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11/07/2011

The history of ISA virus in BC

It is not as if ISA virus just appeared in British Columbia without warning. There have been news stories written by the fish farm industry on the spread of the virus world wide and that they expected it to arrive in BC.

"How long can B.C. avoid ISA?" (Intrafish, 12th January 2009)

The Global Spread of ISA

In response to the 2009 Intrafish article a group of scientists in Canada co-signed a letter to the Minister of Fisheries (Gail Shea) asking her to close the border to Atlantic salmon eggs. Minister Shea refused to do this saying "Let me assure you that measures are in place to deal not only with ISAV but with all fish pathogens of concern." Specifically she said:

- Under the B.C. Atlantic Salmon Importation Policy, only surface-disinfected, fertilized Atlantic salmon eggs from sources certified by a Local Fish Health Officer (LFHO) are permitted for import into B.C. No live Atlantic salmon or unfertilized eggs are allowed to be imported.
- Any facility serving as a source of eggs for import into B.C. must undergo rigorous health testing under the *Fish Health Protection Regulations* before eggs can be provided to B.C. culture operations. This applies to all facilities whether within Canada or abroad. To import into B.C., a facility must be compliant with Canadian laws and regulations.

But we learned in Cohen that neither of these statements was accurate. Surface disinfection is a guideline, not a regulation and DFO is not sure if the fish farmers were doing it and the DFO Director General of Science waived the Fish Health Protection Regulations in 2004 to allow eggs from a hatchery that does not meet these regulations.

As I read through the BC fish farm vet's records I found over 1,100 reports of the Classic lesions associated with ISA virus

released from inflammatory cells of bacteria (e.g., *Listeria anguillarum*), and infection with YHVJ, but often the cause remains unknown. Consider bacteriology (if not already done). Sinusoidal congestion is one of the classic lesions associated with ISAV infections, but ISAV has never been identified in British Columbia. Sinusoidal congestion has also been described in wild fish (dab) surveyed in the north Atlantic, but

As I understand it when a country finds evidence of ISA virus they should send the tissue to the world authority on ISA virus, the OIE but this did not happen. Today we have a situation where the OIE lab has found European strain ISA virus, but Canada has decided not to recognize this diagnosis.

In 2009, Marine Harvest increased their requests to the Province of BC for private tests for the ISA virus. In April 2010, the salmon farms prevented further government testing of their fish for disease. In the same month they signed an MOU to protect themselves from viruses from other farms.

It is a big deal to Canada whether this virus is here or not because it has impact on barriers to trade. This is not an issue of simple biology, this affects companies owned by the Norwegian government and others.

While there has been no comment at all from Fisheries and Oceans in BC, the US is taking this seriously.

Every salmon hatchery has to be tested for ISA virus, because it is so contagious and we don't want to spread it. ISA virus is a very aggressive virus and when it competes with other pathogens in crowded environment it becomes increasingly virulent.

We are severely hampered in tracking this virus because there is no lab in BC to get this work done. When I ask the provincial vet, he won't tell me what test he has been doing that missed the virus.

It is difficult to understand how we could be finding ISA virus in Pacific and not in the natural host for it - the Atlantic salmon. There are many unanswered questions, but I ask that everyone pull together on this. The salmon farmers have to open their farms to OIE testing, the public hatcheries have to do the same, spawning channel fry will need to be tested and we need to look at our wild salmon carefully and test them to find out where this virus has spread to.

Thank you to everyone who is contacting me about dying or yellow salmon, I am trying to keep up with you. And thanks for the hundreds of small donations that all us to keep at this.

donations can be made on the Salmonaresacred.org site

Posted at 01:13 PM | [Permalink](#) | [Comments \(2\)](#)

11/02/2011

More European ISA virus detected in wild BC salmon

Today I received reports from two laboratories.

Dr. Are Nylund at the University of Bergen, Norway confirmed the ISA virus detection by Canadian lab, Dr. Fred Kibenge, in Rivers Inlet sockeye smolts. Dr. Nylund reports he only got a positive in one of the fish and this result was close to the detection limit for the test that he used. In the report below, the higher the value, the lower the amount of virus. He said the sample was poor quality. We are on a steep learning curve here, having never dealt with viruses, keeping the samples in a home-type freezer was not optimal.

[Download Report 021111.pdf \(22.0K\)](#)

I also received the report from Dr. Kibenge, of the World Animal Health reference lab for ISA virus in Province Edward Island, on salmon a small group of us collected in the Fraser River on October 12. Late last week results from this group of tests was leaked to the New York Times and we heard that a Coho salmon tested positive for ISAv. Now that I have the complete report we learn that, similar to the sockeye from River's Inlet, the Coho in the Fraser River was infected with the European strain of ISA virus. But we see from this report that a chinook salmon and a chum salmon also tested positive.

[Download Alexandra Morton Samples \(SOCKEYE CHINOOK and COHO\) VT10142001 OCTOBER20 2011.pdf \(45.9K\)](#)

What does this mean?

While this continues to raise the level of concern that ISA virus is going to cause significant problems in wild salmon in the eastern Pacific, a lot more work is required. Someone has to culture the virus. Once that happens we can learn how long it has been here, and exactly where it came from.

The good news is that the levels of ISA virus detected in all these salmon has been low. While the salmon in my latest collection died before spawning, it is possible that ISA virus was not the cause of their death. Because ISA virus was only detected in the gills of the chum and chinook, it is possible they were only recently infected. The chum was silver-bright and likely just arrived in the river. The Chinook was severely jaundice. Did these two fish just become infected and is that why it was only detected in their gills? Two possible sources would be salmon farms off Campbell River that they had just been exposed to on their in-migration into the river, or did they become infected by sharing the river with the Coho which had ISA virus in her heart suggesting a more system-wide longer infection period - I don't know. The Segment 6 probe is less sensitive than the segment 8 probe, so while we learned the Chinook and Chum were infected with ISA virus, we don't know what strain.

If the virus is this contagious that it infected other salmon that had just arrived into the river this does present concerns.

I am not presenting myself as an expert in ISA virus, but I feel strongly there should be no secrecy when it comes to European strain ISA virus in wild salmon. I am on a steep learning curve and feel it is essential that we move forward to:

- 1 - establish an international board to make sure testing is done in a highly and scientifically defensible manner
- 2 - establish a BC lab that can culture and test for ISA virus and report publicly

3 - test widely for the virus in the ocean, rivers and lakes and include other possible species such as herring

4 - mandate tests on every Atlantic salmon facility, especially the lake-rearing facilities by more than one lab so that no one lab bears the brunt of this and so the public can take full confidence in the tests

There has been an incredible response from many of you. So many of you have provided funds in small donations that we are able to move forward with revealing where ISA virus is hiding. Thank you. Thank you also for the people reporting back as to what is happening in your rivers and lakes. I am not at all interested in handing this over to Fisheries and Oceans, nor the Province of BC. I have asked the provincial salmon farm vet, Dr. Gary Marty several times what ISA virus test he did on all the Atlantic salmon he found ISAv lesions in. He has not answered, he had the province of BC's lawyer answer instead providing me with no information. I was hoping I could send samples to him, but I won't without knowing what test he is doing.

There is an astonishing silence from government. How is it possible they have never found ISA virus?

