

# GE Fish

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Sharratt<info@cban.ca><p><b>December 16, 2011: IS A virus confirmed in Aqua Bounty? s genetically engineered salmon</b>: A 2009 memo from Fisheries and Oceans Canada (DFO) entered into evidence at Canada's federal Cohen Inquiry into the collapse of Fraser River sockeye Thursday reveals that salmon at the Aqua Bounty facility in Prince Edward Island have tested positive for the Infectious Salmon Anaemia (ISA) virus. <a href="http://www.youtube.com/watch?v=VVh4TRey0OE" target="\_self">Click here to watch Catherine Stewart of Living Oceans Society talk about what this means.</a></p><p><b>October 11, 2011- Press Release</b>: <a href="/Press/Press-Releases/U.S.-Rubber-Stamp-of-GM-Fish-Imminent" target="\_self">U.S. Rubber-Stamp of GM Fish Imminent? U.S. approval would trigger corporate plan to produce genetically modified salmon eggs in Canada, but Environment Canada remains silent</a></p><p><b>Canada and the US could soon approve genetically modified (GM) genetically engineered (GE) Atlantic salmon - the first ever GM food animal in the world. The small U.S. company Aqua Bounty has asked the U.S. Food and Drug Administration (FDA) to approve their plan to produce GM salmon eggs on PEI, to grow out in Panama and sell to U.S. consumers. The company has plans to expand production across the world though they have not specified these plans to the U.S. FDA.</p><a name="eztoc528\_1" id="eztoc528\_1"></a><h2>Take Action</h2><ol><li><a href="/Resources/Topics/GE-Fish/Write-the-Minister-of-the-Environment" target="\_self">Write to the Minister of Environment instantly by clicking here:</a> Halt any environmental assessment of GE fish! Why won't Environment Canada even tell Canadians if it has started an assessment?</li><li><a href="/Resources/Topics/Enviro-pig/Write-the-Minister-of-Health-Stop-Enviro-pig" target="\_self">Write to the Minister of Health today, to stop the GM fish and the GM pig called &quot;Enviro-pig.</a> Health Canada is already considering a request to approve the GM pig (from the University of Guelph) for eating in Canada and the company Aqua Bounty says it will soon ask for approval for its GM salmon.</li><li><a href="/Resources/Topics/GE-Fish/Sign-your-organization-s-objection-to-GE-fish" target="\_self">Organizations can still sign on to the statement opposing GE salmon!: No GE Research, Production, Consumption in, and Export from, Canada</a>. We invite environmental, conservation, health, consumer, and public interest groups, industry associations, and aboriginal peoples' organizations in Canada to sign the following statement of opposition to genetically engineered (GE) fish.<a href="/Resources/Topics/GE-Fish/Sign-your-organization-s-objection-to-GE-fish" target="\_self">Sign on here.</a></li><li><a href="/Resources/Topics/GE-Fish/Stop-GM-Fish-Flyer" target="\_self">Print and distribute this flyer-raise awareness in your community.</a></li></ol><p><b>U.S. company Aqua Bounty is seeking approval for its genetically engineered Atlantic salmon. The company claims the salmon grow to market-size twice as fast as other farmed salmon. The salmon are engineered with a growth hormone gene from Chinook salmon and genetic material from ocean pout (a eel-like creature).</p><p><b>A summary of Aqua Bounty's environmental assessment released by the US Food and Drug Administration on September 3, 2010, revealed that the company is **not** requesting approval to produce the GE Atlantic salmon in the US but intends instead to **produce all the GE salmon eggs on Prince Edward Island**, then ship the eggs to Panama for growing-out and processing, for export into the US consumer market as <table-ready?> fish. The company is assuming it will be granted approval by Environment Canada to produce GE salmon eggs on PEI. Aqua Bounty says it is now preparing to also ask Health Canada to approve the GE salmon for human consumption here.</p><p><b>House of Commons Motion: October 2011</b>- Mr. Donnelly (New Westminster/Coquitlam)? *That, in the opinion of the House, the government should immediately: (a) provide greater regulatory clarity by identifying which government departments are responsible for the regulation of genetically modified salmon and other transgenic aquatic organisms; (b) prevent the introduction into the Canadian food system of genetically modified salmon destined for human consumption until further scientific studies are concluded by the relevant departments to determine the impact of genetically modified salmon on human health and on the health of marine species, ecosystems and habitats; and (c) direct the departments responsible for the regulation of genetically modified salmon to establish a practice of notifying the Canadian public of all requests and approvals and of any information and findings regarding genetically modified salmon and salmon eggs.</p><a name="eztoc528\_2" id="eztoc528\_2"></a><h2>Background Information</h2><p><b>October 2010, Article</b>, <a href="/Resources/Topics/GE-Fish/Biotech-Gets-Fishy-with-GE-Salmon2" target="\_self">"Biotech Gets Fishy with GE Salmon" Common Ground Magazine,*

