

Informational Bulletin on the Status of Infectious Salmon Anemia Virus in the Pacific Northwest

Federal Aquatic Animal Health Task Force
February 14, 2012

What We Know

- Two Canadian scientists reported this past year that they found evidence of Infectious Salmon Anemia Virus (ISAV) in wild salmon in British Columbia, Canada.
- These scientists used molecular tools that detected the presence of segments of RNA that are also found in ISAV. The ISA virus itself has yet to be isolated in British Columbia. An “isolation” means that the entire, complete organism has actually been grown, visualized, or presence confirmed using other diagnostic tools.
- The official federal Canadian agency responsible for investigating animal diseases, the Canadian Food Inspection Agency (CFIA), was unable to confirm the presence of ISAV in British Columbia using internationally-approved testing methodologies. CFIA is the competent Canadian authority recognized by the World Organization for Animal Health and the United States as the body in Canada responsible for these investigations and confirmatory testing.
- Prior to these suspected findings, ISAV had not been reported in the Pacific Northwest.
- Pathogenic (disease-causing) forms of ISAV are known to cause disease of the same name, Infectious Salmon Anemia, in farmed Atlantic salmon in Europe, Chile, Maine and New Brunswick. Economic losses due to disease outbreaks in these regions have been significant.
- ISAV does not replicate in mammals and does not affect humans.
- ISA disease control programs can be effective and, due to the control measures that were instituted in salmon farms in Maine, there has not been an ISA outbreak in Maine for several years.
- Fishery managers are concerned about these suspected ISAV findings because of the potential to negatively impact wild, hatchery-reared, and farmed salmon in the Pacific Northwest.
- There has not been a report of mortality in wild fish populations anywhere in the world due to ISAV.
- There has not been any mortality in British Columbia salmon, wild or farmed, associated with ISAV nor have there been any ISAV isolations in farmed Atlantic salmon in British Columbia.
- Previous research in the United States in a controlled laboratory setting demonstrated that Pacific salmon species were relatively resistant to pathogenic forms of ISAV as

compared to Atlantic salmon. (Atlantic salmon, *Salmo salar*, are of a different genus than Pacific salmon.)

- Historic testing for ISAV in Pacific salmon in the United States by states, tribes, and federal agencies using tissue culture methods (growing the virus) has failed to demonstrate the presence of ISAV.
- There exists in parts of the world a strain of ISAV, known as HPR0, that does not cause disease and is unable to be isolated using tissue culture methods.

What We don't Know

- It is yet to be determined what the Canadian scientists found in their molecular tests. Did they isolate a new form of ISAV? Did they find a virus that is similar to ISAV? Are they detecting RNA that is similar to that found in ISAV but not of viral origin?
- We don't know if ISAV, HPR0 strain, or ISAV-like virus strains exist in Pacific salmon in Alaska or Washington State, two states adjacent to the province of British Columbia. We do know that salmon migrate back and forth in the Pacific Ocean between Canada and the United States, so it would not be surprising if findings similar to those in British Columbia are also made in the U.S.
- We don't know what the impact will be on Pacific salmon or other marine fish if in fact ISAV, disease causing strains or otherwise, is confirmed in British Columbia or other parts of the Pacific Northwest.

What We Are Doing in Response to the Suspected ISAV Findings in Canada

- The Federal Aquatic Animal Health Task Force (*Task Force*) that is comprised of representatives from the Departments of Agriculture, Interior, and Commerce – the US agencies responsible for the management of diseases in aquatic animals, has been working closely with our counterparts in Canada to understand what is happening in British Columbia and how CFIA is investigating this matter.
- The *Task Force* is collaborating with federal, state and tribal partners in the Pacific Northwest that are responsible for managing and regulating fishery resources. We are working with these partners to develop and implement a surveillance plan for ISAV that is designed to determine the presence or absence of ISAV or ISAV-like organisms in salmon in the US. The draft surveillance plan has been completed and is currently being reviewed by the *Task Force*. The plan will use recognized molecular tests to search for ISAV. We anticipate, pending availability of resources, to implement the plan in the coming months. Meanwhile, an existing and ongoing surveillance scheme for reportable viral pathogens continues by our partners in the Northwest. This existing scheme utilizes tissue culture to isolate viruses and likely would have detected pathogenic forms of ISAV if they were present.
- The *Task Force*, in cooperation with our federal, state, and tribal partners, are developing a research plan that will help us answer some of the questions as to what is actually being

found in British Columbia and whether it is present in the US and whether it could impact cultured or wild salmon. As with the pending surveillance plan, this research plan must be approved by the *Task Force* and funding must be obtained for this research.

- The *Task Force*, as directed by Congress in amendment # 893 of HR 2112 that passed in November, 2011, is preparing a report that will address how we are investigating and researching the potential presence of ISAV in the Pacific Northwest. This report is due to Congress by May 15, 2012.
- The *Task Force*, consistent with this informational bulletin, is providing ongoing updates on this ISAV investigation to our respective agencies and to our stakeholders. Information may be obtained at the following website:

http://www.aphis.usda.gov/animal_health/animal_dis_spec/aquaculture/index2.shtml#ISA

- The *Task Force*, in collaboration with our domestic and international partners and stakeholders, remains vigilant for any aquatic disease agent that could impact our Nation's fishery resources. This federal effort to prevent and manage aquatic diseases is conducted within the regulatory authorities of the three agencies that are members of the *Task Force* and via a new vehicle we are implementing called the *National Aquatic Animal Health Plan*.

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