I think we need to step into this void and seriously apply ourselves to understanding what is going on here. I don't know why we would leave this up to DFO.

Fraser Coho infected with European ISA virus



Harrison White Spring with ISA virus





Posted at 05:00 PM | [Permalink](#) | [Comments \(7\)](#)

10/29/2011

Pestilence loosed upon BC

The [New York Times](#) did what I was not allowed to do - tell you there has been a second diagnosis of Infectious Salmon Anemia virus in wild BC salmon, this time in the Fraser River itself, the biggest wild salmon river in the world. The fish the New York Times is talking about is one that a small group of us picked up, sampled and sent to the world reference lab for the ISA virus. It was a beautiful coho salmon, in first blush of spawning colours. The salmon had navigated the river as a tiny fry, entered the sea as a fat and sassy little smolt eating everything in sight. It traveled north and west in search of the saltiness of the ocean and in doing so passed millions of European salmon in pens. Whether it got infected then or on the way home carrying the richness of a life at sea, her body shut down infected with a virus her ancestors never had a chance to prepare her for. We found her drifting dead downstream passing Harrison Mills. We scooped her up took a sliver of her heart and gills and sent them to one of the world authorities on ISA virus.

We did this because we want to know how widespread the European ISA virus is in BC waters and I don't see anyone else out there trying to map the damage. The lab never reported back to me, muzzled I suspect, but the information got out. We now have two diagnoses, 600 km apart, in two different species, of two different generations.

I don't know how no one saw this coming. We are the buffalo racing for the cliff, even as we watch videos of buffalo falling off cliffs. EVERY COUNTRY WITH SALMON FARMS has taken this path. I am so exhausted with trying to explain this to Ministers, bureaucrats, streamkeepers, environmentalists, fishermen. People just don't want to believe it. It is easier to write me off than deal with this.

Look, it is simple. Salmon farms break the natural laws and viruses, bacteria and parasites are the beneficiaries of this behaviour. If you move diseases across the world and brew them among local pathogens, in an environment where predators are not allowed to remove the sick - you get pestilence. There is no other outcome.

The reason I can see this, and where we are headed is not because I am particularly bright, it is because I have taken great care not to allow myself to become dependent on anyone's money. I am not climbing any social ladder. I don't want to be a politician, academic, or CEO of a "save the environment" company. I just want to be able to live between Kingcome and Knight Inlet and not watch it die.

Obviously I have failed in the mission that has consumed my life. I wish now I had put the blinders on and continued studying whales, because it does not matter how the fish die, whether by sea lice, or viruses, they will be dead. While the Norwegian companies who are doing this to our ocean used drugs to suppress the lice for a few years, there is no drug for ISA virus. It cannot be recalled.

Let me tell you where this is going. Government is going to hide and deny this for as long as possible, because so many of them played a role in this crime against humanity. Fisheries and Ocean Canada presided over the loss of one of earth's most generous food supplies - the North Atlantic cod. They pulled this off by not listening to their own scientists. As soon as the cod were gone, the Hibernia oils wells went onto the Grand Banks - the waters that produced so much food early sailors reported they only had to lower a basket into the sea to catch the nourishing cod. No one in DFO was held accountable even though they openly suppressed their own scientist - the late Dr. Ransom Myers who tried to warn them. As a result, they feel confident they can be reckless, careless or much worse and nothing will happen to them. So they are doing this all over again on the west coast of Canada. I think they have forgotten their children are going to suffer along with the rest of us as a result of their actions.

Government is also going to hide and deny this because the ISA virus ending up in the North Pacific is an externalized cost of world trade. In the document below, the highest offices of Fisheries and Oceans say BC has to accept Atlantic salmon eggs from a foreign hatchery that does not meet the Canadian Fish Health Regulations:[Download 2004 Fish Health1\[1\].pdf \(2176.3K\)](#)

"Failure to provide permission for egg importation may trigger a trade challenge under the World Trade Organization, because Canada's requirements are more stringent than recommended by the World Animal Health Organization.

Additionally, DFO could also be viewed as causing a competitive disadvantage of the aquaculture industry by denying them access to alternate strains"

So there you have it folks, we are road kill, an impediment to shareholders somewhere on earth who have more rights than life on earth. Our home waters were put at risk because the aquaculture industry might be at a competitive disadvantage with their own farms in Chile or elsewhere. Who thought this stuff up! It is a form of insanity.

Next, the salmon farming industry and their expert baffle-gabbers are going to tell you, Morton is wrong, the most deadly virus known to salmon did not come here in their 30 million eggs. I know this because Chile just went through this. They found a scientist in Norway to beat on, who tried to tell them ISA virus travels in the eggs. Eventually science traced the Chilean epidemic to an industry hatchery on the central coast of Norway. Chile wanted to sue Norway, but that went away quietly.

The salmon farming industry is going to say, it is not us and by the way if we just had more sites we could spread our farms apart, prevent disease and save your wild salmon. Wild salmon are market competitors for farm salmon. Have you ever heard of corporations benefiting the competition? I don't think their corporate laws allow them to. Protect life on earth and you are probably breaking corporate laws. All of you little enhancement groups accepting money from the Norwegian, just try to test your fish for ISA virus - I will bet you will be obstructed. Their money is buying your silence. Bill Proctor of Echo Bay summed it up nicely. When fish farmers offered his little enhancement society money he told them he would "rather pick shit with the chickens."

And thus the European salmon and their European virus will flourish on our silence and like the BP oil spill, the virus will pour unchecked into waters that once fed the people and everything they love about their homes on this coast. The virus will mutate and become increasingly virulent as it has everywhere else. The industry will destroy itself here as it has done elsewhere with ISA virus. Our government will make us pay to bail the fish farm corporations out, as they did when ISA virus hit eastern Canada and when the shareholders aren't making enough money on all this, they will invest in degrading another ecosystem and we will need to learn how to eat jelly fish, because jelly fish seem to like the way we change the ocean.

OR

An independent board of people could step forward who are ***all*** volunteers, free of purse strings and begin testing the entire eastern Pacific for ISA virus in a scientific manner. The fish farms have to lose the right to prevent testing of their fish. Farm salmon need to be tested so that liability for this can come out of their pockets. No one is going to fix this, but if we are really smart and use everything we know we could give wild salmon and herring a chance. All these fish farms need to close down now. The only compensation should go to the fish farm employees.

Senior DFO Pacific Region - dealing with Aquaculture need to step away from our fish now and we need to form another management body. I don't think there is any reason to try and fix what appears to be a rats nest of political disfunction. The BC vet who has been testing farm salmon for ISAv has to tell us what test he has been using.

ISA virus becomes increasingly virulent in captive environments - this means fish farms and hatcheries. Painful, I know, but read the literature. The only hope is to turn off the source, stop crowding fish together and let this thing burn through the wild Pacific like a forest fire and extinguish itself. That's it, there is no other option. But I can tell you we won't do this unless every man, woman and child who cares raises their voice in every way they legally and peacefully can in defense against this influenza-type virus.

Senior management in Fisheries and Oceans Canada and the Province of BC have to be tried in courts and be held accountable so that this stops now. One thing the Cohen Inquiry did for me was let me read the conversations between the bureaucrats we are paying to manage salmon farms and protect wild salmon. They are not protecting the public interest. I can tell you they are frantically writing and rewriting "media lines" right now. That is why we have heard nothing from the perpetrators of this. They can't figure out how paint this so they come off looking clean.

