



Fish Health Section



The official link to the FHS website is: <http://www.fisheries.org/units/fhs>

LETTERS FROM THE PRESIDENT

MEETINGS AND WORKSHOPS - FOR INFORMATION ON THESE AND OTHER UPCOMING MEETINGS GO TO THE WEBSITE:

<http://www.fisheries.org/units/fhs/meeting.php>

AQUAVET® I – see attached AQV1_announcement

COURSE ANNOUNCEMENT

May 27 to June 23, 2012

We are pleased to announce that AQUAVET® I – An Introduction to Aquatic Veterinary Medicine will be offered by AQUAVET® in 2012. The course is designed for veterinary students and veterinarians who have an interest in applying their veterinary training to aquatic animals. The course will be presented again this year at Roger Williams University in Bristol, Rhode Island. Bristol is a picture perfect New England town about 20 minutes from Newport. The course dates are May 27 to June 23, 2012 inclusive. Arrival and the start of classes is May 27th and departure is June 23rd. The fee for the 4-week course INCLUDES tuition and room and board. It is \$1,975 for full-time veterinary students and \$3,375 for veterinarians. Through the generosity of a program benefactor, a \$200 scholarship will be applied to partially offset the fee for all full-time veterinary students resulting in a net tuition of \$1,775 for the accepted full-time veterinary students this year.

In addition, we anticipate a limited number of summer research opportunities during an 8-week period following the course. Students selected as AQUAVET® Summer Research Fellows pay no tuition for the 8 weeks of the research program itself and will be reimbursed for room and board expenses. In addition, research students will receive a stipend of \$1500 for the research period. At least one Fellowship will be restricted to aquaculture related projects.

Detailed information about the course is available on our website. Applications for admission are due by January 14, 2012. The application is available on our website.

You will receive an e-mail acknowledging receipt of your completed application.

Please visit our website at: www.aquavet.info

AQUAVET® II - see attached AQV2_announcement

COURSE ANNOUNCEMENT

May 27 to June 9, 2012

We are pleased to announce that an advanced course in Comparative Pathology of Aquatic Animals will be offered by AQUAVET® in 2012. The course will be oriented toward the pathology of vertebrates and invertebrates commonly used as laboratory animals, encountered in display aquaria, and of importance to aquaculture enterprises. Representative species for each category will serve to demonstrate features of commonly observed diseases. The course is designed for veterinary students and veterinarians who have participated in AQUAVET® I or have had comparable experiences in aquatic animal medicine and pathology.

The course will be presented again this year at Roger Williams University in Bristol, Rhode Island. Bristol is a picture perfect New England town about 20 minutes from

Newport. The course dates are May 27 to June 9, 2012 inclusive. Arrival and the start of classes is May 27th and departure is June 9th. The fee for the 2-week course INCLUDES tuition and room and board. It is \$1,125 for full time veterinary students, and \$1,850 for veterinarians. In addition, we anticipate a limited number of summer research opportunities during an 8- week period following the course. Students selected as AQUAVET® Summer Research

Fellows pay no tuition for the 8 weeks of the research program itself and will be reimbursed for room and board expenses. In addition, research students will receive a stipend of \$1500 for the research period. At least one Fellowship will be restricted to aquaculture related projects.

Detailed information about the course is available on our website. Applications for admission are due by January 14, 2012. The application is available on our website. You will receive an e-mail acknowledging receipt of your completed application. Please visit our website at: www.aquavet.info

JOBS

Research Scholar

Soon an official advertisement will be posted for a full-time research scholar appointment at the Department of Fisheries and Wildlife, Oregon State University. Hence, this is an unofficial notification to initiate interest and conversations about the position. We anticipate the position will start in late Spring 2012.

The primary research focus is a multidisciplinary investigation of the causes of prespawning mortality in Chinook salmon in the Willamette River. Prespawning mortality in the river is very high in some years, and ongoing research to determine the causes is being funded by the U.S. Corps of Engineers to a team of researchers at Oregon State University (Drs. Carl Schreck, Michael Kent and James Peterson) and University of Idaho (Dr. Chris Claudill). We have been documenting the pathogen burden, histological changes, and field parameters in prespawn mortalities and successful spawners for the last three years, and have already observed interesting and informative patterns. As seen in other rivers, the dead and dying fish exhibit massive infections with a variety of parasites and other pathogens, but their precise role in prespawning mortality has not been resolved. The ultimate goal of this research is to develop models for use by management agencies to evaluate the effectiveness of alternative management strategies for reducing prespawn mortality in Chinook salmon.

