Protecting Oregon's Salmon from Genetically-engineered Salmon and the Culture of Atlantic Salmon

Testimony in Support of House Bill 2530

Agriculture and Natural Resources Committee
Oregon Legislature
March 21. 2013

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My name is Jack Williams and I am the Senior Scientist for Trout Unlimited, a national organization dedicated to the conservation of coldwater fishes, such as salmon and trout, and their habitats. I am here today representing both our national organization and our Oregon Council, including our local chapters and members in Oregon.

Trout Unlimited strongly supports HB 2530. We support this bill because of the threats that genetically-engineered salmon and the culture of Atlantic salmon would pose to the wild salmon resources of the state. Let me briefly describe what I believe to be the most significant threats from each of these.

Importation of genetically-engineered salmon would threaten Oregon's wild salmon resources

- Escaped genetically-engineered salmon would have a short-term advantage over native salmon stocks and could compete with them for food, spawning habitat or other needed resources

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- There would be a small, but existing, risk of escape and genetic contamination with native stocks[1]
- If introduced into food markets, GE salmon could erode consumer confidence in existing salmon products and harm existing fishing industries
- Allowing genetically-engineered fish into the state would encourage future experimentation with GE fish products, which could lead to a variety of new and unknown threats

Farming of Atlantic salmon would threatened Oregon's wild salmon resources

- Escaped Atlantic salmon could naturalize and compete with native salmon for food and spawning habitat[2]
- Escapes of Atlantic salmon from net pens are inevitable[3]
- Farmed Atlantic salmon are a source of parasites and diseases that would pose harm to native fish[4]
- Fish farms are a source of pollution in areas that are otherwise high quality and important habitat for existing fisheries[5]

The citizens of Oregon are naturally blessed with many healthy and fishable stocks of salmon across much of the state. These resources are of great value to the state. Recreational fishing, for example, provides more than $441million in economic benefits to Oregon.[6] Native salmon not only provide substantial economic benefits to the state, but they are important to our culture and are an icon of Oregon and the broader Pacific Northwest.

Once genetically-engineered or farmed Atlantic salmon escape into our estuaries or rivers, their removal or recapture will be nearly impossible and we will be forced to endure the impacts of these fish.

Simply stated, the risks are too great. Our existing fisheries are too valuable to place in jeopardy. The best use of our collective resources is to protect, restore and benefit from the natural bounty that is provided by the many species and distinct stocks of Pacific salmon that occur throughout the state.

Thank you for this opportunity to speak today about the salmon resources that so many of us in this state hold dear.

Endnotes

[1] Estimates of sterility in GE salmon are 95-99%, but even if these estimates are accurate, a small percentage could be reproductively successful. Further, if culture of GE salmon would become more common, there is uncertainty whether protocols to induce sterility would be followed.

[2] 7.472 Atlantic salmon were reported to have escaped net pens off British Columbia in 1997. By 1999, escaped Atlantic salmon were documented to spawn and successfully reproduce in streams on Vancouver Island (see Volpe, J.P. et al. 2000. Evidence of natural reproduction of aquaculture-escaped Atlantic salmon in a coastal British Columbia river. Conservation Biology 14:899-903.)

[3] Up to 2 million Atlantic salmon escape from fish farms in the North Atlantic each year because of storms fouling netting, predators destroying netting, or human mistakes. Scientists in Ireland have documented large-scale escapes and resulting loss of natural salmon stocks in the North Atlantic (see McGinnity, P. et al. 2003. Fitness reduction and potential extinction of Atlantic salmon, *Salmo salar*, as a result of interactions with escaped farm salmon. Proceedings of the Royal Society of London 270:2443-2450.)

[4] One common problem is the spread of sea lice from salmon in net pens as wild juvenile salmon swim past the farm facilities. The problem has been studied extensively off the British Columbia coast. Canadian scientists have documented parasite loads that are up to 73x those of natural conditions for wild salmon migrating past Atlantic salmon farms. They also documented reproduction of these transferred sea lice, which increased infestations even further (see Krkosek, M. et al. 2005. Transmission dynamics of parasitic sea lice from farm to wild salmon. Proceedings of the Royal Society of London 272:689-696.)

[5] Results from a variety of studies show that about 21% of Nitrogen and 53% of Phosphorus used in feeds ends up in ocean sediments as a result of feed wastage and fish excretion from coastal fish pen facilities (see Wu, R.S.S. 1995. The environmental impact of marine fish culture. Marine Pollution Bulletin 31(4-12):159-166)

[6] Dean Runyan Associates. 2009. Fishing, hunting, wildlife viewing, and shellfishing in Oregon: 2008 state and county expenditure estimates. Report to Oregon Dept. Fish and Wildlife and Travel Oregon. Portland, OR