People ask me all the time "What can I do?" In answer look inside yourself and figure out the most brilliant, peaceful, powerful thing you can do, because I don't know what you are capable of. What I can tell you is we are going to live with this disease for the rest of our lives and

we bequeath it to our children. There is no going back. All that is left is the future and we can run off the cliff or look up, see where we are being pushed and refuse to go.

I am going to continue testing the fish of the BC coast with whatever funds you give me. We need to set up a lab on Vancouver Island because it is extremely expensive to ship fresh samples across Canada. Please contact us if you are seeing fish dying, sick or simply missing and we will try to figure out if its the ISA virus. info@salmonaresacred.org Here is some of the crew that found the ISA virus in the Fraser River. Thank you to Brad and Sandy for generously taking us out in your boat so we could net the dead fish, Nicole for taking notes in the pouring rain, Anissa for doing this work without reservation.

To pay for testing go to the right-hand side of the page of SalmonAreSacred.org

Or mail check to Pacific Coast Wild Salmon Society, Box 399, Sointula, BC VoN 3E0



Posted at 01:13 PM | [Permalink](#) | [Comments \(5\)](#)

10/26/2011

Industry seems to know more about the ISA virus in BC

Dear Minister Ashfield;

On October 25 you published a letter in the Vancouver Sun saying the ISA virus has not been confirmed:

<http://www.vancouversun.com/health/Before%20judging%20agencies%20investigate%20infected%20salmon/5601082/story.html?mid=510>

Below is an email forwarded to me today from a member of the public from the bcsalmonfacts.ca website. When you visit this site you see it

file:///Users/gayemsmith/Desktop/History%20of%20ISA.webarchive

is sponsored by:

The BC Salmon Farmers Association
 EWOS
 Grieg Seafood
 Mainstream
 Marine harvest
 Skretting

In the email below, the author with an email address from this site says: **“Regardless of proof, this news is of concern to BC salmon farmers. Although this particular strain of ISA is of a non-pathogenic genotype (non lethal), the Atlantic salmon is quite susceptible to certain strains of ISA.”**

Minster Ashfield, how does the industry know this is the “non-pathogenic genotype” ISA virus?

The bcsalmonfacts.ca email author seems not only assured that this is ISA virus, but also has more information about this than appeared on the Kibenge report. Is this information coming from your Moncton Lab? Please confirm whether the federal government knows if the ISAv genotype found in the two Rivers Inlet sockeye salmon is of the non-pathogenic strain.

Alexandra Morton

Date: Mon, 24 Oct 2011 19:55:25 -0700
 Subject: Re: Contact Us Form
 From: info@bcsalmonfacts.ca

Hi Toby, the goal of this website is simply to present the facts and create discussion about salmon aquaculture in BC. And yes, we believe that by giving people the chance to discuss the benefits and risks about BC salmon farming that it will improve perception of our business.

We disagree that the Cohen Commission “showed how scientists were being suppressed”. We can only assume that you are referring to Dr. Kristi Miller, and would suggest that you read the Cohen Commission transcripts on the days when Dr. Miller testified.

<http://www.cohencommission.ca/en/Schedule/Transcripts/CohenCommission-HearingTranscript-2011-08-25.pdf#zoom=100>

Regarding the ISA, researchers at Simon Fraser University allege the Infectious Salmon Anemia virus (ISAv) has been discovered in two juvenile sockeye salmon taken from the freshwater river system of Rivers Inlet area. The test results are now being verified by the CFIA.

Some activist individuals and groups have been quick to finger BC farmed salmon as a vector for this disease, but it's very important to note that BC farm-raised salmon has been thoroughly tested for the presence of the ISA virus. Almost 5000 samples have been tested over the past 8 years right up until last week. All tests have been negative – that is, no ISA has been found in BC farmed salmon.

<http://www.commissioncohen.ca/en/Exhibits.php?num=15> (exhibit #1471)

Regardless of proof, this news is of concern to BC salmon farmers. Although this particular strain of ISA is of a non-pathogenic genotype (non lethal), the Atlantic salmon is quite susceptible to certain strains of ISA. Studies have shown ISA is of low risk to Pacific salmon “Pacific salmon species are at relatively low risk should ISA spread to the west coast of North America” (Rolland and Winton 2003).

<http://www.commissioncohen.ca/en/Exhibits.php?num=15> (exhibit #1464)

So, knowing that BC farmed salmon are not the source of the virus we encourage researchers to learn more about what was potentially discovered and how, if it is actually present in juvenile sockeye, it may have spread to BC. For more information:

<http://www.salmonfarmers.org/update-suspect-findings-isa-british-columbia>

The most recent update (October 21st) from the Minister of Fisheries and Oceans Canada and Minister of Agriculture and Agrifoods Canada confirms that these initial ISA test results are now being verified by federal officials through established processes. Concerns over proper testing protocols have also been brought into question. Please see this article for more info: <http://www.dfo-mpo.gc.ca/media/statement-declarations/2011/20111024-eng.htm>

Lastly, like any good farmer, BC salmon farmers will grow our fish wherever we can viably meet the needs of our fish and our business – be that on land or in ocean. To read our statement on “closed-containment” farming, please see this:

<http://www.bcsalmonfacts.ca/forum/#!/752208e9b5>

Thanks,
BC Salmon Facts

Posted at 10:31 AM | [Permalink](#) | [Comments \(1\)](#)

10/23/2011

European ISA virus in BC sockeye - what to do?

It has been a week since it became public that the European strain ISA virus was found in 2 Rivers Inlet sockeye smolts caught last spring. To understand the significance please read [article](#) "Why this fish virus spooks scientists":

Clearly the report of European ISA virus is making some people extremely uncomfortable. The reaction by the Provincial government has been strange. The Provincial Minister of Agriculture and Lands, which used to be entirely responsible for salmon farms and since January is only responsible for renting them the sea floor, told the Legislative Assembly that the samples of the infected fish had been destroyed so there could be no confirmation tests done.

DEBATES OF THE LEGISLATIVE ASSEMBLY (Hansard) HOUSE BLUES Wednesday, Oct 19, 2011, Afternoon Sitting

Hon. D. McRae: Well, we've got another example of spinning media headlines and fearmongering from the opposition.

The reality is this. The lab results were sent to PEI. They were sent to PEI. They were not following protocol when, instead of actually contacting CFIA, they went directly to SFU, which in turn went to the media.

[1415]

When CFIA then, in turn, said, "We'd like to do our test samples," and said, "We'd like to test the fish," well, unfortunately, I'm advised that the tested-positive results at the PEI lab were destroyed, and therefore, not available to CFIA.

HSE - 20111019 PM 010/hbw/1415

The Minister was inaccurately "advised." Certainly the results were not destroyed, nor were the samples, in fact last week the CFIA took possession of not only the original 48 smolts, but also all the ones caught in the same time and place.

A few days later the CFIA and Fisheries and Oceans Canada put out a statement. Clearly the CFIA does have samples of ISA v case# 1 and 2 British Columbia.