The successful candidate will be stationed at OSU at Nash Hall in the Department of Fisheries and Wildlife. Applicants should have the ability to and experience in modeling animal population dynamics and species interactions, such as host-parasite and predator prey-relations, and interest in the application of basic research to fisheries conservation and management decision-making. The successful candidate will work with an interdisciplinary team of researchers and resource managers from state and federal agencies to develop an integrated, decision support program for managing Chinook salmon. The position will primarily involve data analysis and modeling, with limited laboratory research and field research. Mentorship will be provided by Dr. Peterson (fisheries biologist and population modeler), Dr. Kent

(parasitologist and fish pathologist) and Dr. Schreck (fisheries biologist and physiologist), all who are housed in Nash Hall.

Applicants must have completed all the requirements for their doctoral program (PhD or equivalent), with demonstrated research accomplishments, and publications in the primary research literature. Commensurate with the multidisciplinary nature of the project, we are seeking applicants with a background in several of the following areas: modeling, statistics, parasitology, epidemiology, ecology, physiology, and fisheries biology, with an interest in integrating these disciplines. Excellent command of the English language, quantitative analytical skills, and excellent written and verbal communication skills are required.

We look forward to discussing this position with interested candidates, and you are welcome to contact us as follows:

James Peterson (541-737-1963; jt.peterson@oregonstate.edu)

Carl Schreck (541-737-1961; Carl.Schreck@oregonstate.edu),

Michael Kent (541-737-8652; Michael.Kent@oregonstate.edu).

Appointment: Appointments will be intended for a term of one (1) year, with the possibility for renewal, based upon a satisfactory performance review and the annual nature of federal funding. Salary is around \$ 40,000, commensurate with qualifications of the successful applicants, and full benefits will be provided.

OPPORTUNITIES

OIE COMMENT PERIOD - http://www.aphis.usda.gov/import_export/animals/oie/

Dear Aquatic Animal Health Stakeholders,

The World Organization for Animal Health (OIE) Aquatic Animal Health Standards Commission met in October 2011 to discuss amendments to the Aquatic Animal Health Code (Code). Attached are thirteen (13) individual documents extracted from the October 2011 report resulting from that meeting. I am sending the complete set to you for distribution to whomever you feel should see, review and comment on them. You may share them all or select specific individual documents for sending to the appropriate commodity/industry groups or other interested entities.

When submitting comments back to my office, please note the following due date and procedures:

- Due date of December 29, 2011 for comment submission on all of the attached documents to Paul.G.Egrie@aphis.usda.gov

-If you do have comments on any of the attached documents, please utilize the following procedures in their preparation:

- a) identify the specific Article and text you are commenting on
- b) indicate the changes you believe should be made
- c) provide suggested language that should replace the changes you are making (if any)

d) provide a scientific justification or rationale for such changes

Of the 13 documents the following 10 are existing chapters in the Code that have been amended so please focus only on the changes. The OIE shows the proposed changes as text that is double underlined (new text) or text that has a strike-through (deleted text). Please comment only on these proposed changes. I will consider comments to other sections that are significant or important.

- 1) Glossary
- 2) Criteria for Listing Aquatic Animal Diseases
- 3) Assessment for listing of Infection with Ostreid Herpesvirus-1 (including OsHV-1 μ var) as an emerging disease
- 4) Diseases Listed by the OIE
- 5) Import Risk Analysis
- 6) Welfare of Farmed Fish During Transport
- 7) Welfare Aspects of Stunning and Killing of Farmed Fish for Human Consumption
- 8) Killing of Farmed Fish for Disease Control Purposes
- 9) Disinfection of Salmonid Eggs

10) Infectious Salmon Anemia

Of the 13 documents the following 3 are new chapters to the Code so please feel free to comment on any part. **Note: I have not attached these, please go to the website, or contact Gary (or myself).**

- 11) Communication
- 12) Monitoring of the Quantities and Usage Patterns of Antimicrobials Used in Aquatic Animals
- 13) Development and Harmonization of National Antimicrobial Resistance Surveillance and Monitoring Programmes for Aquatic Animals

We will also post the chapters for comment on the following Veterinary Services OIE web page within a few days **Note: I have not attached these, please go to the website, or contact Gary (or myself).**:

http://www.aphis.usda.gov/import_export/animals/oie/

Always feel free to contact me if you have any questions, and also feel free to share these documents with others whom you believe would provide valuable input.

Thanks for your participation!

