

**ALASKA STATE LEGISLATURE
HOUSE RESOURCES STANDING COMMITTEE**

March 22, 2017

6:07 p.m.

MEMBERS PRESENT

Representative Andy Josephson, Co-Chair
Representative Geran Tarr, Co-Chair
Representative Dean Westlake, Vice Chair
Representative Harriet Drummond
Representative Justin Parish
Representative Chris Birch
Representative DeLena Johnson
Representative George Rauscher

MEMBERS ABSENT

Representative David Talerico
Representative Mike Chenault (alternate)
Representative Chris Tuck (alternate)

COMMITTEE CALENDAR

SPONSOR SUBSTITUTE FOR HOUSE BILL NO. 46

"An Act relating to the state and municipal procurement preferences for agricultural products harvested in the state and fisheries products harvested or processed in the state; relating to merchandise sold and certain fees charged or collected by the Department of Natural Resources; and providing for an effective date."

- MOVED SSHB 46 OUT OF COMMITTEE

HOUSE BILL NO. 172

"An Act relating to the regulation and production of industrial hemp; relating to industrial hemp pilot programs; providing that industrial hemp is not included in the definition of 'marijuana'; and clarifying that adding industrial hemp to food does not create an adulterated food product."

- MOVED HB 172 OUT OF COMMITTEE

HOUSE JOINT RESOLUTION NO. 12

Opposing the United States Food and Drug Administration's approval of AquaBounty AquAdvantage genetically engineered salmon; and urging the United States Congress to enact

legislation that requires prominently labeling genetically engineered products with the words "Genetically Modified" on the product's packaging.

- MOVED CSHJR 12(FSH) OUT OF COMMITTEE

HOUSE BILL NO. 87

"An Act relating to participation in matters before the Board of Fisheries and the Board of Game by the members of the respective boards; and providing for an effective date."

- BILL HEARING CANCELED

HOUSE BILL NO. 32

"An Act relating to the labeling of food; relating to the misbranding of food; requiring labeling of food produced with genetic engineering; and providing for an effective date."

- SCHEDULED BUT NOT HEARD

PREVIOUS COMMITTEE ACTION

BILL: HB 46

SHORT TITLE: PROCURE AK FISH/AG PROD.; ALASKA GROWN

SPONSOR(S): REPRESENTATIVE(S) TARR

01/18/17	(H)	PREFILE RELEASED 1/13/17
01/18/17	(H)	READ THE FIRST TIME - REFERRALS
01/18/17	(H)	STA, RES, FIN
03/08/17	(H)	SPONSOR SUBSTITUTE INTRODUCED-REFERRALS
03/08/17	(H)	READ THE FIRST TIME - REFERRALS
03/08/17	(H)	RES, FIN
03/15/17	(H)	RES AT 1:00 PM BARNES 124
03/15/17	(H)	Heard & Held
03/15/17	(H)	MINUTE(RES)
03/15/17	(H)	RES AT 6:00 PM BARNES 124
03/15/17	(H)	-- MEETING CANCELED --
03/17/17	(H)	RES AT 1:00 PM GRUENBERG 120
03/17/17	(H)	Heard & Held
03/17/17	(H)	MINUTE(RES)
03/20/17	(H)	RES AT 7:00 PM BARNES 124
03/20/17	(H)	Scheduled but Not Heard
03/22/17	(H)	RES AT 1:00 PM BARNES 124
03/22/17	(H)	RES AT 6:00 PM BARNES 124

BILL: HB 172

SHORT TITLE: INDUSTRIAL HEMP PRODUCTION LICENSES

SPONSOR(s): REPRESENTATIVE(s) DRUMMOND

03/10/17 (H) READ THE FIRST TIME - REFERRALS
03/10/17 (H) RES, JUD
03/15/17 (H) RES AT 1:00 PM BARNES 124
03/15/17 (H) Heard & Held
03/15/17 (H) MINUTE(RES)
03/15/17 (H) RES AT 6:00 PM BARNES 124
03/15/17 (H) -- MEETING CANCELED --
03/17/17 (H) RES AT 1:00 PM GRUENBERG 120
03/17/17 (H) Heard & Held
03/17/17 (H) MINUTE(RES)
03/20/17 (H) RES AT 7:00 PM BARNES 124
03/20/17 (H) Scheduled but Not Heard
03/22/17 (H) RES AT 1:00 PM BARNES 124
03/22/17 (H) RES AT 6:00 PM BARNES 124

BILL: HJR 12

SHORT TITLE: OPPOSING GEN ENGINEERED SALMON

SPONSOR(s): REPRESENTATIVE(s) TARR

02/22/17 (H) READ THE FIRST TIME - REFERRALS
02/22/17 (H) FSH, RES
02/28/17 (H) FSH AT 10:00 AM GRUENBERG 120
02/28/17 (H) Moved CSHJR 12(FSH) Out of Committee
02/28/17 (H) MINUTE(FSH)
03/01/17 (H) FSH RPT CS(FSH) NT 5DP 1NR
03/01/17 (H) DP: FANSLER, TARR, CHENAULT, KREISS-
TOMKINS, STUTES
03/01/17 (H) NR: EASTMAN
03/13/17 (H) RES AT 1:00 PM BARNES 124
03/13/17 (H) Scheduled but Not Heard
03/14/17 (H) RES AT 3:00 PM BARNES 124
03/14/17 (H) -- Continued from 3/13/17 Meeting at
1:00 PM --
03/20/17 (H) RES AT 7:00 PM BARNES 124
03/20/17 (H) Scheduled but Not Heard
03/22/17 (H) RES AT 6:00 PM BARNES 124

WITNESS REGISTER

PATRICK FITZGERALD, Staff
Representative Harriet Drummond
Alaska State Legislature
Juneau, Alaska

POSITION STATEMENT: Discussed the fiscal notes for HB 172 on behalf of Representative Drummond, prime sponsor.