Lucy Sharratt, CBAN.

**What is the GM Salmon?** The U.S. company AquaBounty is asking the U.S. to approve its genetically engineered (GE, also called genetically modified or GM) Atlantic salmon for human consumption and says it will soon ask for approval in Canada. The company claims its advantage? salmon grow to market-size twice as fast as other farmed salmon. That's because the Atlantic salmon are engineered with a growth hormone gene from Chinook salmon and genetic material from ocean pout (a eel-like creature).

**The GM Salmon is from Canada** AquaBounty is headquartered in the US but the GM salmon is based on a gene construct patented by two Canadian university professors. The company also has research facilities in Prince Edward Island where it grows GM fish for experimentation and testing. **The company recently revealed that it is not actually asking for approval to grow the fish in the US but plan to produce all of the GM salmon eggs on PEI, ship the eggs to Panama for growing out and processing, and then sell?**

**table-ready? GM salmon into the US consumer market.** AquaBounty does not yet have permission from Environment Canada to commercially produce its GM salmon eggs at its PEI facility. Environment Canada refuses to disclose if the department is already assessing a request from AquaBounty.

**No One Wants GM Fish** The aquaculture industry does not support the commercialization of GM fish and has stated that there is no market demand.

**Will GM Salmon Be On Our Plate Soon?** AquaBounty said it is asking Health Canada to approve the GM salmon for eating in Canada. This process could happen quickly, especially if the US government approves the fish. Health Canada refuses to tell the public if they are already looking at a request to approve GM salmon for eating in Canada.

After 10 years, the US government could be close to approving the GM salmon. In late 2010, the U.S. Food and Drug Administration (FDA) announced the final stages of its process to approve the GM salmon, and made the preliminary conclusion that the GE salmon is safe to eat and does not pose a risk to the environment. But FDA meetings in September 2010 did not conclude with a recommendation to approve the salmon. Instead, the FDA's own committee members voiced serious concerns about the quality of the data and the risks.

**GM Salmon vs. GM Pig**



The GM fish is in a race with the GM pig called Enviropig to become the first genetically engineered animal in our food system. The University of Guelph has already asked Health Canada to approve Enviropig for eating. Environment Canada has already approved reproduction of the GM pigs.

**Environment al Risks** Atlantic salmon are farmed in both the Atlantic and Pacific Ocean. The escape of farmed fish from either marine net pens or hatcheries is serious, reoccurring pollution that threatens species. For example, mature escaped Atlantic salmon have been recorded in streams in B.C.

To try to avoid a full review of these risks, AquaBounty is only seeking permission to raise the fish in a land-based facility in a remote highland area of Panama - even though they say they want to raise the fish in the U.S. and other countries. The company also says that all the fish will be sterile females, but admits they can only guarantee 95% of the salmon will be unable to reproduce.

Any risk of GM Atlantic salmon escaping into the wild is unacceptable, especially when Atlantic salmon are already in danger of disappearing.

Also, GM salmon could put even more pressure on marine ecosystems. The fast-growing GM salmon could consume up to five times more food than other farmed salmon - because salmon are carnivorous they actually eat large amounts of wild-harvested fish like anchovies and sardines, caught just to feed them.

**Health Risks and Bad Science** Critics have long warned that the process of genetic engineering itself could possibly result in increased allergenicity and AquaBounty's own data point to this potential in their GM salmon.