Gary

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P. Gary Egrie, VMD

Aquatic Animal Focal Point for OIE Activities  
Farm Animal Welfare Coordinator  
USDA APHIS Veterinary Services  
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## **ISA NEWS**

### **BACKGROUND ON CURRENT FINDING – note: this background is provided by Dr. Jill Rolland, USDA APHIS and Secretary/Treasurer of the FHS**

On Monday, October 17, 2011, Professor Rick Routledge from Simon Fraser University in British Columbia announced recent results from a long-term sampling effort of wild Pacific sockeye salmon in the Fraser River (Rivers Inlet) on the British Columbia central coast as part of an investigation of recent population declines. Two out of 48 smolts sampled earlier in 2011 tested positive for infectious salmon anemia virus (ISAV) using a real-time (quantitative) PCR test at the Atlantic Veterinary College (AVC) in Prince Edward Island (an OIE reference lab for ISAV testing). An additional finding in adult coho salmon was reported on Friday, October 28th. The tests identified a European strain of ISAV. The quantitative PCR assay is not a validated diagnostic test for ISAV testing. To confirm a case of ISA, the OIE (World Organization for Animal Health) recommends viral isolation on cell culture followed by standard RT-PCR confirmation of the virus identity, or clear evidence of clinical disease in animals from which the positive sample is taken. Neither the sockeye or coho salmon sampled were exhibiting any clinical signs consistent with ISA.

The competent authority for animal health in Canada, the Canadian Food Inspection Agency (CFIA) has not reported this case of ISA to the OIE as the detection has not been confirmed by the aforementioned criteria. CFIA, as the competent authority, is conducting a follow-up investigation into the ISAV detection. CFIA has received the diagnostic samples that were submitted to AVC and is obtaining additional fish from Simon Fraser University's sampling efforts. CFIA will be testing the samples using a PCR diagnostic test that differs from the AVC test, but that has been validated by the Canadian National Reference Laboratory (NRL) to screen for ISAV.

APHIS, in cooperation with NOAA, FWS and State and Tribal entities, is currently engaged in a preliminary analysis of surveillance needs. The goal of this analysis is to evaluate gaps and extent of our current knowledge about the probability of ISAV in the Pacific Northwest.

Jill

Dr. Jill B. Rolland  
Director

Aquaculture, Swine, Equine & Poultry Health Programs  
USDA APHIS VS  
4700 River Rd., Unit 46  
Riverdale, MD 20737  
301-734-7727

**CLARIFICATIONS – Note: these clarifications were provided by Dr. Pierre DeKinkelin**

It was stated in your mail of October 20:

6. "All published evidence suggests that Pacific salmon are resistant to ISA virus infection; controlled laboratory studies have not been done with sockeye salmon and ISAV, but Pacific salmon species tend to respond similarly to fish diseases."

Nevertheless, one decade ago, 3 articles reported about ISAV (American genotype) infection in coho salmon in Chile. They were:

Kibenge FSB, Garate OM, Johnson G, Arriagata R, Kibenge MJT, Wadowska D, 2001a. Isolation and identification of infectious salmon anaemia virus (ISAV) from coho salmon in Chile. *Dis. Aquat. Org*, 45, 9-18.

Kibenge FSB, Kibenge MJT, McKenna PK, Slothard P, Marshall R, Cusack RR, McGeachy S, 2001b. Antigenic variation among infectious salmon anaemia virus isolates correlate with genetic variation of the viral hemagglutinin gene. *J Gen Virol*, 82, 2869-2879.

Kibenge MJT, Opazo B., Rojas AH, Kibenge FSB, 2002. Serological evidence of infectious anaemia virus (ISAV) in farmed fishes, using an indirect enzyme-linked immunosorbent assay. *Dis Aquat Org*, 51, 1-11.

The first one dealt with an outbreak of clinical infection.

Isolation and identification of infectious salmon anaemia virus (ISAV) from Coho salmon in Chile

Frederick S. B. Kibenge<sup>1,\*</sup>, Oscar N. Gárate<sup>2</sup>, Gerald Johnson<sup>1</sup>, Roxana Arriagada<sup>4</sup>, Molly J. T. Kibenge<sup>2</sup>, Dorota Wadowska<sup>3</sup>  
<sup>1</sup>Department of Pathology and Microbiology, 2AVC Inc., and 3EM Laboratory, Atlantic Veterinary College,  
University of Prince Edward Island, 550 University Ave., Charlottetown, Prince Edward Island C1A 4P3, Canada  
<sup>4</sup>Aquatic Health Chile Ltda, Benavente 952, Puerto Montt, Chile

