

HJR 12: Opposing GM Salmon

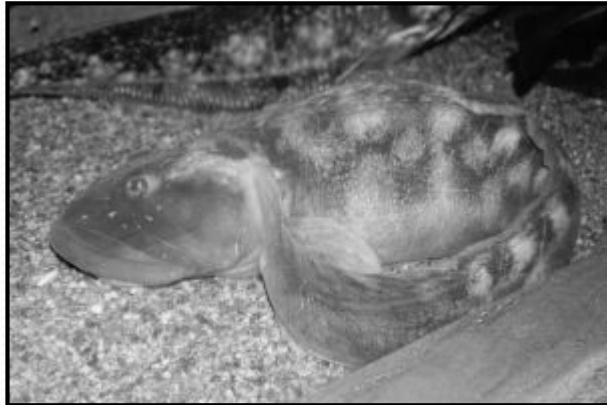


Why the need for HJR 12?

- November 19, 2015 decision by FDA to allow GM salmon
- First time FDA approved a genetically modified (GM) animal for human consumption

What is GM salmon?

- Genetically modified using fast growing Atlantic salmon and DNA from two other species of fish
 - Ocean pout (an eel like fish)
 - Chinook salmon (King)



How does it work?

- Chinook DNA makes the GE fish grow bigger faster
- Ocean pout DNA makes it grow year-round



- The DNA of the top fish has been genetically engineered to continually produce growth hormones for its entire life
- GM salmon grow to full size twice as fast

Why GM Salmon?

- Never about sustainability, always about profit
- From the AquaBounty website:
 - **The AquaBounty Founding Idea — Modern Genetics + Land-Based Aquaculture**
 - In 1993, AquaBounty's CEO had the idea of pairing the two revolutionary technologies. The innovative faster growing AquAdvantage Salmon, which would shorten production cycles by half and drastically reduce feed costs, could finally make land-based fish farming economically viable.





Why Alaska Pollock is sustainably harvested

1. Only American owned fishing vessels can fish in Alaskan waters
2. Bering Sea ecosystem is exhaustively studied and researched
3. 38 year track record of managing sustainable catch levels
4. Quota system incentivizes Fishers to fish sustainably
5. Onboard Observer Program ensures fishery is closely monitored

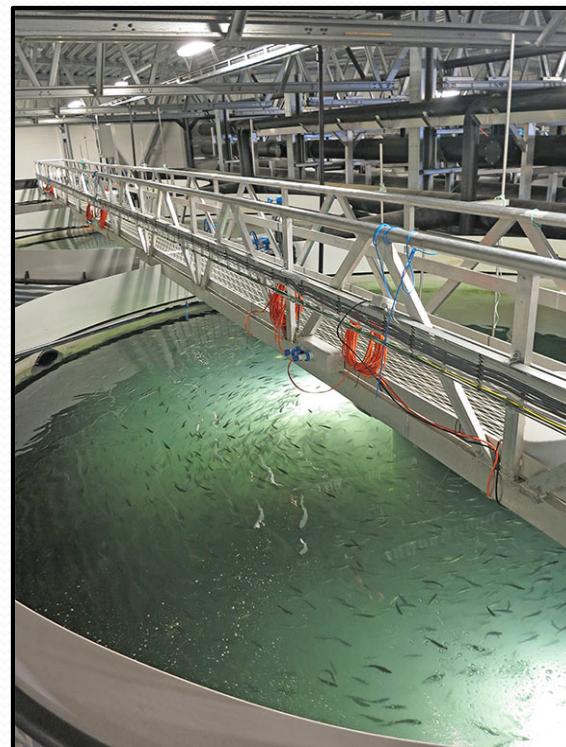
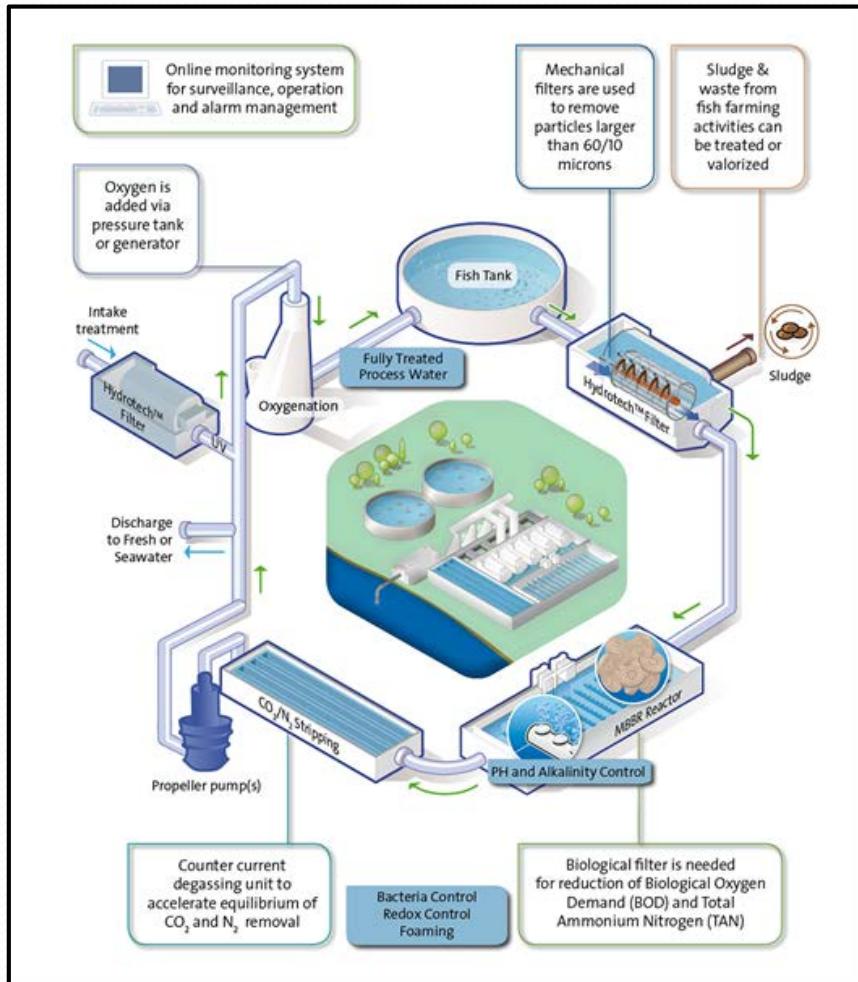
"The modern pollock industry, while by no means perfect, is one of the best managed in the world"