L. VAL GIDDINGS, PhD
Biotechnology Innovation Organization
Silver Spring, Maryland

POSITION STATEMENT: Shared concerns in regard to HJR 12.

JERRY MCCUNE, President
United Fishermen of Alaska (UFA)
Cordova, Alaska

POSITION STATEMENT: Testified in support of HJR 12.

ACTION NARRATIVE

[6:07:02 PM](#)

CO-CHAIR GERAN TARR called the House Resources Standing Committee meeting to order at 6:07 p.m. Representatives Tarr, Josephson, Parish, Drummond, and Westlake were present at the call to order. Representatives Birch, Johnson, and Rauscher arrived as the meeting was in progress.

HB 46-PROCURE AK FISH/AG PROD.; ALASKA GROWN

[6:08:18 PM](#)

CO-CHAIR TARR announced that the first order of business would be SPONSOR SUBSTITUTE FOR HOUSE BILL NO. 46, "An Act relating to the state and municipal procurement preferences for agricultural products harvested in the state and fisheries products harvested or processed in the state; relating to merchandise sold and certain fees charged or collected by the Department of Natural Resources; and providing for an effective date."

CO-CHAIR TARR, as prime sponsor, explained that SSHB 46 relates to the product preference statute and the bill has been several years in the making. First introduced in 2014, it was deemed more information was needed. The Legislative Budget and Audit Committee since conducted an audit of purchases greater than \$200,000 and several ways were identified as not working. The bill's second part, she explained, would help the Division of Agriculture by giving the division receipt authority for the Alaska Grown logo so it could sustain its marketing efforts and perhaps make some dollars.

[6:10:10 PM](#)

CO-CHAIR JOSEPHSON moved to report SSHB 46 out of committee with individual recommendations and the accompanying fiscal notes.

[6:10:36 PM](#)

The committee took a brief at-ease.

[6:11:29 PM](#)

CO-CHAIR TARR announced that there being no objection, SSHB 46 was reported from the House Resources Standing Committee.

[6:10:41 PM](#)

The committee took an at-ease from 6:10 p.m. to 6:14 p.m.

HB 172-INDUSTRIAL HEMP PRODUCTION LICENSES

[6:14:25 PM](#)

CO-CHAIR TARR announced that the next order of business would be HOUSE BILL NO. 172, "An Act relating to the regulation and production of industrial hemp; relating to industrial hemp pilot programs; providing that industrial hemp is not included in the definition of 'marijuana'; and clarifying that adding industrial hemp to food does not create an adulterated food product."

[6:14:49 PM](#)

PATRICK FITZGERALD, Staff, Representative Harriet Drummond, Alaska State Legislature, on behalf of Representative Drummond, prime sponsor, addressed the fiscal notes for HB 172 on behalf of Representative Drummond, prime sponsor. He said a typographical mistake was made in the analyses of one of the fiscal notes and the mistake was corrected. The corrected fiscal note remains zero and is in the committee packet.

[6:15:22 PM](#)

REPRESENTATIVE PARISH asked where the lines of revenue would be in the industrial hemp pilot program.

MR. FITZGERALD replied that basically the pilot program is incorporated in the state, so all the revenues for it and all the reporting of the pilot program would be with the Division of Agriculture. The recording of the cultivations, sales, and so forth would also be done with the Division of Agriculture. The

Division of Agriculture currently keeps records of all the sales of all the crops in Alaska.

REPRESENTATIVE PARISH drew attention to page 2 of the bill, lines 5-9, which state, "The department shall establish fee levels for application, registration, and renewal of registration so that the total amount of fees collected under this section approximately equals the regulatory costs for regulating the industrial hemp industry." He asked whether this regulatory cost would include the cost of the pilot program.

MR. FITZGERALD answered yes.

[6:17:20 PM](#)

REPRESENTATIVE DRUMMOND, prime sponsor of HB 172, stated that farmers would like [the legislature's] permission to start planting hemp, a plant that has been around for centuries if not millennia. Farmers would like to get to work on improving the diversity of [Alaska's] farm products.

[6:17:46 PM](#)

CO-CHAIR JOSEPHSON requested clarification on the number of fiscal notes accompanying the bill.

MR. FITZGERALD explained that three fiscal notes accompany the bill: one from the Alcohol and Marijuana Control Office, [Department of Commerce, Community and Economic Development]; one from the Criminal Division, [Department of Law]; and one from the [Division of Agriculture], Department of Natural Resources.