**ABSTRACT:** The isolation of infectious salmon anaemia virus (ISAV) from asymptomatic wild fish species including wild salmon, sea trout and eel established that wild fish can be a reservoir of ISAV for farmed Atlantic salmon. This report characterizes

the biological properties of ISAV isolated from a disease outbreak in farmed Coho salmon in Chile and compares it with ISAV isolated from farmed Atlantic salmon in Canada and Europe. The virus that was isolated from Coho salmon tissues was initially detected with ISAV-specific RT-PCR (reverse transcription-polymerase chain reaction). The ability of the virus to grow in cell culture was poor, as cytopathology was not always conspicuous and isolation required passage in the presence of trypsin. Virus replication in cell culture was detected by RT-PCR and IFAT (indirect fluorescent antibody test), and the virus morphology was confirmed by positive staining electron microscopy. Further analysis of the Chilean virus revealed similarities to Canadian ISAV isolates in their ability to grow in the CHSE-214 cell line and in viral protein profile. Sequence analysis of genome segment 2, which encodes the viral RNA polymerase PB1, and segment 8, which encodes the nonstructural proteins NS1 and NS2, showed the Chilean virus to be very similar to Canadian strains of ISAV. This high sequence similarity of ISAV strains of geographically distinct origins illustrates the highly conserved nature of ISAV proteins PB1, NS1 and NS2 of ISAV. It is noteworthy that ISAV was associated with disease outbreaks in farmed Coho salmon in Chile without corresponding clinical disease in farmed Atlantic salmon. This outbreak, which produced high mortality in Coho salmon due to ISAV, is unique and may represent the introduction of the virus to a native wild fish population or a new strain of ISAV.

**ISA BRIEFING PAPER – see attached ISA Tribal Briefing Paper.pdf**

## **ISA REPORTS**

**REPORT, 2ND NOVEMBER 2011 – see attached Report 021111.pdf**

Testing of gill samples from juvenile *Oncorhynchus nerka* (sockeye salmon) collected in Rivers Inlet on the central coast of British Columbia, Canada.

## **ISA IN THE NEWS**

**JOINT PRESS RELEASE - RECENT REPORTS OF ISA IN BC SALMON**

October 23, 2011

Below is a joint statement that was released on October 21, 2011.

The Honourable Keith Ashfield, Minister of Fisheries and Oceans Canada  
The Honourable Gerry Ritz, Minister of Agriculture and Agrifoods Canada

Distributed By: Barbara Mottram, Press Secretary

We want to assure Canadians and people around the world that the Canadian Food Inspection Agency (CFIA) and Fisheries and Oceans Canada are working diligently to get the facts about the reports of the presence of Infectious Salmon Anaemia (ISA) in British Columbian salmon.

The recent reports stating that ISA has been found in British Columbia salmon have not yet been verified by federal officials through established processes. After initial investigations, we are concerned that proper protocols may not have been followed in the testing and reporting of these findings.

CFIA and Fisheries and Oceans Canada are working to assess the results through scientifically sound and internationally recognized procedures, which must include additional testing to verify the presence or absence of ISA virus in these samples. The CFIA and Fisheries and Oceans Canada have been able to acquire additional tissue samples from the 48 sample fish. The national ISA reference laboratory in Moncton will analyze these samples. These tests could take up to 4 or 5 weeks to complete.

Fisheries and Oceans Canada conducts regular testing in British Columbia for a wide variety of pathogens, including ISA. Over the past 2 years, over 500 wild and farmed salmon in British Columbia have been tested by Fisheries and Oceans Canada. From 2003 to 2010, the British Columbia Ministry of Agriculture operated a scientifically designed surveillance program that tested over 4,700 farmed salmon in BC. Again, all samples were negative for the virus. In short, there has never been a confirmed case of ISA in British Columbia salmon – farmed or wild.

There are stringent federal regulations in place to protect Canada's aquatic species (farmed and wild) from disease. The protection of Canada's natural resources continues to be a top priority of the Government of Canada. Until such time as this testing is finalized, it is important that Canadians and others reserve judgment and let the appropriate scientific process run its course. Public debate and any forward action on this issue must be based on the best science.

Source: <http://tinyurl.com/42zenhy>.