Andy Shanks, CEO of Pollock
Perfect Prosper: The Fish Lawyer's Guide to
Saving the Oceans and Feeding the World
pg. 99

"Pollock is considered one of the world's best-managed populations...It is sometimes referred to as a poster child of marine fisheries management"

Kevin McNamee
"Bacon-Dollar Fish: The Untold Story of Alaska Pollock"





Concerns about GM salmon

- Possible effects of GM salmon
 - Threat to wild salmon
 - Risks to human health
 - Risk to state's economy

Threat to Wild Salmon

- Escapement poses a threat
- Reports from Alaska fisherman that they have caught farmed Atlantic salmon that was reared in Washington and British Columbia
- Risks were recognized by the USFWS and NOAA





Threat to Wild Salmon

- GM salmon can spread disease
- More aggressive, can out compete wild salmon
- Cross breed with wild fish

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Hybridization between genetically modified Atlantic salmon and wild brown trout reveals novel ecological interactions

Krista B. Oke, Peter A. H. Westley, Derek T. R. Moreau, Ian A. Fleming

Published 29 May 2013. DOI: 10.1098/rspb.2013.1047

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New report highlights GM salmon risks –
Fishupdate.com

Posted on September 22, 2014 by systemwwwex • 0 Comments

GM Salmon Can Breed With Trout and Harm Ecosystem, Warn Scientists

May 29th, 2013

Genetically modified salmon can breed with wild trout to produce a new fast growing fish that can harm natural species, scientists have warned.

The Telegraph

By Richard Gray, Science Correspondent

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GM salmon can breed with trout and harm ecosystem, warn scientists

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Risks to Human Health

- People who eat the GM salmon will be eating the foreign DNA, along with the growth hormones.
- The FDA has not conducted sufficient long term safety testing to determine that genetically engineered salmon is safe to eat and that long- term consumption does not pose health risks
- Vulnerable populations: children and expectant mothers.

Risk to State's Economy

- Look back to introduction of farmed salmon
- Significant investments in marketing and branding for health benefits
- Could undermine confidence in Alaska wild salmon
- Largest private sector employer with over 70,000 jobs

Alaskans Are Not Alone in Opposing GM Salmon

- Dozen Alaskan fishing groups & retailers
- Congressional delegation
- 40 members of Congress
- More than 1.5 million comments from around the country opposing approval of GM salmon
- 65 retailers won't sell GM salmon

International Opposition



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GM Canada sued over approval of genetically modified salmon scheme

US firm's plan to produce GM salmon eggs in Canada and ship them to Panama threatens contamination of wild fish in a 'huge live experiment', lawsuit argues

Oliver Milman
Tuesday 17 November 2015 06.30 EST

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A photograph of a salmon leaping out of the water, with spray visible around it. The image is part of a news article about genetically modified salmon.

US Lawsuit filed March 31, 2016

- Sues US FDA claiming did not have authority to approve GMO salmon
- Says 1938 Federal Food, Drug, and Cosmetic Act does not allow for regulation of “animal drugs”
- Also highlights failure to consult with NOAA and other federal agencies