[Download CFIA:DFO statement ISAV.pdf \(34.0K\)](#)

Canada is a member of the World Organisation of Animal Health which tracks dangerous animal diseases around the world. This Paris-based organization picked [Dr. Kibenge's lab](#) at the Atlantic Veterinary College as one of its two reference labs for ISA virus because they determined this was *the best* lab on this side of the planet. The other lab is in Norway where this virus was first identified. It is good that Canada wants to confirm these tests, but Kibenge's lab *is* the international confirmation lab.

Whoever has the samples has the opportunity to find out how long this strain of ISA virus has been in BC and could trace it to source. You see why possession of these samples has become so significant.

My concern at this point is that so many senior people in government have played a role in lowering BC's defense against this virus, that the politics will dominate, not science. The Cohen Inquiry changed our understanding of how salmon feedlots in BC have been managed. I did produce a report on what I found and it became an exhibit. [Download Morton report- What is happening to Fraser sockeye Aug 16 \(00372318\).pdf \(1857.0K\)](#)

Just a couple of pivotal events:

This is not the first time the BC Minister of Agriculture and Lands has been inaccurately advised on ISA virus. In 2007, provincial vet, Dr. Mark Sheppard, told the Minister that BC won't get ISA virus from farm salmon because BC does not import Atlantic salmon eggs.

[Download ISA Confidential BCP1001938.pdf \(491.2K\)](#)

But when Sheppard wrote this tens of millions of Atlantic salmon eggs had already been imported into BC [Fisheries and Oceans Canada](#)

We have two federal Ministers of Fisheries who have assured the public that BC was protected from ISA virus.

Shea

[Download Shea ISAV Letter March 2009.pdf \(293.9K\)](#)

AshField

[Download Initial Request for 2011-001-02306.pdf \(903.9K\)](#)

The Ashfield letter above says: "Any facility serving as a source of eggs for import into British Columbia must undergo rigorous health testing under the *Fish Health Protection Regulations* before eggs can be provided to British Columbia culture operations." I think this is inaccurate.

In 2004, the Fisheries and Ocean Canada's Director General of Science, Pacific Region requested that the *Fish Health Protection Regulations* be waived so that Atlantic salmon eggs could come from a North Atlantic hatchery that does not meet these regulations.

[Download 2004 Fish Health1\[1\].pdf \(2176.3K\)](#)

The Ashfield correspondence above goes on to say among the "measures in place to deal with ISAV" is egg surface disinfection. But egg surface disinfection is only a guideline. Below is an excerpt from a chain of DFO egg import emails November 2009 that I included in my report to the Cohen Inquiry:

Porter to Thomson and Swerdfager "....there is a small possibility that ISAV could be transmitted with reproductive fluids...However, surface disinfection of eggs, which is routinely carried outprovides assurance that ISAV will not be transmitted."

Porter to Ford "Disinfection isn't a regulatory requirement by FHPR, but strongly suggested....."

Stephen (Director Biotechnology, DFO) to Porter "The I&T committees can make this a requirement for import and set any other conditions.... That being said I'm not sure that this is happening in every case, ..."

I fully support DFO confirmation of the European strain of ISA virus in the Rivers Inlet sockeye caught in spring 2011, but I do not think it is wise to allow the federal government to do this confidentially in-house. I think it would be easier for them and all of us if we embarked on testing using the OIE lab and furthermore set up a satellite emergency lab in British Columbia in a place where this could be completely transparent.

Ground zero is the lake where the Rivers Inlet sockeye came from. There is data to suggest that the smolts that tested positive were not growing normally. Tests in Rivers Inlet should be done there right now. Due to the enormity of the risk to the North Pacific, the salmon farms have to lose their right to prohibit sampling of their fish - the most obvious source of the virus. If they are not hosting ISA virus, this should not be a problem. The provincial fish farm vet, Dr. Marty has not told us to date what type of tests he did on the Atlantic salmon he reported died of "classic" ISA virus lesions. We know from correspondence released by the Cohen Inquiry that his lab in Abbotsford was not sure if they were testing the Atlantic salmon eggs using the proper OIE certified protocol. (In the same document cited in paragraph above about waiving the Fish health Protection Regulations April 14, 2004, Animal Health Center).

We know 150,000 eggs from the uncertified hatchery were destroyed in 2005 with viral testing noted, but no pathogen named. [Download 2004 Fish Health1\[1\].pdf \(2176.3K\)](#)

And we know that 4 weeks earlier there was a shipment from the same hatchery to Mainstream. Was any special attention given to inspect those eggs?

My point in revealing all this is to suggest the smart thing to do is to set up an independent volunteer board to decide how, where and what to test and to do that testing in a lab set on neutral territory where everything is open to scrutiny and results posted publicly. This needs to begin immediately as ISA virus has a deadly habit of increasing virulence. We cannot deal with this virus with our eyes shut. I am not at all comfortable with the federal government taking all the samples concerned in this case into a DFO lab. They should split them with the international OIE lab to give us complete confidence.

However, it is already too late as they have custody of the fish. So the next step is the testing of the wild and farm salmon of the eastern Pacific.

Write to your MP and MLA if you want an open, international and best possible testing program to begin now. Farm salmon prices remain in decline according to **Intrafish** because they have over-stocked the world's oceans with farm salmon. The fish farm industry cannot

sustain another ISA pandemic. If they wipe themselves out again with ISA virus here, as they did in Chile, *everyone* will be left standing empty-handed and there will be so much ISA virus DNA in the water everyone will know where this came from.

On the stand in the last days of the Cohen hearings, senior DFO testified that they never read the provincial salmon farm disease audit data. As a result, they did not see the 1,100 reports of one or both of what the provincial vet called "classic" ISA virus type lesions. I feel we should thank the provincial vet for doing this as I suspect he is under some pressure.

DFO did not know, they know now, they have the legislative tools and we all have the salmon farm disease data. I feel this is a good point for a clean start.

I would like to thank Simon Fraser University for breaking these findings.

May wisdom prevail,

alex



Posted at 09:56 PM | [Permalink](#) | [Comments \(2\)](#)

10/21/2011

And what about the wild salmon?

The diagnosis of the European strain of ISA virus in 2 young Rivers Inlet sockeye has sparked very different responses from the US, First Nations, the Province and Canada. Both the US and Canada have Atlantic salmon farms and both have wild salmon.

In the US three senators introduced a Bill to the Senate to investigate what they are calling a "Canadian salmon virus" because it poses a threat to coastal economies and wild salmon. [press release](#)

The Union of BC Indian Chiefs states: "It is time to do away with fish farms." [Download UBCICPress ISA 102011.pdf \(137.8K\)](#)

The Provincial Government made the accusation that the original samples that tested positive had been destroyed:

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The reality is this. The lab results were sent to PEI. They were sent to PEI. They were not following protocol when, instead of actually contacting CFIA, they went directly to SFU, which in turn went to the media.

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HSE - 20111019 PM 010/hbw/1415

turn, says, "We would like to do our test samples," and said, "We'd like to test the fish," well, unfortunately, I'm advised that the tested positive results at the P.E.I. lab were destroyed and, therefore, not available to CFIA.

In the House of Commons the Minister of Fisheries gave a non-answer:

Mr. Fin Donnelly (New Westminster—Coquitlam, NDP):

Mr. Speaker, infectious salmon anemia has been diagnosed in sockeye smolts in the Pacific. This is the same virus that infected and wiped out almost 70% of farmed salmon in Chile.