[6:18:55 PM](#)

CO-CHAIR JOSEPHSON began a motion that was interrupted for purposes of clarification.

[6:19:22 PM](#)

The committee took a brief at-ease.

[6:19:22 PM](#)

CO-CHAIR JOSEPHSON moved to report HB 172 out of committee with individual recommendations and three accompanying fiscal notes.

There being no objection, HB 172 was reported from the House Resources Standing Committee.

[6:20:12 PM](#)

The committee took an at-ease from 6:19 PM to 6:22 PM, during which Co-Chair Tarr passed the gavel to Co-Chair Josephson.

HJR 12-OPPOSING GEN ENGINEERED SALMON

[6:22:30 PM](#)

CO-CHAIR JOSEPHSON announced that the next order of business would be HOUSE JOINT RESOLUTION NO. 12, Opposing the United States Food and Drug Administration's approval of AquaBounty AquAdvantage genetically engineered salmon; and urging the United States Congress to enact legislation that requires prominently labeling genetically engineered salmon and salmon products with the words "Genetically Modified" on the product's packaging. [Before the committee was CSHJR 12(FSH).]

[6:22:48 PM](#)

CO-CHAIR TARR, prime sponsor of HJR 12, provided a PowerPoint presentation entitled, "HJR 12: Opposing GM Salmon, Say No to Frankenfish." She said HJR 12 expresses the State of Alaska's opposition to approval of genetically modified (GM) salmon. Addressing slide 2 she explained that on November 19, 2015, the federal government [Food and Drug Administration (FDA)] approved the sale of genetically modified salmon. This is a big deal, she stated, because it is the first approval of a GM animal for human consumption; GM plants were approved in 1994. This approval is very specific: it is to one company, AquaBounty, and its one specific proposal [AquAdvantage Salmon].

CO-CHAIR TARR moved to slide 3 and described the genetic makeup of the approved fish as being an Atlantic salmon with genes from two other fish - the ocean pout, an eel-like fish, and the Chinook salmon. Showing slide 4 she explained that the Chinook gene makes the genetically modified fish grow bigger faster and the ocean pout gene makes it grow year-round, which is an interruption to the natural life cycle of a salmon. She pointed out that both salmon shown in the photographs are 18-month-old farmed salmon and that the genetically modified fish is twice as big and grew twice as fast to reach that size.

CO-CHAIR TARR showed slide 5 and said the motivation behind the genetically modified salmon has always been about profit, not sustainability. While the purpose of companies is to make a profit, she continued, this is really about looking at a way to produce a protein product in a faster amount of time for a lower cost. This is in contrast to the sustainable management of [wild] fisheries done in Alaska [slide 6]. Alaska is a world leader in sustainable fisheries management and this means something to Alaskans, she said. Alaska has managed its fish populations to assure abundance for commercial fishers and sport fishers, as well as people visiting Alaska to fish for salmon. Sustainability might mean something different to AquaBounty than it does to Alaskans, she posited. Turning to slide 7 she noted that Alaska's pollock fishery is sustainably harvested and pointed out that the Alaska Seafood Marketing Institute (ASMI) has been engaged in a multi-year process for certifying the Alaska fisheries that are managed on a sustained yield basis.

[6:27:10 PM](#)

CO-CHAIR TARR displayed slide 8 and explained how these genetically modified salmon would be grown to full size. The eggs would be raised on Prince Edward Island (PEI) in Canada and then shipped to Panama to be raised in land-based pens. Upon harvest, the fish would be shipped to the U.S. The involvement of three countries to produce this genetically modified fish is interesting given that AquaBounty is based in Massachusetts. From conversations with people intimately involved in this, she understands that AquaBounty wouldn't try a proposal like this in the U.S. because the company doesn't think it would get support. Therefore, the company has taken this proposal around the world to figure out the locations where it can happen. The actual proposal approved by the [FDA], she continued, is specific to the eggs being raised on Prince Edward Island, the fish being raised in Panama, and the product being sold in the U.S.

CO-CHAIR TARR turned to slide 9 and stated that concerns with genetically modified salmon include the threat to wild salmon, the risks to human health, and the risks to [Alaska's] economy. Moving to slide 10 she elaborated that the threat to wild salmon is posed from escapement. For example, farmed [Atlantic] salmon being reared in Washington and British Columbia have escaped and been caught by fishermen in Alaska. The Alaska Department of Fish and Game makes announcements to fishermen throughout Alaska requesting that fishermen report any farmed-raised fish that they see. At the federal level, the U.S. Fish and Wildlife

Service (USFWS) and the National Oceanic and Atmospheric Administration (NOAA) have recognized these risks.

CO-CHAIR TARR referred to slide 11 and noted that some folks may question why there is concern because the AquaBounty salmon would be raised in land-based pens. However, she pointed out, the AquaBounty facility [on PEI] is adjacent to Fortune Bay which empties into Northumberland Strait that then goes to the St. Lawrence Seaway and the Atlantic Ocean. Any issues at this facility could result in the potential for escapement. Turning to slide 12 she said she visited the facility in 2013 prior to the FDA's approval and met with people from Prince Edward Island and Panama who were concerned and interested in opposing this. Prince Edward Island is known for its tourism, she said, and now when the island is researched online articles about the Frankenfish are the first things to come up and there is concern about PEI being known as the home of the Frankenfish as that may deter people from visiting. Co-Chair Tarr explained that the facility has traps in its drain systems to prevent escapement, which are pointed to by those people who say there shouldn't be cause for concern about escapement. However, she continued, she remains uncomfortable because there would be no access to this facility by U.S. regulators, which would limit the ability of the U.S. to have influence on the safety of this facility.