### **PRESS RELEASE OF SENATOR CANTWELL**

Senators: U.S. Should Test Salmon Virus, Not Rely on Canada Alone  
Sens. Cantwell, Murkowski and Begich Call for U.S. to Obtain Samples of Canadian Fish Virus, Conduct Independent Tests to Proactively Address Emerging Threat

Wednesday, November 02, 2011

WASHINGTON, D.C. – Today, Senators Maria Cantwell (D-WA), Lisa Murkowski (R-AK), and Mark Begich (D-AK) sent a letter to key Senate Appropriators calling for the federal government to independently test samples of a recently detected salmon virus, rather than relying on Canadian scientists.

The Senators urged appropriators to prioritize the resources and coordination necessary to address this emerging salmon virus threat. The letter comes the day after Senate passage of bipartisan legislation authored by Cantwell and backed by all eight West Coast Senators that requires an investigation be conducted and a rapid response plan be delivered to Congress within six months.



“We urge the U.S. government to obtain samples from the two infected sockeye and run independent diagnostic tests to confirm the presence of the ISA virus in British Columbia,” the Senators wrote. “We should not rely on another government – particularly one that may have a motive to misrepresent its findings-- to determine how we assess the risk ISA may pose to American fishery jobs.”

The virus, which was recently found for the first time in Pacific wild salmon, may pose a threat to the Pacific Northwest salmon fishing industry and the coastal economies that rely on it. The virus does not pose a threat to human health.

The letter was sent to Senator Barbara Mikulski (D-MD) and Senator Kay Bailey Hutchison (R-TX), Chair and Ranking Member, respectively, of the Appropriations Subcommittee on Commerce, Justice, Science, and Related Agencies which funds the National Marine Fisheries Service. The letter notes that besides the two infected sockeye salmon found in Rivers Inlet, there are now additional reports that a wild adult coho salmon found in a tributary of the Fraser River showed signs of infectious salmon anemia disease.

“The threat of a potentially devastating infectious salmon virus needs an immediate federal response,” the Senators continued. “We are writing to urge you to marshal the resources we need to prioritize Infectious Salmon Anemia (ISA) research, surveillance, outreach, and mitigation measures across the Pacific Northwest and develop a response plan. At risk are healthy salmon populations which are the foundation for tens of thousands of jobs and billions of dollars of economic activity throughout the West Coast.”

The letter sent today outlined actions the Senators urge be taken by the National Oceanic and Atmospheric Administration (NOAA) to address the salmon virus threat, including:

Confirmation by the U.S. government of the presence of the salmon virus in British Columbia

Evaluate and bolster the nation’s surveillance and monitoring framework

Measure salmon virus susceptibility among different populations and species of wild salmon in the North Pacific

Develop essential action plans to respond to the salmon virus

Integrate salmon virus monitoring into existing outreach programs to protect the seafood industry from consumer uncertainty (the virus does not pose a threat to human health)

Protect current salmon restoration programs.

“We sincerely hope that the recent detection of ISA in Pacific salmon turns out to be a false alarm,” the Senators continued in the letter. “However, waiting for even more red flags to appear would be irresponsible. We know that ISA has catastrophically impacted salmon industries around the world, costing tens of thousands of jobs abroad, and that the virus is virtually impossible to eradicate once it has spread within an area. We urge you to act now to prevent a similar catastrophic outbreak in the salmon populations of the Pacific Northwest.”

Cantwell's legislation approved by the Senate yesterday calls on the National Aquatic Animal Health Task Force to evaluate the risk the virus could have on wild salmon off West Coast and Alaskan waters, and to develop a plan to address this emerging threat. The legislation requires a report be delivered to Congress within six months. Cantwell spoke on the Senate floor about her legislation during the early morning hours of October 21st. Watch a video of her delivering her remarks [here](#).

The task force works cross-jurisdictionally with several agencies, including the National Oceanic and Atmospheric Association, the United States Geological Survey, the U.S. Fish and Wildlife Service, the Federal Emergency Management Agency (FEMA), and the U.S. Army Corps of Engineers. The task force brings together federal, state, local, and tribal government. Senator Cantwell's legislation requires the Task Force to prioritize Infectious Salmon Anemia (ISA) research, surveillance and response. In addition, Senator Cantwell is calling on the Task Force to make recommendations for management, evaluate mitigation techniques, and ensure the nation has the needed tools to adequately respond to infectious salmon anemia.

Specifically, Cantwell's amendment requires a report be delivered to Congress within six months which outlines surveillance, susceptibility of species and populations, potential vectors, gaps in knowledge, and recommendations for management. The amendment does not have a cost but rather streamlines existing research goals and surveillance efforts, highlights research needs and forges critical collaborations necessary to assess this potentially devastating risk to wild salmon and the coastal economies which rely on them.