We do not know the long-term effects on wild salmon or how long this virus has been present in the Pacific waters. What is the government doing to investigate this serious threat to our salmon fishery?

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Hon. Keith Ashfield (Minister of Fisheries and Oceans and Minister for the Atlantic Gateway, CPC):

Mr. Speaker, our government understands the importance of salmon for British Columbia economically, historically and culturally. That is why the Prime Minister established the Cohen Commission of Inquiry in 2009. I encourage the member to support the work of Justice Cohen and the Cohen Commission.

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Mr. Fin Donnelly (New Westminster—Coquitlam, NDP):

Mr. Speaker, the government's silence on fisheries is deafening. Instead of providing answers, there is no communication from the department and scientists remain muzzled. Conservatives are gutting the DFO and cutting funding to fisheries conservation councils. Their policy seems to be "hear no evil, see no evil, speak no evil" and they hope these problems go away. They will not.

When will the minister agree to a full and transparent investigation of this serious issue and threat to our fisheries?

[Table of Contents]

Hon. Keith Ashfield (Minister of Fisheries and Oceans and Minister for the Atlantic Gateway, CPC):

Mr. Speaker, a strategic review was an opportunity for the department to assess performance of its programs. It also allowed us to ensure that we were responding to the priorities of Canadians. We have the responsibility to spend taxpayer money prudently and where it will do the most good. We must ensure that government programs are efficient, effective and achieving the expected results of Canadians.

DFO is making steady progress in modernizing and improving our program and policy approach to meet the needs of Canadians today and in the future.

Just for the record; the Cohen Commission hearings are closed now and so if Justice Cohen is going to consider the report of the European strain of ISAV by the internationally appointed ISAV reference lab, as the Minister of Fisheries seems to suggest, the Inquiry would have to be re-opened.

Regarding what the Provincial Minister of Agriculture and Lands said about the samples being destroyed, that is not the case.

The original 48 fish that were tested and the other fish taken at approximately the same time from Rivers Inlet were provided to the Federal Canadian Food Inspection Agency as per their request.

I don't know what to say about the response by our highest levels of government, to diagnosis by the World Animal Health Organization Lab reference lab for ISA virus but here is what I think needs to be done.

1. Rivers Inlet sockeye smolts in the lakes right now need to be tested for the ISA virus.
2. We need to see the provincial salmon farm vet records on the tests he did for this virus in the Atlantic farm salmon to find out if it was the same test as found the virus in the sockeye. There are many types of PCRs that can be done on different segments of this virus. Did he use the same tests as the reference lab?
3. We need to sequence the DNA of the ISA virus found in the sockeye and see how long it has been in BC and what strain of Atlantic salmon it came from.
4. There needs to be an emergency World Organisation for Animal Health lab set up in BC to conduct widespread testing of farm and wild salmon and herring, so we can better understand how to deal with this.

The Canadian and Provincial government response is not useful and is wasting precious time. It seems pretty straight forward to me. If you care about wild salmon, you need to pressure your government reps everyday to move past the deny, delay tactics they have made to date and figure out how widespread ISA virus is, and turn off the source.

This discovery of ISA virus is an international disease event on two counts, 1 - it was found in a new species, and 2 - it was found in a new location.

This is a highly successful virus, if we are going to stop it from spreading, as it ash done in every other country we have to BE REALLY SMART about this! The response above of the two ministers responsible is nothing short of tragic. The lab that made the diagnosis in BC was the same lab as made the diagnosis in Chile in 2007 - and in that case ISAV went on to kill millions of salmon.

[Email Minister McRae](#)

[Email Fisheries Minister Ashfield](#)

Posted at 08:21 PM | [Permalink](#) | [Comments \(0\)](#)

10/19/2011

Dear Minister Ashfield - Immediate response to ISA virus required

October 19, 2011

Minister of Fisheries and Oceans

Ottawa

Min@DFO-MPO.GC.CA

Dear Fisheries Minister Ashfield:

The European strain of Infectious Salmon Anemia virus (ISAV) has been found by the World Organisation for Animal Health (www.oie.int) in wild BC sockeye salmon.

Because this influenza-type virus is highly infectious and lethal to salmon it is an internationally reportable disease, similar to hoof and mouth disease, Anthrax etc. U.S. fish may have been exposed when they entered BC waters to feed, as is well documented and known to occur, and when BC salmon mingled with Alaskan stocks in the open Pacific. No one knew that sockeye could be infected with this disease so we are facing a highly uncertain situation that demands immediate and effective response.

Fisheries and Ocean Canada (DFO), needs to understand that, as a result of Canada's prodigious production of documents to the Cohen Commission, many of us now have a good understanding of the traditional DFO disease response mechanism and it is inadequate.

May I suggest that that DFO not waste time trying to defend past statements and behaviour and move on quickly to do everything possible to prevent a North Pacific ISAV pandemic. Here is my recommended course of action:

1. Because this is the European strain of ISAV it most likely came from the 30 million Atlantic salmon imported into BC. The provincial fish farm Animal Health Centre lab needs to publicly report what type of PCR they have been using to test for ISAV so that the OIE and other scientists can evaluate the next step in farm salmon testing. Their PCR data on ISAV has to be made available.
2. The salmon farms closed their farms to government testing in April 2010 - this has to be revoked to allow independent statistically valid testing.
3. Immediately stop farm salmon processors from dumping blood water in the ocean.
4. Close the border to Atlantic salmon eggs.
5. An international volunteer team of scientists needs to draw up the optimal testing plan for both wild and farm salmon, including inventory of samples that may already exist, and this investigation has to be public. Corporate laws around secrecy have to be come second to the public interest.
6. An ISAV testing lab has to be set up/designated on Vancouver Island so that fresh optimal samples can reach a lab, with reference samples continuing to go to Dr. Kibenge as he is a world designated lab for ISAV confirmation, he diagnosed the Chilean outbreak.
7. The federal government must release emergency funding for this testing program.

Please understand suppression of this will be impossible this. If ISAV is widespread many scientists will have access to the virus. ISAV is traceable to the source broodstock, and we will also learn how long it has been in the Pacific.

I am hoping the federal government will come out with a strong, scientifically sound response that we can all support and work with. ISAV has proven itself extremely capable of spreading, it does mutate into increasingly virulent strains, and no country has ever eradicated it because they have not turned off the source. This a doubly unprecedented situation as it was first detected in wild, not farmed salmon, and is a virus that has never been loose among wild Pacific salmon.

No one can possibly know the out-come, but we do know it would be best to do everything we can to stop its spread through the North Pacific right now. This will likely end up in the Supreme Court of Canada and all parties might want to consider their actions in light of that.

