. Klotins confirmed that CFIA's mandate generally extends only to "reportable" diseases. CFIA would not be involved in a new or emerging disease such as HSMI.⁴⁴

We submit there is no logical sense in a structure which divides the jurisdiction between CFIA and DFO to monitor fish health in sockeye salmon depending on the type of disease, and no logic at all in delegating to CFIA the oversight of testing for fish health status, without CFIA having the mandate for protection of wild salmon, and the resources necessary for large scale and regular testing of wild fish.

While it may make sense to have CFIA have a role in reporting to the OIE, it makes no administrative sense to assign the oversight role for testing to CFIA in the absence of a primary mandate to protect wild salmon. In the absence of that mandate, CFIA's primary concern will remain the trade implications and the protection of industry's reputation (as was shown here). That mandate will always deter 'unnecessary' testing (what we don't look for, we won't find)

⁴² Transcript, Dec. 19, 2011 p. 48:35.

⁴³ Transcript, Dec. 19, 2011 p. 48-49.

⁴⁴ Transcript, Dec. 19, 2011 p. 38:22-33.

and will continue to encourage overly restrictive testing criteria, or a process of redefinition, by which positives turn into ‘negatives by definition’.⁴⁵

The focus on testing for regulatory compliance deters any reasonable early detection and response, and even release of public information. As Dr. Jones stated: “until we can actually confirm that ISA exists, there's nothing to report.”⁴⁶ And ‘confirmation’ is determined to be the definition used by CFIA for international purposes.

We also note that the CFIA process, by which they determined they should seize all samples from researchers under the guise of ‘quarantine’, including from the DFO research lab at PBS, has an undeniable deterrent effect on effective research. The power to seize samples from bona fide researchers must be removed.

5. The DFO Reaction to Dr. Miller

There is no doubt that Dr. Miller’s temerity to test for ISA (or, more accurately, to find it) has not been popular at DFO and may be a career killer:

Dr. Miller and Stephen Stephen
 Q Let me ask you more generally, as a result of
 22 these findings of ISA, have you felt any pressure
 23 or adverse reaction from your other superiors?
 DR. MILLER: I'm pretty alienated in the department at
 25 the moment so the end result of all of this is I'm
 26 not included in any conversations about any of
 27 this so once I reported this information on the
 28 24th, nobody in the department talked to me about
 29 disease or ISA after that.⁴⁷

See also p. 110: “nobody was speaking to me at that point”.

Dr. Miller further testified that the whole department was under restrictions from talking about ISA in email.⁴⁸ Her discussion with Dr. Stephen on November 24, 2011 was obviously not an easy one. Dr. Stephen raised concern about “repercussions of the new diseases on wild fish and their price and exchange between countries, etc.”⁴⁹ Her funding was at risk.

It is submitted that the obvious difficulties that Dr. Miller has faced, including lack of cooperation from the province and from the fish farm industry in her research, will deter other DFO scientists from such lines of research. It is indicative of a culture at DFO that is adverse to research that will cause difficulties, real or potential, to the aquaculture industry.

⁴⁵ See Dr. Miller’s testimony Dec. 19, 2011 at p. 108 - She was even told that under the CFIA definition she could not call what she found to be ISAv - she had to use another name.

⁴⁶ Dec 19, 2011, p.98:32.

⁴⁷ Dec. 15, 2011, p.108:22-29,

⁴⁸ Dec. 15, 2011 p. 109:16-20.

⁴⁹ Dec. 15, 2011 p. 108: 34-36.

If the DFO lab at PBS is to continue to do its ground-breaking research in defence of wild salmon, it is necessary that the science function be given independence from the overarching political function administered from Ottawa. It is necessary the DFO culture be changed, at all levels of the organization, by eliminating the promotion of the aquaculture industry from its mandate.

We also note that DFO's preference to have testing at Moncton seems to stem from a greater control over the Moncton results, or from a greater comfort than Moncton will report negative results. Otherwise, it makes no sense that all testing of pacific salmon should go across the country for testing on the east coast. We ask the Commission to recommend that testing for viruses on pacific salmon be headquartered in Nanaimo, and that Dr. Miller's lab be given adequate funding and resources to continue that task.

C. RECOMMENDATIONS ARISING FROM THE ISA HEARINGS:

We reiterate the recommendations made in our main Final Submissions. We submit that the evidence presented during the ISA hearings emphasizes the need for each of those original recommendations.

In addition, we recommend:

1. DFO accept and carry out its mandate to monitor, research, and control disease in farmed and wild fish; and, that any surveillance or diagnostic research by CFIA not interfere with or usurp DFO's role.
2. CFIA should not be permitted the power nor have a policy that "seizes" samples from labs (DFO, OIE or otherwise independent) that diagnosis ISA or any other disease in fish. This policy has a chilling effect on fish research and diagnosis and is counter-productive.
3. DFO should immediately test for HSMI in farmed and wild Pacific salmon and should require mandatory testing of this disease in the future.
4. Surveillance of fish health (including as envisioned by the CFIA in its draft plan) should be carried out by an independent body.
5. Dr. Miller's lab should be given adequate funding to allow her important research into disease and genomics in wild and farmed salmon to continue.

ALL OF WHICH IS RESPECTFULLY SUBMITTED,
This 29th Day of December, 2011

COUNSEL FOR Dr. Alexandra Morton and the Aquaculture Coalition
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