[6:32:14 PM](#)

CO-CHAIR TARR displayed slides 13 and 14 and elaborated further on the threats to wild salmon. She reported that millions of comments were received during the comment period for this proposal. Right after the comment period closed, McGill University in Canada published a research report that found these genetically modified salmon could interbreed with wild brown trout and, most alarming, the hybridized fish could out-compete both the GM salmon and the wild [brown trout]. Such interbreeding and the overtaking of the natural species is the reason for concern about escapement, she continued. While some folks might say the risk for escapement is low, she wants to err on the side of being very conservative about this because Atlantic salmon runs have been stressed from overharvesting and much restoration work is taking place. On the West Coast, dams are being removed to allow natural fish passage. The Bristol Bay fishery of Alaska is extremely important ecologically because it is one of only a few wild fisheries; most of the other Alaska fisheries have some hatchery fish to stock the fisheries. Another risk from farmed salmon, Co-Chair Tarr pointed out, is the spread of diseases to wild salmon that arise

from the less healthy environment of the farm pens and that are unnatural to the wild salmon.

6:35:02 PM

CO-CHAIR TARR turned to slide 15 to address the risks to human health. There is controversy regarding genetically modified foods and human health, she allowed. Relative to GM salmon, humans would be eating the foreign deoxyribonucleic acid (DNA) along with the growth hormones. Of concern is the way in which the FDA assessed the safety for genetically modified salmon. It wasn't evaluated as a food product, she explained, but rather it was evaluated under the veterinary drug protocols. For some people, that calls into question all the information and is a reason why people have strong concerns about whether it was properly evaluated for health risks.

CO-CHAIR TARR moved to slide 16 to discuss the risks to Alaska's economy. She recalled that the first introduction of farmed salmon caused a dramatic price decrease for wild salmon. This led to establishment of the Alaska Seafood Marketing Institute (ASMI) and the state making significant efforts to market Alaska wild salmon and all its health benefits. These efforts have been very successful - Alaska's wild salmon is now one of the most well recognized brands nationwide. Genetically modified salmon coming to the market could undermine the confidence in Alaska wild salmon, Co-Chair Tarr posited. This is why Alaska's past and present congressional delegation has been fighting at the federal level for mandatory labeling. If consumers were unable to differentiate Alaska wild salmon from farmed salmon they may choose not to buy any salmon at all, which would be very harmful to Alaska.

6:37:08 PM

REPRESENTATIVE DRUMMOND requested an explanation of the meaning of veterinary drug protocols.

CO-CHAIR TARR replied that instead of using the process for evaluating a food product the FDA used the process for evaluating a veterinary drug protocol. The question is whether that effectively assesses whether there is any health risk because it needs to be understood from the aspect of a human eating this rather than it being used as a veterinary drug. This is very unusual, she said. There is no precedent for this because this would be the first time that a genetically modified animal is approved for human consumption. If this goes forward,

a better system needs to be developed, Co-Chair Tarr posited. Talk about this needs to continue because the AquaBounty web site used to list several other species that the company was interested in also producing as genetically modified food products. Now its web site has transitioned away from that and only focuses on salmon. If this continues and other products are going to be evaluated, Tarr added, then there needs to be a standard that evaluates it as a product that a person eats and whether there is a health risk associated with that.

REPRESENTATIVE DRUMMOND inquired whether the FDA evaluated the drugs that were used on the fish or evaluated the fish as if it were a veterinary drug.

CO-CHAIR TARR responded it was the latter; the FDA evaluated the fish through the veterinary drug process.

REPRESENTATIVE DRUMMOND said she is confused because veterinary means animals - dogs, cats, horses, cows. She asked whether the FDA evaluated it as to its effect on animals eating these fish.

CO-CHAIR TARR answered, "Those type of evaluations that were considered in the overall evaluation were considered low risk because of the land-based operations." Whether it was done in a substantial enough way is one of the criticisms.

REPRESENTATIVE DRUMMOND offered her understanding that this is being considered a land-based operation even though it is on the edge of a river.

CO-CHAIR TARR replied yes and estimated that the facility is about 200 feet away from a small stream that flows into Fortune Bay. She offered her belief that there is question about the safety of the facility. The fish would be grown in land-based pens and the evaluation process states there would be little opportunity for escapement. A big criticism is whether this was fully evaluated for any of these potential impacts. There are reasons for concern, she said. Even those things with a low likelihood need to be addressed because the worst must be planned for. While it was said that there would be little opportunity for interbreeding, the question is whether one is willing to take that risk and what that risk means in terms of influence to a wild population, and her position is no.

[6:42:03 PM](#)

REPRESENTATIVE DRUMMOND inquired whether the AquaBounty facility is using water from the creek that it is situated near. She commented that the hatchery pictures in the presentation look similar to the new hatchery in Anchorage, which is located next to Ship Creek but uses well water.