Dr. Michael Hansen, Senior Scientist at Consumers Union US, says, "The FDA is relying on woefully inadequate data. There is sloppy science, small sample sizes, and questionable practices." For example, the company used insensitive tests to try and measure the level of growth hormone in the GM salmon and the level of IGF-1, a hormone linked to a number of cancers.

**January 15, 2011:** PEI groups met with Premier Ghiz and the PEI Minister of the Environment and secured a pledge that the Premier will seek information from Environment Canada. Environment Canada is currently refusing to disclose any information about a possible risk assessment to allow the product

onofGESalmoneggsonPEI.<a href="http://www.theguardian.pe.ca/News/Local/2011-01-14/article-2115762/Frankensalmon-fears-prompt-P.E.I.-group-to-call-for-ban/1" target="\_self">Read the story: PEI groups meet with Premier and secure pledge on GE fish.</a></p>
<p><b>December 6, 2010 Press Release:</b><a href="/Press/Press-Releases/Groups-Oppose-Genetically-Engineered-Salmon" target="\_self">Groups Oppose Genetically Engineered Salmon: Demand Immediate Disclosure from Environment Canada</a></p>
<p><b>Sixty fisheries and oceans conservation, environmental and social justice groups revealed today that Environment Canada refuse to confirm or deny if the department has already started a secret 120-day risk assessment to approve genetically engineered (GE, also called genetically modified or GM) salmon egg production on Prince Edward Island. The group today also released a joint statement of categorical objection to the raising of GE fish and fish eggs.</b><a href="/Resources/Topics/GE-Fish/Statement-Opposing-GE-Fish" target="\_self">Click here to see the statement opposing GE fish and the list of 60 groups signed so far.</a></p>
<p><b>November 22, 2010: Press release:</b><a href="/Press/Press-Releases/PEI-Groups-request-Premier-Ghiz-to-press-Environment-Canada-for-disclosure-on-GE-Salmon" target="\_self">PEI Groups request Premier Ghiz to press Environment Canada for disclosure on GE Salmon</a></p>
<p><a href="/Resources/Topics/GE-Fish/Letter-to-Premier-Ghiz-re-GE-Fish" target="\_self">Letter from Groups to PEI Premier</a></p>
<p><b>October 27, 2010:</b><a href="http://truefoodnow.org/2010/10/27/newly-disclosed-government-documents-conclude-ge-salmon-poses-a-critical-threat-to-marine-environments/#more-1456" target="\_self">Newly Disclosed Government Documents Conclude GE Salmon Pose A Critical Threat To Marine Environments</a>- Expert fisheries agencies prohibit growing engineered salmon in open water net pens under the Endangered Species Act.</p>
<p><b>September 21, 2010- Press Statement: Groups in the US and Canada urge the FDA to heed yesterday's warnings by scientists regarding the safety of genetically engineered salmon and reject company's request for approval- Yesterday the FDA's Veterinary Medicine Advisory Committee finished two days of public hearings in Maryland on the safety of genetically engineered (GE) salmon: "The committee could not avoid pointing to serious problems with the science. The FDA cannot approve the GE salmon after the committee has raised so many questions about its safety," said Lucy Sharratt, Coordinator, Canadian Biotechnology Action Network. Many committee members raised serious concerns about the safety of the GE salmon and question about the quality of the data used by the FDA to come to its initial conclusion that the GE fish is safe. The FDA will now consider the concerns raised by the committee before making a final decision to approve or reject the GE fish, or call for more studies. The FDA has agreed to a public comment period on an environmental assessment.</p>
<p><b>September 20, 2010- Press Release:</b><a href="/Press/Press-Releases/Critics-slam-sloppy-science-on-GE-Fish-at-FDA-hearings" target="\_self">Critics slam sloppy science on GE fish at FDA hearings: FDA overlooked evidence of allergenic potential and accepted deficient data say groups</a></p>
<p><b>September 16, 2010- Press Release:</b><a href="/Press/Press-Releases/PEI-Groups-Denounce-Plans-for-Local-GE-Salmon-Production" target="\_self">PEI Groups Denounce Plans for Local GE Salmon Production: PEI representatives to attend US hearing on GE fish safety</a></p>
<p><b>September 8, 2010- Press Release:</b><a href="/Press/Press-Releases/Company-Reveals-Plan-to-Produce-GE-Salmon-Eggs-in-Canada" target="\_self">As U.S. Decision on GE Fish Nears Final Stage, Company Reveals Plan to Produce GE Salmon Eggs in Canada</a></p>
<p><b>September 3, 2010: FDA releases documents for the first time prior to public meetings September 19-21:</b><ul><li><a href="/Resources/Topics/GE-Fish/Environmental-Assessment-of-GE-Salmon" target="\_self">Environmental Assessment for "AquAdvantage" Salmon</a></li><li><a href="/Resources/Topics/GE-Fish/Briefing-Packet-on-GE-Salmon" target="\_self">Briefing Packet: Veterinary Medicine Advisory Committee</a></li></ul><p><b>August 27, 2010- Joint Press Statement:</b><a href="http://www.cban.ca/Press/Press-Releases/Coalition-Demands-FDA-Deny-Approval-of-Controversial-GE-Fish" target="\_self">Coalition Demands FDA Deny Approval of Controversial GE Fish:</a> FDA Considers Approval of GE Salmon--the First GE Food Animal-- Yet Fails to Inform the Public of Environmental and Economic Risks.</p>
<a name="eztoc528\_4" id="eztoc528\_4"></a><h2>More Information</h2><p><b>Canadian regulation:</b> Canadian regulators are not prepar