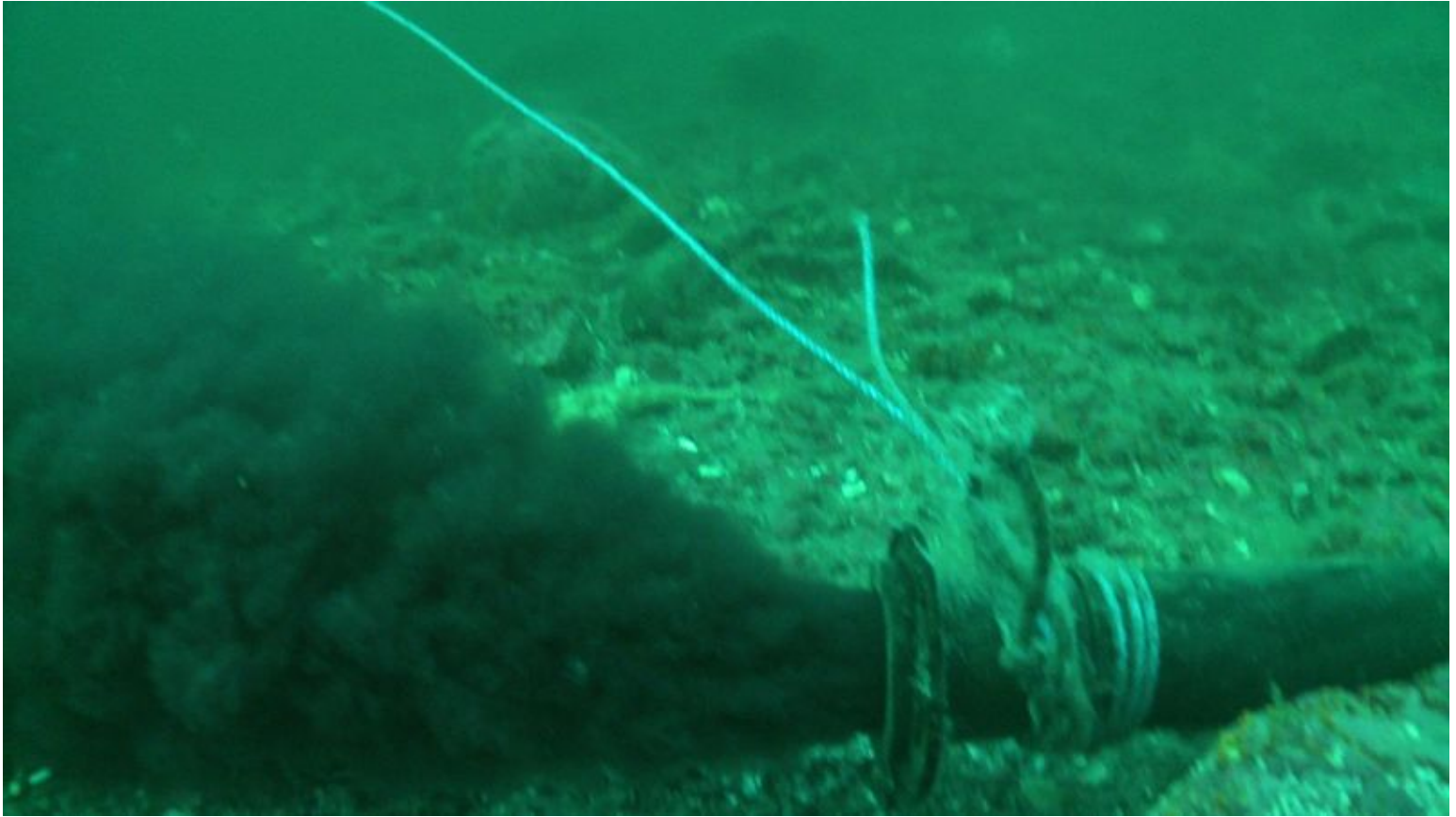
The reason I am writing this is because the response to date has not mentioned the wild salmon of BC. Canada is questioning the results by the OIE reference lab; the Canadian government is already making statements to protect the salmon farms.

We make horror films about viruses because they are so dangerous. Please Minister Ashfield do the right thing here and give British Columbia a fighting chance against the European strain of ISAV.

Respectfully,

Alexandra Morton
gorbuscha@gmail.com

Fish farm processing plant effluent into Discovery Passage (Fraser sockeye migration route)



Posted at 04:33 PM | [Permalink](#) | [Comments \(0\)](#)

10/17/2011

Lethal Atlantic salmon virus found in BC sockeye

Infectious Salmon Anemia virus has been found in two young sockeye salmon. Sheer reckless, negligent behaviour has loosed a highly infectious fish farm influenza virus into the North Pacific. I have been told over and over by industry and government that this could not happen, but they were wrong. No one has any idea what Infectious Salmon Anemia Virus (ISAV) will do in the North Pacific. We were told that it could not infect Pacific salmon, that enough tests had been done to assure us that it was not here and would not get here. Well here it is in two young sockeye. Are they the only 2 salmon in the North Pacific with ISA virus, or are they among 100s, or millions? No one knows yet. Government and the salmon farming industry is at best dangerously incompetent. Humanity is well aware that moving viruses around has caused enormous misery and death. We make horror movies about this, and yet there is no sign of a learning curve here. We have put a highly infectious marine influenza virus into the ocean we depend on. So incredibly foolish.

In May, Dr. Rick Routledge of Simon Fraser University noticed the Rivers Inlet sockeye smolt out-migration was an exceptionally small run. Rick has been studying these sockeye to figure out why the Rivers Inlet sockeye, once Canada's second most prolific sockeye salmon run has declined to an average over the last 5 years of less than 1% of its historic abundance. When we talked this spring I suggested testing for ISA virus, just to rule it out.

The results came back last week; 2 out of 48 smolts were infected with the EUROPEAN STRAIN OF INFECTIOUS SALMON ANEMIA VIRUS (ISAV). The shock of this diagnosis remains.

The test was done by Dr. Fred Kibenge of the lab designated as the OIE reference lab for ISAV.

The ISA virus has appeared everywhere that industrial Atlantic salmon farming has moved in. It killed 70% of the farm salmon in Chile in 2007, but there are no natural wild salmon in Chile. It was found in 1984 in Norway and is now in Scotland, Ireland, Faroe Islands, Eastern Canada, and Chile. No country has ever gotten rid of it, probably because they never turn off the source. This is the first time ISA virus has been set loose into wild Pacific salmon populations. That it was found in a Rivers Inlet sockeye smolt 100km away from the nearest salmon farm is ominous. Is it everywhere? Is it in herring, does it infect oolichans? No one knows.

At the Cohen Inquiry I heard government, scientists and industry say Infectious Salmon Anemia (ISAV) is not in BC, that they have never detected in BC salmon farms. If the Norwegian companies who brought nearly 40 million Atlantic salmon eggs into BC want to quibble about this diagnosis they can take it up with the 87 year old [OIE](#), based in Paris, who designated Dr. Kibenge and the PEI Atlantic [Veterinary College](#) as the ISAV reference lab for this side of the planet.

ISAV is an internationally tracked virus and should appear [here](#) alongside Anthrax, West Nile Fever, Foot and Mouth.

As I have written before in this blog, Canada has failed to maintain a line of defense against ISAV. There is no place on the Fish Health Certificate that must be signed by foreign hatcheries to report ISAV. Even when the European strain of the virus began spreading in Chile, Canada did not close the border to eggs, government did not even make it a reportable disease if it occurred on a fish farm, even though it is an internationally reportable disease. This does not seem to have worked well for us. This is the first time ISAV has been first reported in a wild salmon, rather than farm.