CO-CHAIR TARR responded that these are the facilities located in Panama. She said she has no pictures of the [Canadian] facility because it is fenced, and the fence seen behind her [on slide 12] is as close as one can get. About 50 feet from where she is standing in the photo is a little creek that empties into Fortune Bay, she continued. It is not that these factors weren't considered in the proposal, but rather the thinking that the safety protocols in place like the traps and water sources would limit the potential of something bad happening. While it is probably true that in most circumstances things will work correctly, she said she is more worried about when things go wrong and there are a variety of reasons that that could happen.

REPRESENTATIVE DRUMMOND observed that the first item on slide 15 states, "People who eat the GM salmon will be eating the foreign DNA, along with the growth hormones." She offered her understanding that growth hormones or hormones used on cattle and other animals have been implicated in the early onset of puberty in girls. She inquired whether the hormones [added to the fish in this proposal] were part of what the FDA evaluated.

CO-CHAIR TARR answered that many people don't think they were evaluated properly because it wasn't evaluated as a food product. Care must be taken in talking about hormones, she noted. The growth hormone used in dairy and beef has been very controversial and some companies have a specific disclaimer on their products that say they don't use this growth hormone because of the concern about what it does to growing young people. Endocrine disrupter hormones mimic natural sex hormones like estrogen, she continued. When used in personal care products, for example, they end up in the water system and those are the hormones causing the impacts of early onset of puberty.

[6:45:12 PM](#)

REPRESENTATIVE PARISH shared his belief that HJR 12 is a wise bill and said it is important to oppose this sort of thing early. While the AquaBounty proposal is on the opposite side of the continent, if it is a success it won't be long before the company is looking to have one on the Pacific side too. The farmed fish industry has demonstrated an inability or

unwillingness to contain its product, he continued, and he wouldn't be surprised if farther down the line the company started to say that it could save a lot of money by moving from land-based to net pens. He asked whether there is any prospect of the FDA reassessing this as a food for human consumption rather than as a veterinary drug.

CO-CHAIR TARR replied yes, as recently as last summer there was some concern and some additional meetings. The FDA received over 300,000 written comments on some of the issues that came out of that process. Displaying slide 17, she said she stands with Senator [Lisa] Murkowski and other folks on following this until it's a done deal. Dozens of Alaska fishing groups and retailers have said they oppose it and won't sell it. Alaska's congressional delegation has come out in opposition. Forty members of Congress oppose it and that number probably needs to be updated with the new Congress. Millions of comments were against [approval of genetically modified salmon] plus there are the retailers.

CO-CHAIR TARR turned to slide 18 and reported that since this was approved there has also been international opposition. Folks in Canada unsuccessfully sued their government, but have since filed another lawsuit. Moving to slide 19 she said litigation is continuing in the U.S. and it goes back to approval through the veterinary drug protocol. So, it is an unresolved matter. She noted she is a botanist by training and was a student when the federal government approved genetically modified plants and said there were many reasons for concern about that. The pitch [to the public] in 1994 was that genetically modified foods are needed to feed people. Now, more than 20 years later, there are still a lot of hungry people. Many countries will not grow some of those products. Even after Haiti was ravaged by weather, Haitian farmers turned down the genetically modified seeds that they were given.

CO-CHAIR TARR said her observation is that there is enough food out there. For example, Americans produce and throw away enough food to feed half the U.S. on an annual basis. It is not a lack of food production, but rather a lack of access that is much more related to a person's economic status, she advised. People with money have access to food and those without money don't. Alaska is striving to be the model of sustainable fishery management, she continued, and she would like to move towards making others be more sustainable with their wild fish populations and not overharvest. Rebuilding fish populations like the East Coast is doing should be what is looked at as the

solution, not producing a genetically modified product in a land-based pen. It is not a done deal, she said, and she applauds Senator Murkowski's work for mandatory labeling so that if stopping this is unsuccessful people will at least have the opportunity to know which salmon is genetically modified and which is wild and can make an informed consumer choice.

[6:51:01 PM](#)

CO-CHAIR JOSEPHSON opened public testimony on HJR 12.

[6:51:18 PM](#)

L. VAL GIDDINGS, PhD, noted his PhD is in animal genetics from the University of Hawaii. He said he has been intimately involved for three decades in biotechnology regulations, safety assurance, and policy in the U.S. and around the world. He spent a decade working for the U.S. Department of Agriculture conducting safety assessments for transgenic crops. He has been following the AquAdvantage salmon for at least 25 years. He said salmon is his favorite fish to eat and there is no better salmon than Alaska's. Therefore, he continued, he is puzzled by some of this evening's testimony because [the AquAdvantage] salmon was actually developed in no small part to address and reduce the threats to wild salmon and to provide an increased source of high quality fish protein at lower prices than is available in many parts of the world today which are too far away to access Alaska's salmon in an economical manner.