ed to evaluate GE fish properly. The Department of Fisheries and Oceans (DFO) abandoned its work to develop regulations specific to GE fish. Because DFO could not figure out how to regulate GE fish (Transgenic Aquatic Organisms), they have passed the task to Environment Canada under the *Canadian Environmental Protection Act*. Health Canada will evaluate the safety of GE fish for human consumption under the existing *Novel Foods* regulations. Health Canada is still developing particular guidelines for evaluating safety under these existing regulations.

**Status of Wild Atlantic Salmon**

Populations of wild Atlantic Salmon have declined for years, with numbers of Atlantic salmon in Canada dropping from approximately 18 million in 1975 to 625,000 in 2008, according to the International Council for the Exploration of the Sea (ICES). While Atlantic salmon can be found in Ireland, the United Kingdom, Canada, Iceland, Norway, Sweden, Finland, Russia, France, Spain, and the United States, many traditional salmon runs are now reduced or extinct. In 2009, the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) listed all populations of wild Atlantic salmon as a High Priority Candidate for endangerment or disappearance from Canada. In years prior to this, Lake Ontario populations were listed as Extirpated and Inner Bay of Fundy (iBoF) populations as Endangered. Commercial fisheries for wild Atlantic salmon were closed in 1985. Recreational fisheries, First Nations and Labrador Resident fisheries of large Atlantic salmon are allowed but restricted in Canada.

Atlantic salmon are farmed in Atlantic Canada but also in the Pacific Ocean, primarily in Chile and along the West Coast of Canada and the U.S.

**Background on the company AquaBounty**

In 2004, AquaBounty Farms was renamed as AquaBounty Technologies Inc. Corporate Headquarters are based in Waltham, Massachusetts, while the AquaBounty Pacific subsidiary is located in San Diego, California. AquaBounty has a Canadian subsidiary based in St. John's, Newfoundland. AquaBounty maintains a research and development facility in Bay Fortune, Prince Edward Island.

The original research conducted on antifreeze (promoter) proteins was patented by two University professors, Dr. Garth Fletcher from Memorial University Newfoundland and Dr. Choy Hew of the University of Toronto, as their invention. Dr. Fletcher became Co-Founder, Director, and Corporate Vice President of A/FP Protein Inc., and President of A/FP Protein Canada Inc. He is still Professor Emeritus at the Ocean Sciences Centre of Memorial University of Newfoundland.

In January 2010, the federal government granted public funds to AquaBounty for research that can be applied to their GE salmon. The company was given \$2.9 million from the Atlantic Innovation Fund to improve the culture of reproductively sterile Atlantic salmon with the objective of the safe commercial launch of triploid salmon with Atlantic Canada identified as the source for associated commercial benefits, and worldwide distribution of the product.