The complete text of the letter sent today follows:

November 2, 2011

The Honorable Barbara A. Mikulski  
Chair  
Appropriations Subcommittee, Commerce  
Justice, Science, and Related Agencies  
Dirksen Senate Office Building, Room 142  
Washington DC, 20510

The Honorable Kay Bailey Hutchison  
Ranking Member  
Appropriations Subcommittee, Commerce  
Justice, Science, and Related Agencies  
Dirksen Senate Office Building, Room 142  
Washington DC, 20510

Dear Senators Mikulski and Hutchison:

The threat of a potentially devastating infectious salmon virus needs an immediate federal response. We are writing to urge you to marshal the resources we need to prioritize Infectious Salmon Anemia (ISA) research, surveillance, outreach, and mitigation measures across the Pacific Northwest and develop a response plan. At risk are healthy salmon populations which are the foundation for tens of thousands of jobs and billions of dollars of economic activity throughout the West Coast. Besides the two infected sockeye salmon found in Rivers Inlet, there are now additional reports that a

wild adult coho salmon found in a tributary of the Fraser River showed signs of infectious salmon anemia disease.

One recent study of Pacific salmon estimated the wholesale value of the annual catch at least \$2.2 billion dollars, supporting 35,000 harvesting and processing jobs. Yet this is only a small piece of the economic value of salmon fisheries to the Pacific Northwest. The annual commercial and recreational salmon harvests employ boat builders, outfitters, recreational fishing industry, gear manufacturers, hatcheries, and a myriad of other jobs. With so much at stake, a rapidly spreading virus that causes disease in wild Pacific salmon could be economically and ecologically devastating.

We are seriously concerned that NOAA and other key federal agencies need an immediate response plan. While a few scientists may downplay the threat to wild Pacific salmon posed by the ISA infections recently detected in British Columbia, we believe the lessons learned from other recent fish disease outbreaks suggest that ISA should be cause for considerable concern now. For instance the same virus virtually wiped out whole aquaculture industries in Chile and Norway, and that it can take as few as two fish to start an irreversible and devastating chain reaction throughout the population. In fact, the economically disastrous Viral Hemorrhagic Septicemia fish disease outbreak in the Great Lakes in 2007 began with the detection of only two infected fish.

With some wild salmon populations already endangered and many others under considerable stress, now is not the time to ignore the precautionary principle; the risks are too great. We have been in contact with federal, state, and tribal scientists and fishery management officials ever since ISA was detected in wild Pacific salmon. It is clear that interagency coordination is essential to understanding the virus and to our ability to respond quickly and effectively to stop its spread. That is why our bipartisan legislation, which passed the Senate yesterday, requires the National Aquatic Animal Health Task Force (an existing partnership between USDA, USGS, NOAA and others) to report to Congress within 6 months on the research, interagency coordination, and response measures necessary to nip this problem in the bud.

To that end, we urge NOAA to undertake the following actions:

U.S. independently confirm the presence of ISA in British Columbia. We urge the U.S. government to obtain samples from the two infected sockeye and run independent diagnostic tests to confirm the presence of the ISA virus in British Columbia. We should not rely on another government -- particularly one that may have a motive to misrepresent its findings-- to determine how we assess the risk ISA may pose to American fishery jobs.

Evaluate and bolster our surveillance and monitoring framework. Early detection is critical to responding and curtailing any potential future outbreaks. Improved

interagency coordination is needed to identify coverage gaps, establish communication and response plans, and outline future resource needs.

Measure ISA susceptibility among different populations and species of wild salmon in the North Pacific. Understanding which populations and species are susceptible to ISA will allow us to maximize surveillance dollars by focusing our efforts on populations most at risk. Surveillance efforts should be prioritized to assess the most economically valuable populations first.

Develop essential action plans to respond to ISA. Hopefully this virus will not spread or cause disease among wild salmon populations. However, we need to be prepared to quickly respond if the virus spreads quickly within or across populations and species. We need federal management strategies in place to address any ISA outbreaks in both wild and aquaculture populations, including securing water supplies at conservation hatcheries.

Integrate ISA monitoring into existing outreach programs to protect the seafood industry. ISA does not pose a threat to human health. However, we need to be sure that the news of ISA does not cause consumer uncertainty.