DR. GIDDINGS said the comments heard about the potential hazards associated with this salmon are in general contradicted by the facts. Concerns that the AquAdvantage salmon might threaten wild populations are entirely misplaced for a number of reasons, he stated. Salmon lay their eggs in clear, gravel-bottomed, fresh water streams in the headwaters of major rivers on the West Coast. "The salmon in the Prince Edward Island facility that AquAdvantage uses to produce their eggs would be the water that is a football-pitch distance from that facility is not fresh water, it is salt water," he continued. Salmon eggs that meet with salt water at that stage of development suffer a very quick fate of death, he said. Even if these fish were to survive an escape from the egg rearing facility or from the contained concrete tanks that AquaBounty is presently using in the Panamanian highlands, or from tanks that AquaBounty ultimately hopes to situate in the American Mid-West in order to have its production facilities close to major population centers, and make their way into the Pacific and find their way

into habitats shared by Alaska's wild salmon, they would still pose substantially less threat than those salmon already face from the sea pens on the West Coast for the simple reason that these AquaBounty/AquaAdvantage fish are sterile and therefore incapable of reproducing.

DR. GIDDINGS stated that while [the AquaAdvantage salmon] grow year-round they do not actually grow to any larger size than normal; they just reach that size more rapidly than conventionally farmed fish. Growing year-round means they must eat year-round. The reason wild salmon don't grow through the winter, he noted, is because they are adapted to winter conditions in which food is rare to non-existent, so they don't eat. If these feedlot salmon were in the wild population, then they would starve to death during the first winter. Even if these salmon did escape and encounter wild Alaska salmon - and the potential for that is virtually zero because of where they are being grown - the GM salmon are incapable of competing or threatening the wild salmon's habitat because they cannot survive a winter and are sterile. Therefore, these concerns about potential threats are entirely misplaced, he said.

DR. GIDDINGS addressed the statement that was made about the FDA's approval process being faulty because the review was under the animal drug provisions rather than under food provisions. He said he was at the three days of testimony held by the FDA on September 19-21, 2010. The FDA's review was done under the new animal drug provisions of the federal Food, Drug, and Cosmetic Act, he continued, and after reading well over 1,000 pages of documents laying out exactly the details the FDA went through in reviewing this proposal, he can say that the new animal drug provision review was much more rigorous than the normal food safety approval process. It included explicit examination of the potential for any negative consequences or surprises for humans or other animals to consume this salmon, Dr. Giddings said. The FDA found that the GM salmon is nutritionally indistinguishable from any other salmon. The hormone levels present in the GM salmon are so low as to be undetectable with the best available immunological screening methods, he added. Every reasonable question that could be asked about the safety of this fish either for human consumption or in terms of potential environmental impacts should the fish escape and against all odds manage to survive, has been asked and the answers documented in the abundant literature posted on the FDA's web site. This literature documents more than 10 years of rigorous specific evaluations conducted on this salmon by the

FDA. The concerns have been raised, examined thoroughly, and found to be without foundation, Dr. Giddings concluded.

6:59:11 PM

REPRESENTATIVE BIRCH noted that "ich" [ichthyophthiriasis] has afflicted some of Alaska's natural salmon, specifically in the lower Yukon [River]. He offered his understanding that it has something to do with warmer water and it degrades the salmon. He asked whether wild salmon populations eventually would be able to protect themselves from [ichthyophthiriasis].

DR. GIDDINGS replied that ichthyophthiriasis is caused by a fungus [of the genus] *Ichthyophthirius*. He said he is unaware that ich has historically been a significant problem for wild salmon, but is well known to people who keep fish in aquaria. It requires and thrives in warmer water and generally tends not to be a problem in cold water, which is the essential habitat for salmon. It is possible to imagine ways in which genetic techniques might be used to improve salmon stocks so that they have improved levels of resistance to ichthyophthiriasis or other disease, he added, although he is unaware of anyone specifically working on that with salmon in particular. However, he continued, it is not something that would be of any specific concern under the conditions being talked about for raising these AquAdvantage salmon, which is intended to be done in closed-circuit concrete containment facilities inland far from any ocean waters and far from any tributaries that feed into ocean waters.

REPRESENTATIVE BIRCH said he understands that this naturally occurring disease has been a problem with degrading some of the natural salmon stocks. He added that he is very intrigued about the genetic options or the potential for improving or addressing these long-term concerns because, for example, the Hawaiian papaya crop is considered a genetically modified organism (GMO) success story. When Hawaii's papaya crops cratered in the mid-1990s from ring-spot virus, [they were replaced by] the rainbow papaya, a GMO papaya that now has 77 percent of the market.

7:02:36 PM

REPRESENTATIVE PARISH drew attention to the diagram of the proposed onshore facility in the sponsor's presentation, which shows the intake, all the way around through the fish tank, the various levels of treatment, and out to discharge to fresh or seawater. He asked whether Dr. Giddings is familiar with that.

DR. GIDDINGS responded that he doesn't have the aforementioned diagram in front of him, but is familiar with the facilities at Prince Edward Island as well as those in Panama and is willing to address questions about the facilities.

REPRESENTATIVE PARISH, regarding the levels of bacteria control and treatment for diseases that can sometimes explode in this sort of facility, inquired how all the antibacterial agents would be removed from the water before the discharge to fresh or seawater phase.