In 2004, our [Director General of Science](#) waived the Canadian Fish Health Regulations so the Norwegian operators in BC could import eggs from a foreign hatchery that does not meet these regulations. [Download 2004 Fish Health1\[1\].pdf \(2176.3K\)](#) When an entire shipment of eggs from this hatchery were destroyed in 2005, there is no evidence government checked on a shipment that had entered Canada 4 weeks prior. [Download 2004 Fish Health2\[1\].pdf \(89.9K\)](#)

When I saw over 1,100 reports of ISAV-like lesions in the provincial fish farm vet reports given to the Cohen Inquiry I notified the Canadian Food Inspection Agency. According to documents submitted to the Cohen Inquiry the sum total of their response appears be a call to the companies to ask if they have ISAV, there was no record of verification. [Download CFIA Decisions.pdf \(157.1K\)](#)

These are some of the many reports of ISAV lesion made by the Provincial fish farm vet Dr. Gary Marty:

[Download BCP002975 Case# 10-1442.pdf \(1741.8K\)](#)

[Download Case# 09-109 1 - 50 BCP002971.pdf \(501.0K\)](#)

This report was made to the CFIA:

[Download CAN185775.pdf \(241.3K\)](#)

As it turns out, it was not possible for me to inspire government to protect the North Pacific from the Infectious Salmon Anemia Virus. No country has ever gotten rid of it because they have never turned off the source. If it is lethal to fish in the North Pacific, maybe it will extinguish itself after rampaging through populations, but not if we leave the tap on. This is like the BP oil spill, we heard at the Cohen Inquiry that a single farm with an epidemic can shed 60 billion viral particles an hour.

"Farmed salmon prices are in hopeless 'freefall'" (Intrafish, October 14, 2011) because they have over-produced and their fish are not worth much. So we have put our entire coast, as well as, Washington State and Alaskan waters at risk for a failing corporate scheme. It is unconscionable that Fisheries and Oceans Canada and the Province of BC have done this to us.

If wild salmon mean anything to the people on the west coast of this continent, a volunteer international epidemiological team has to be formed immediately. The findings cannot be secret this virus can be tracked. ISAV can be tracked to the source hatchery.

Because this ISAV is the European strain, the only reasonable source is the tens of millions of Atlantic eggs brought into BC. Since the federal and provincial governments and the industry don't seem to know anything about this and the infected sockeye were 100 km from the nearest salmon farm, the infection could have come from any salmon farm on this coast.

We can do one of two things:

Nothing and watch this virus live up to its reputation

take the Atlantic salmon, the only known ISAV carriers in the North Pacific, out of the ocean

It was Simon Fraser University that made the discovery, an non-government, non industry organization.

Government needs to step away from the fish and allow people who actually want wild salmon to figure out how to deal with this situation. The salmon farmers must not be allowed the right to prohibit testing of their fish any longer. This is an international disease event. There needs to be a volunteer board to track this virus.

We make horror films about viruses – think of the ocean and all the life in it. What have we done to them? We are an out of control species making bad decisions and unless we take this thing by the horns and seriously deal with it, we don't deserve wild salmon

You can [donate](#) and help us pay for the samples we have sent in for testing (donate button on right side, will be titled "adopt-a-fry")

You can sign a statement [here](#)

Posted at 05:26 AM | [Permalink](#) | [Comments \(2\)](#)

10/11/2011

My Report to Cohen - There is a serious issue with disease

Last Friday, October 7, Justice Cohen ruled, against the objection by the lawyers for Canada and the Province of BC, to allow my report to become an Exhibit of the Cohen Commission. So I can now share it with you. You can download it at bottom of this text.

In this report I pulled together what people in government have been saying about the Fraser sockeye and the pattern is incredibly clear. The Fraser began dying when Chinook salmon farms with Salmon Leukemia virus were put on their migration route in 1992. When these Chinook farms were removed in June 2007, the next generation of Fraser sockeye that went to sea came back in 2010 - this was the first reversal in the decline since the farms appeared. DFO did experiments in the 1990s to see if sockeye could catch this disease from the farmed Chinook. 100% became infected and DFO did nothing to protect them.

When DFO research scientist, Kristi Miller, recently found the Fraser sockeye are dying of a virus that resembles Salmon Leukemia, DFO prevented her from attending meetings on the sockeye crash, would not let her speak to the media and we learned in her testimony at the Inquiry that DFO has not given her any funds for further sockeye research.

Also in my report is the extremely disturbing records from the Province of BC of over 1,000 reports of the symptoms of the exotic Atlantic salmon virus Infectious Salmon Anemia (ISA)! The provincial vets never reacted to their own reports with proper testing, even though they report farm salmon dying of the lesions associated with this disease. This Atlantic salmon virus has spread around the world in salmon farms, but Canada does not require imported eggs to be disinfected and has no place on the import certificate for foreign hatcheries to report this virus.

I have written to the Minister of Fisheries repeatedly about the extreme risk this virus poses to BC wild salmon. Many other scientists joined me in signing one of these letters, but ex-Minister Gail Shea refused to close the border to eggs, or test all the salmon farms according to DFO's own Manual of Compliance or even accept the virus can travel in the eggs.

The DFO Director General of Science waived the Canadian Fish Health Protection Regulations so Atlantic salmon eggs could be imported from a foreign hatchery that does not meet Canada's regulations.

In the summer of 2009 Marine Harvest began requesting repeated tests for the Atlantic salmon virus (ISA) from the Province of BC. In April 2010, the fish farms refused the Province of BC further access to their fish for disease testing and BC went along with this. At the same time the Norwegian companies in BC signed a Memorandum of Understanding between themselves to limit viruses from spreading from one company to the next. The governments of Canada and BC are not part of this agreement, nor are the wild salmon migrating past. On the stand no one in the federal government could tell us what kind of sampling is going on currently in salmon farms and there was no record of a government farm disease audit in the Cohen documents after April 2010.

If the Atlantic Infectious Salmon Anemia virus is in British Columbia, I hope the salmon farmers and the governments of BC and Canada are insured for any impact this could have on wild salmon and the people of this country. Of course no amount of money can bring the fish back, but maybe we could react fast enough to salvage something. However, you will see a Province of BC vet tries to tell a Minister this virus could only come from the wild because there have been no salmon eggs imported into BC. When he wrote this in 2007 over 30 million eggs imported had been imported since 1986. I don't know how he could misinform the Minister of Agriculture and Lands who was in charge of regulating salmon farms at the time and guide his thinking on this disease.

Most chilling in my report is the final email regarding a conversation between Canada's Senior Trade Commissioner with a CEO of one of the Norwegian salmon farm corporations operating in BC - Mainstream (Cermaq). They discuss difficulties with First Nations, lack of skilled labour in remote communities of BC and a request from Cermaq for more government support in countering the myths and disinformation being spread about their industry.

If there has been a myth, it was that government was protecting wild salmon. I could find no evidence the Province of BC or Harper's

Government ever gave wild salmon top priority.

[What Has Been Happening to the Fraser Sockeye](#)

P.S. Sandy or Brad who I met on the river please email me at gorbusha@gmail.com



Posted at 02:38 PM | [Permalink](#) | [Comments \(2\)](#)

10/06/2011

Open Letter to Fisheries and Oceans Canada

Dr. Laura Richards

richardsl@pac.dfo-mpo.gc.ca

Director General, Science, Pacific Region

Fisheries and Oceans Canada

Vancouver, BC.