Protect current salmon restoration programs. Responding to ISA should not come at the expense of NOAA meeting its statutory requirements under the Mitchell Act and the Pacific Coastal Salmon Recovery Fund, which are critical to habitat restoration, research and conservation of Pacific salmon species. It would be shortsighted to divert critical salmon funds from these programs when the threat of ISA only renews the need to bolster Pacific salmon recovery, not impede it.

We sincerely hope that the recent detection of ISA in Pacific salmon turns out to be a false alarm. However, waiting for even more red flags to appear would be irresponsible. We know that ISA has catastrophically impacted salmon industries around the world, costing tens of thousands of jobs abroad, and that the virus is virtually impossible to eradicate once it has spread within an area. We urge you to act now to prevent a similar catastrophic outbreak in the salmon populations of the Pacific Northwest.

We look forward to working with you on this important matter.

Sincerely,

Senator Maria Cantwell  
Begich

Senator Lisa Murkowski

Senator Mark

**BRIEFING REPORT – MAINSTREAM CANADA – see attached 2011-11-01ISA situation update General Final.pdf**

**SALMON VIRUS NOT CONFIRMED: DFO**

By Robert Freeman - Chilliwack Progress

Published: November 03, 2011 10:00 AM

Updated: November 03, 2011 10:24 AM

The infectious salmon anemia virus (ISAV) has reportedly been found in a coho from Weaver Creek which flows into the Fraser River near Harrison Mills.

According to a document obtained by opponents to commercial fish farms, the Weaver Creek coho tested positive for the virus, along with another from Rivers Inlet on B.C.'s central coast.

However, the Canadian Food Inspection Agency document goes on to say the positive ISAV detection is not confirmed and is "suspect" because of "chain of custody" issues.

But if the virus from fish farmed salmon has entered wild stocks, it could play havoc with B.C.'s salmon industry.

The virus reportedly caused \$2 billion in damages to Chilean fish stocks.

Further tests to confirm the virus are underway and results are expected in the next four or five weeks, a federal fisheries spokesperson said Wednesday.

But fish-farm critics say they have lost confidence in the DFO, and fear the worst if the virus is loose in wild stocks.

"The name of the game is containment now," said Ernie Crey, a local fisheries critic, because the virus can't be destroyed and can mutate into other forms.

Crey said it is "folly" to leave regular testing of farmed salmon to companies.

"It's a conflict of interest," he said. "It should be done by the DFO or an independent lab."

Dr. Alexandra Morton, who found the Weaver Creek coho, agreed with Crey's call for independent testing.

"Salmon farms break the natural laws, and viruses, bacteria and parasites are the beneficiaries of the behaviour," she wrote in an internet blog.

If viruses are allowed to flourish in fish farms, she said, "you get pestilence. There is no other outcome."

Meanwhile, Federal fisheries minister Keith Ashfield is calling for public calm until the tests are finalized.

"Public debate and any forward action on this issue must be based on the best science," he said.

[rfreeman@theprogress.com](mailto:rfreeman@theprogress.com)

## **VIRUS IN PACIFIC SALMON RAISES WORRIES ABOUT INDUSTRY -**

[http://www.nytimes.com/2011/10/29/science/pacific-salmon-virus-raises-worries-about-industry.html?\\_r=2](http://www.nytimes.com/2011/10/29/science/pacific-salmon-virus-raises-worries-about-industry.html?_r=2)

By [WILLIAM YARDLEY](#)

**Published: October 28, 2011**

Advocates for wild [salmon](#) said Friday that a deadly virus had been detected again in a Pacific salmon in British Columbia, but it was not clear if it would prove lethal to the fish population.

Related

- [Salmon-Killing Virus Seen for First Time in the Wild on the Pacific Coast \(October 18, 2011\)](#)

The finding, like one involving two juvenile wild sockeye salmon in British Columbia, poses questions for the viability of salmon fisheries in Canada and the United States. Scientists have expressed concern about the emergence of the virus while raising questions about complications, including scientific doubts about the quality of the tests.

In its active state, the virus, infectious salmon anemia, has devastated Atlantic salmon populations in fish farms in Chile and elsewhere. Salmon advocates have long worried that the virus could spread to wild populations, but it not clear whether Pacific salmon are equally susceptible.

In documents released Friday, an adult coho salmon supplied by salmon advocates to a prominent laboratory showed signs of carrying the disease. That fish was reported to have been found in a tributary of the Fraser River, a critical salmon run for fishermen in Canada and the United States.

Last week, researchers from Simon Fraser University in British Columbia and elsewhere said that they had discovered the virus in 2 of 48 juvenile fish collected as part of a study of sockeye salmon in Rivers Inlet, on the central coast of British Columbia. The study was undertaken after scientists observed a decline in the number of young sockeye.