DR. GIDDINGS answered that protocols for closed-circuit systems of this sort are very well developed. A variety of efficient filtering and treatment techniques are available to remove from the water any bactericides or antibiotics used to treat a problem. It is important to realize, he continued, that the PEI and Panamanian facilities do not produce a large amount of effluent. These facilities are very different from most of the conventional hatcheries throughout the western U.S. and Alaska, which often do have substantial effluent and which effluent can contain significantly elevated levels of nitrogenous or phosphorous wastes from the fish food and fish excrement. The PEI and Panamanian facilities are closed-circuit systems where the water is re-circulated and filtered through active charcoal, sand, and micro-pore filters of various sizes. Any antibiotics or other compounds can be removed by autoclaving/sterilization. The closed system is much more easily controlled than is the case with most traditional hatcheries.

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REPRESENTATIVE PARISH requested Dr. Giddings to send information on the facilities currently in Panama because he is interested in knowing what the standard is there. If something is done in one place it can be done in another, he posited, and so he would be interested in knowing what is being done there now.

DR. GIDDINGS agreed to try to do that, but said it would likely not be until early April due to other obligations he already has. Regarding the Panama facility, he said it is not correct to say that AquaBounty avoided basing facilities in the U.S. out of fear it wouldn't get approval. AquaBounty has received approval from the FDA as always intended because the U.S. is the primary market. The PEI facility was chosen because it was an available excellent facility and not far from the company headquarters in Massachusetts. Most importantly, he continued,

the researchers who developed this technological innovation are Canadian and they wanted to have the facility based in Canada for reasons of their own personal national pride. The adult rearing facility was placed in Panama because Panama offered AquaBounty some very lucrative concessions to put the facility there.

DR. GIDDINGS further elaborated that putting the facility in Panama provided a profound level of additional bio-security because the facility is in the Panamanian Cordillera at a high elevation of about 4,500 feet, which is necessary to provide a cool enough climate and cool enough water to sustain salmon in those tropical latitudes. The stream abutting the facility feeds into a river that flows into Lake Gatun, a manmade lake that is part of the Panama Canal. About 10 miles downstream from the facility the water that any escaping salmon would encounter is brown, muddy, and about 20 degrees higher than the maximum temperature that salmon can tolerate. So, Dr. Giddings continued, if salmon did manage to escape from the Panama facility they would not survive their encounter with the waters of Lake Gatun. Even if these fish made their way from that facility through this muddy warm water of Lake Gatun, out through the locks into the Pacific Ocean, and up to Alaska, they are sterile and would die the first winter and would therefore represent a reduction in the potential hazard compared to that from Atlantic salmon in existing sea pens in the Northwest.

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CO-CHAIR JOSEPHSON observed from his iPad that Dr. Giddings is an independent consultant.

DR. GIDDINGS replied that's correct.

CO-CHAIR JOSEPHSON asked whether Dr. Giddings is [working for] AquaBounty.

DR. GIDDINGS responded no and said it is a frustration to him because he has known the people working on this for 25 years and the founding chief executive officer (CEO) has been a friend for many years. He related that he has told AquaBounty for a long time to hire him, but the company has a very low budget, so he has given his work and time pro bono because he believes in what the company is doing. He is not on AquaBounty's payroll and has never been on its payroll for anything remotely related to the salmon. His opinions are his own, he continued, and are based

on his long intimate knowledge of following this fish with great personal and professional interest.

CO-CHAIR JOSEPHSON inquired whether Dr. Giddings has ever visited the PEI facility and the Panama holding tanks.

DR. GIDDINGS answered no he has not visited the PEI facility, but said he has talked with AquaBounty at length about it and has reviewed diagrams, pictures, and videos of it. He has looked closely at all the FDA documents that examine both the PEI facility and the Panama facility in detail, he continued. He has not been to the Panama facility proper, but has been within about 5 miles of it and is familiar with the watershed it sits on and the river that flows into Lake Gatun.

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REPRESENTATIVE DRUMMOND asked from where Dr. Giddings is calling.

DR. GIDDINGS replied he is calling from Silver Spring, Maryland, and added that he has spent much of his career working in and around Washington, DC, as a regulator and an advisor to the Congressional Office of Technology Assessment.

REPRESENTATIVE DRUMMOND inquired whether Dr. Giddings has ever visited Alaska's clean waters and its newest fish hatchery.

DR. GIDDINGS responded no, but said that it's at the top of his bucket list.

REPRESENTATIVE DRUMMOND suggested Dr. Giddings come take a look because she objects to his characterization of Alaska's fish hatcheries. She noted that Alaska's new fish hatchery is in downtown Anchorage and rears millions of all the types of wild game fish that exist in Alaska. This hatchery won a Leadership in energy and Environmental Design (LEED) award for energy efficiency and for its incredible ability to clean. She further noted that the hatchery is able to clean 95-99 percent of the fish excrement from the water. Having visited and seen how this hatchery works, she urged that Dr. Giddings do the same in the near future.

