Testimony of:

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Before the
Alaska House Special Committee on Fisheries

Regarding:

House Joint Resolution 28:
Denouncing the recent FDA approval of AquaBounty's
AquAdvantage genetically engineered salmon

And:

House Bill 258:
An Act Prohibiting the Sale of a Genetically
Modified Fish or Fish Product

Juneau, Alaska

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Thank you Chairman Stutes for inviting me to testify on an issue with more than just symbolic significance. The innovative biotechnology involved in genetically engineering salmon promises to bring healthy and affordable food within reach for countless consumers with lower environmental impact than traditional ocean-farmed salmon. At the same time, this salmon promises dramatically to reduce the potential for potential negative impacts on wild populations that has sometimes been seen as a byproduct of raising farmed salmon large scale sea pens.

According to the Sponsor's Statement, House Bill 258 and House Joint Resolution 28 are "designed to protect our wild Alaska salmon and support our thriving, sustainable fisheries. HB 258 will prohibit the sale of genetically modified salmon… in the State of Alaska. HJR 28 denounces the recent approval of AquaBounty's AquAdvantage genetically engineered salmon."[1]

Two main claims are advanced to justify the proposed legislation: "This industry and way of life would be jeopardized with the inevitable, accidental release of transgenic fish into the wild… [and] the longterm health effects of consuming genetically engineered salmon are unknown."[2]

These claims are and objectively false. Alaska's fishing industry and way of life are impervious to any possible threat from a fish that will be grown in contained, closed circuit, terrestrial facilities located inland, thousands of miles from Alaska, far from any connecting waterways, and dedicated to raising sterile fish.

The species recently approved by FDA for human consumption is Atlantic salmon, *Salmo salar*, a species that is not native to Alaskan waters.[3] AquaBounty's salmon has been approved to be grown in only two facilities—one on Prince Edward Island, Canada, and the other in the highlands of central Panama. In more than 25 years of research and development there has never been an escape of transgenic fish from either facility. If an escape were to take place, the fish are adapted and dependent on the conditions in which they are raised to such an extent that they would quickly expire in the hostile, wild environments where these facilities are located. [4] But even in the remote event they were to survive in the wild, however, the fish would pose no threat to existing populations because they are sterile and incapable of reproducing.

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[1] Alaska House Joint Resolution 28, "Sponsor Statement", Representative Geran Tarr, http://www.akdemocrats.org/index.php?bill=HJR28, accessed February 3, 2016.

[2] Ibid.

[3] U.S. Food and Drug Administration, "AquAdvantage Salmon," November 19, 2015, http://www.fda.gov/AnimalVeterinary/DevelopmentApprovalProcess/GeneticEngineering/GeneticallyEngineeredAnimals/ucm280853.htm.

[4] U.S. Food and Drug Administration, "AquAdvantage® Salmon Environmental Assessment In support of an approval of a New Animal Drug Application related to AquAdvantage Salmon, which are triploid, hemizygous, all-female Atlantic salmon (Salmo salar) bearing a single copy of the α-form of the opAFP-GHc2 recombinant DNA construct at the α-locus in the EO-1α lineage," November 12, 2015, http://www.fda.gov/downloads/AnimalVeterinary/DevelopmentApprovalProcess/GeneticEngineering/GeneticallyEngineeredAnimals/UCM466218.pdf.

As to the long-term health effects of eating transgenic salmon, the scientific consensus is that they are the same as the long-term effects of eating non-transgenic salmon, because they are substantially equivalent and functionally indistinguishable because they are identical and indistinguishable with respect to every characteristic relevant to health, safety, and nutrition.[5]

Some have claimed the health effects of eating transgenic salmon cannot be known without dedicated, long-term human feeding studies. But toxicologists and epidemiologists have long agreed that such long-term feeding studies are unnecessary, as reported by the US General Accounting Office:

> Monitoring the long-term health risks of GM foods is generally neither necessary nor feasible, according to scientists and regulatory officials we contacted. In their view, such monitoring is unnecessary because there is no scientific evidence, or even a hypothesis, suggesting that long-term harm (such as increased cancer rates) results from these foods. Furthermore, there is consensus among these scientists and regulatory officials that technical challenges make long-term monitoring infeasible.[6]

European Food Safety Authorities recently reaffirmed this consensus, noting that they "did not find any indication that a routine performance of 90-day feeding studies with whole food / feed would provide additional information on the safety of [GM foods] when compared to the compositional comparison of the GM variety."[7]

Alaskans are known for their independence, self-reliance, and skepticism of over-regulation. This is a case where the science and broad public interest are firmly on the side of letting innovation proceed.

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[5] U.S. Food and Drug Administration, "FDA Has Determined That the AquAdvantage Salmon is as Safe to Eat as Non-GE Salmon," November 19, 2015, http://www.fda.gov/ForConsumers/ConsumerUpdates/ucm472487.htm.

[6] US General Accounting Office, GAO-02-566, 2002.

[7] European Commission, Community Research and Development Information Service (CORDIS), "New insights on the safety of GM organisms - An EU-funded project has undertaken extensive feeding trials to further inform the debate on the safety of mandatory GM animal feeding studies in advance of an expected 2016 EU re-evaluation," Jan 28, 2016, http://cordis.europa.eu/news/rcn/124740_en.html.