Dear Dr. Richards:

I am writing to ask for your progress report on the thousands of silver-bright sockeye and now Coho that are floating dead down the Fraser River tributaries feeding into the Harrison River. People on the river say this has been ongoing since early August reaching upstream of Harrison Lake and estimate 100,000 sockeye have died in this area without spawning.

When I was on the stand at the Cohen Inquiry the lawyer for Canada prevented me from presenting the information I gathered on disease from the 500,000 government documents provided to the Inquiry. Among other things, I found that you appear to have had a direct role in waiving the Fish Health Protection Regulations for exotic egg imports on request from the Norwegian salmon farmers. It looks like you are attempting to suppress information that your scientist, Dr. Miller found suggesting that the Fraser sockeye salmon have been dying of a virus since 1992, which is exactly when salmon feedlots were placed on the Fraser sockeye migration route. I was prevented from telling Justice Cohen that your scientists do not have the support they need from you to do the required sampling to figure out why very large numbers of Fraser sockeye are dying just before spawning. They have written numerous emails on this that I read as a participant of the Inquiry. I also read their frustration with you trying to keep this from the public.

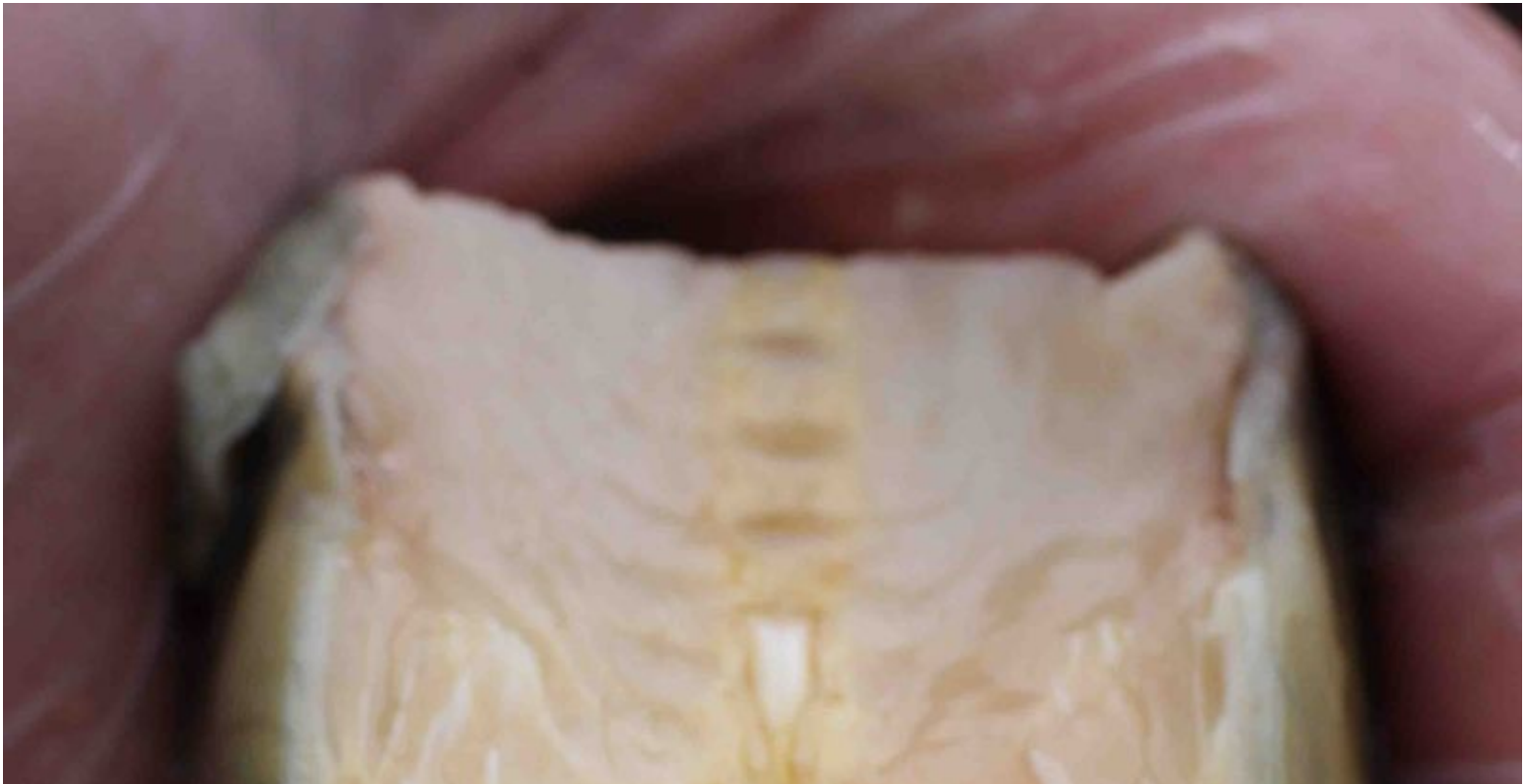
I was prevented from presenting the evidence there may be brain tumors in these dying sockeye and there are strong the linkages between the dying sockeye and a disease in farm salmon caused by Salmon Leukemia.

On the stand you informed us that you do not review the farm salmon disease records, even though one of your scientists published in a top scientific journal that a form of fish cancer may be in our sockeye and this cancer has been reported by other DFO scientists in farm salmon

in the journal CANCER RESEARCH. <http://cancerres.aacrjournals.org/content/52/23/6496>

I am now examining the brains of these dying salmon myself, because I have lost all confidence in DFO. On my trip up the Fraser River two days ago I also found four yellow pink salmon.







Yellow pink salmon, even cartilage in their head is yellow

While you testified that you have not read the salmon farm disease records, I have read every line and note that the Provincial vet Dr. Gary Marty is diagnosing a form of jaundice in farm salmon that he states is similar to a virus found in Coho in Chile, he cites a paper by P.A. Smith et al 2006. I want your report on these jaundice farm salmon and the jaundice pink salmon DFO must be aware of – why are they yellow, why are there so many of them, is this the Chilean virus Dr. Marty notes and how would such a virus get here? We know some of the fish farmers in BC also have operations in Chile. Funding provided by the public is currently being used to study jaundice that is killing

farm Chinook salmon. Please send a progress report to us.

Dr. Richards there is something very wrong here, the salmon are dying and DFO is suppressing their own people who are closest to figuring this out. I am forwarding this letter to the over 20,000 people on my mailing list and we want your report on what DFO is doing and who is doing it. We want the diagnosis on the yellow salmon. We want to know if we are getting a side order of brain tumour in the salmon we are eating. Please give us a timeline on receiving this information and when we can expect updates from you.

Who is providing samples to Dr. Miller's lab of the dying sockeye? Miller is the only DFO scientist working on the sockeye I trust after observing so many of you on the stand at the Cohen Inquiry. Please let us know how much funding you have provided to Miller's lab for further work on why the Fraser sockeye salmon are dying, do they have a virus, what is the virus, where is it coming from and is it causing brain tumours?

Thank you,

Alexandra Morton

Posted at 03:59 PM | [Permalink](#) | [Comments \(6\)](#)

[alexandra morton](#)

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