DR. GIDDINGS answered that it is on his list. He apologized for saying anything that was taken as disparaging of this facility as that was not his intent because he is aware of the hatchery and agrees it is world class. The comments he made about some

hatcheries having problems with nitrogen and phosphorous effluent do not apply to this facility, nor is he aware of any facilities in Alaska to which they would apply. However, he continued, those comments are relevant to some facilities that he has visited in Idaho, Washington, and Oregon and that is where those problems were discovered, which prompted the kinds of measures that led to the superb LEED facility in Anchorage. Alaska has certainly set a world standard there, he added, and he didn't mean to say anything to suggest otherwise.

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CO-CHAIR TARR said she noticed at another committee meeting that Dr. Giddings had a company affiliation but tonight he is listed as an independent consultant. She asked whether Dr. Giddings is receiving payment to provide testimony tonight by a company other than AquaBounty.

DR. GIDDINGS replied that if he listed a company before it was probably his consulting company, PrometheusAB, Inc. He said he was asked by Biotechnology Innovation Organization (BIO) to testify before the committee this evening, but BIO is not paying him to do so.

CO-CHAIR TARR noted that [BIO] was the affiliation listed by Dr. Giddings the other evening. She requested that in the interest of transparency, [Biotechnology Innovation Organization] be listed as his affiliation for this evening.

DR. GIDDINGS answered that it is fine with him if Biotechnology Innovation Organization is listed as his affiliation.

7:15:45 PM

JERRY MCCUNE, President, United Fishermen of Alaska (UFA), Cordova, Alaska, noted that UFA is the largest fishing organization in Alaska. Canada's fish farms currently have a real lice problem, he pointed out, and he does not trust Canada not to bring [the AquaAdvantage salmon] back and raise them in Canada, which is very close to Alaska's borders. Sterile or not, non-native species in Alaska's streams are not wanted. [The public] was told that Atlantic salmon would not survive this far north, he recalled, but they've been found in Alaska's streams and in fishermen's nets and are possibly trying to spawn in the state, which would be devastating to have non-native species. While Alaska is not under threat by this [GM salmon] yet, he said, it is a possibility that [AquaBounty] will try to

do it in Canada should it become a success. Regarding labeling, Mr. McCune stated that UFA has been behind labeling salmon for a long time because UFA thinks people should, for their own good, know what they are consuming.

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CO-CHAIR JOSEPHSON closed public testimony after ascertaining no one else wished to testify.

CO-CHAIR TARR spoke to the ability of the U.S. to regulate this genetically modified product. She related that the FDA's web site, "fda.gov", states that the particular conditions of use allow production and grow-out of AquAdvantage salmon at two facilities - Prince Edward Island in Canada and Panama. She read as follows from the web site: "As we state in the environmental assessment, because these facilities are outside the United States and because NEPA [National Environmental Protection Act] does not require analysis of impacts in foreign sovereign countries, the EA [environmental assessment] considered environmental impacts in Canada and Panama only to the extent necessary to determine whether there would be significant effects on the environment in the United States due to exposure pathways originating from the facilities in Canada and Panama." So, she advised, keep in mind that the U.S. has no ability to make sure that these are well-regulated facilities and to think about the harm that that could cause.

CO-CHAIR TARR continued reading further from the FDA web site: "FDA does not have jurisdiction to regulate potential facilities that would be located outside the United States that would produce fish for export to countries outside the United States. FDA also does not regulate products that are produced outside the United States and will never enter U.S. commerce. Although FDA does have jurisdiction to regulate facilities in the United States and products imported into the United States, the FDA's approval does not allow production and grow-out of AquAdvantage salmon in any facilities other than those in Canada and Panama." So, she said, it should be clear that [the U.S.] does not have the ability to regulate those.

CO-CHAIR TARR spoke to the statement that Canada was chosen because of Canadian pride and said it is almost laughable and is absolutely not true. She related that AquaBounty tried to get U.S.-based facilities, but there were significant protests in opposition and as a result AquaBounty had to seek facilities outside of the U.S.

CO-CHAIR TARR spoke to the statement about sterility. She said research has shown that in up to 5 percent of the cases sterility is not true, and therefore it is a real concern. Since it is unknown how these facilities would be regulated because they are outside the U.S., there are real reasons to be concerned and that is why she is putting HJR 12 forward at this time. She offered her hope that committee members are also concerned and willing to support the resolution.

CO-CHAIR JOSEPHSON asked whether Co-Chair Tarr stated for the record what she is reading.

CO-CHAIR TARR replied yes, it was from the FDA web site's response to public comments on the environmental assessment. She reiterated that this is concerning because the facilities are outside the U.S.'s jurisdiction for regulation so there is no opportunity to ensure it is done the way the U.S. might want. Having been to the AquaBounty facility in Canada, she continued, she does not have a high level of confidence in the facility's location and the ability for it to not be problematic.

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REPRESENTATIVE WESTLAKE stated he would like to entertain a motion of moving the resolution forward given the wait since 2013, the federal delegation already being in line, and the great people of Alaska who catch fish.

REPRESENTATIVE WESTLAKE moved to report CSHJR 12(FSH) out of committee with individual recommendations and the accompanying fiscal notes. There being no objection, CSHJR 12(FSH) was reported from the House Resources Standing Committee.

[7:21:36 PM](#)

ADJOURNMENT

There being no further business before the committee, the House Resources Standing Committee meeting was adjourned at 7:22 p.m.