Such a virus could have a deep impact on the survival of salmon in the Pacific Northwest. Some scientists have suggested that the virus had spread from British Columbia's aquaculture industry, which has imported millions of Atlantic salmon eggs over the last 25 years.

Salmon farms and wild fish are separated only by a net, many have noted. No treatment exists for the virus, which does not spread to humans, scientists say.

The crowded conditions of salmon farms are thought to abet the spread of the virus.

## CANADA

Tuesday, October 25, 2011, 02:20 (GMT + 9)

The minister of Fisheries and Oceans Canada (DFO), Keith Ashfield, and the minister of Agriculture and Agrifoods from Canada, Gerry Ritz, issued a joint statement referring to the news on ISA virus findings in British Columbia.

"We want to assure Canadians and people around the world that the Canadian Food Inspection Agency (CFIA) and Fisheries and Oceans Canada are working diligently to get the facts about the reports of the presence of Infectious Salmon Anaemia (ISA) in British Columbian salmon," both ministers pointed out.

"The recent reports stating that ISA has been found in British Columbian salmon have not yet been verified by federal officials through established processes. After initial investigations, the ministers said they are concerned that proper protocols may not have been followed in the testing and reporting of these findings.

"CFIA and Fisheries and Oceans Canada are working to assess the results through scientifically sound and internationally recognized procedures, which must include additional testing to verify the presence or absence of ISA virus in these samples.

"The CFIA and Fisheries and Oceans Canada have been able to acquire additional tissue samples from the 48 sample fish. The national ISA reference laboratory in Moncton will analyze these samples. These tests could take up to four or five weeks to complete.

"Fisheries and Oceans Canada conducts regular testing in British Columbia for a wide variety of pathogens, including ISA. Over the past two years, over 500 wild and farmed salmon in British Columbia have been tested by Fisheries and Oceans Canada.

"From 2003 to 2010, the British Columbian Ministry of Agriculture operated a scientifically designed surveillance programme that tested over 4,700 farmed salmon in BC. Again, all samples were negative for the virus. In short, there has never been a confirmed case of ISA in British Columbian salmon – farmed or wild.

"There are stringent federal regulations in place to protect Canada's aquatic species (farmed and wild) from disease. The protection of Canada's natural resources continues to be a top priority of the Government of Canada.

"Until such time as this testing is finalized, it is important that Canadians and others reserve judgment and let the appropriate scientific process run its course. Public debate and any forward action on this issue must be based on the best science."

### **ALEXANDRA MORTON'S BLOG:**

[http://alexandramorton.typepad.com/alexandra\\_morton/2011/11/more-european-isa-virus-detected-in-wild-bc-salmon.html](http://alexandramorton.typepad.com/alexandra_morton/2011/11/more-european-isa-virus-detected-in-wild-bc-salmon.html)

### **OTHER NEWSLINKS**

"Should Salmon Farms Move Inland?" (The New York Times, 28th October):

<http://green.blogs.nytimes.com/2011/10/28/should-salmon-farms-move-inland/>

"The potential arrival of Infectious Salmon Anemia virus" (The Courier-Islander, 28th October):

<http://www.canada.com/potential+arrival+Infectious+Salmon+Anemia+virus/5620943/story.html>

"Newest threat calls for a code red" (The Courier-Islander, 28th October):

<http://www2.canada.com/courierislander/news/opinion/story.html?id=d71cfad6-e302-42dc-85e9-a80367a2ab9e>

"Marine Harvest: Unanswered questions in ISA find: The world's largest salmon farming company says groups jumping to conclusions about ISA finding in Canadian wild salmon" (Intrafish, 28th October):

<http://www.intrafish.com/global/news/article1259747.ece>

"Fish farms are managed responsibly" (The Courier-Islander, 28th October):

<http://www.canada.com/Fish+farms+managed+responsibly/5620942/story.html>

"Appearance of ISA in BC must lead to immediate action by DFO" (Coastal Alliance for Aquaculture Reform, 28th October):

<http://www.farmedanddangerous.org/newsletter/2011/10/3653/#ISA>

And something to keep in mind, vaccine progress over the past few years:

**ISA VACCINE PROVISIONALLY APPROVED**

<http://www.thefishsite.com/fishnews/9603/chile-approves-isa-vaccine>

<http://fis.com/fis/worldnews/worldnews.asp?l=e&id=36558&ndb=1>