

## **Policy Memo**

Date: Nov 27 2011

To/Audience: Bureau of Land Management, Fish & Game, Coastal Commission

From: Alyssum Pohl, Wild Salmon Center

Subject: Avoiding spread of disease from aquaculture

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### **Infectious Salmon Anemia wreaks havoc**

In many parts of the world, aquaculture exists without sufficient precautionary measures to safeguard the existing local environments. While aquaculture may contribute to overfishing, pollution in local waters from debris and waste, and escaped farmed fish, it also serves as a potential vector for spreading disease. Most recently, officials in British Columbia thought they had seen infectious salmon anemia virus (ISA) for the first time in wild Pacific salmon, and let us not forget the 2009 collapse of Chilean salmon industry due to the same disease. We must not allow this devastation to occur in the United States.

Atlantic salmon carry ISA in the wild, but are unaffected since they have robust immune systems. In captivity, however, they are kept in cages more densely than they would be found in the wild which weakens their immunity, and allows the otherwise latent ISA virus to become fatal. British Columbian and Chilean farmers raise Atlantic salmon, although these fish are not endemic. When the farmed fish succumb to the disease, they are not the only group affected (in and of itself, an animal welfare issue). Industry, of course, loses quite a bit of money with such casualty. Local communities also suffer when industry collapses 90% as it did in Chile. And while the upset in B.C. about Pacific salmon contracting ISA--allegedly from the farmed Atlantic stock--was ultimately inconclusive, the potential for exotic disease to be spread should not be ignored. If wild stocks of salmon do contract ISA, their demise could further threaten other animals in the ecosystem that depend on them for food, like bears and whales. In addition, native people, who deem salmon sacred in the Northwest, would be spiritually depressed.

Pacific salmon are currently one of the best-managed wild stocks of fish in the world. The population is abundant and healthy, and the amount of fish harvested each year is well documented, regulated and enforced. In a world where this is the exception to the rule of overfishing, we should take extra precautionary measures to ensure that the stock is protected, now and for future generations. To accomplish this, more stringent monitoring and research must take place, with mandated regular review, as the basis for responsible and current policy decisions.

## **Options**

### ***Ban on Coastal Salmon Farming, Move Salmon Farming Inland***

Pros: Banning salmon farming on the coast would eliminate the problems of escaped individuals, polluted local waters, and disease spread. Farming inland in recirculating tanks ensures complete control of inputs and outputs including food, disease, and microbes. With this option, you would have the support of environmentalists, native tribes, and concerned local citizens.

Cons: Moving salmon farming inland to recirculating tanks would be an incredibly expensive endeavor, and it would raise the market price of salmon significantly.

Farming in recirculating tanks is energy intensive. Locating appropriate sites for these businesses could be difficult. Industry personnel would oppose this option.

### ***Strengthen Monitoring and Research while Protecting Wild Areas***

Pros: We do not understand how or if ISA is transferrable between two separate species of salmon. Increased mandates and funding for this type of research could inform future coastal and marine spatial planning decisions. Even though current aquaculture farms are monitored, the frequency is low and the transparency of such monitoring is weak. Public record of testing is not always available. Testing for ISA could piggyback with monthly monitoring schemes already in place for sea lice<sup>1</sup>. Protecting wild rivers from aquaculture ventures until we understand more about disease spread is an active precautionary measure. Universities, which would support the technical details of

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<sup>1</sup> The Fish Site. Sea Lice Management in British Columbia. Accessed Dec 1, 2011. <<http://www.thefishsite.com/articles/847/sea-lice-management-in-british-columbia>>

testing and research, would support such an option. Some environmentalists would appreciate the efforts made toward understanding the ecology of these waters better. Industry could stand to benefit from knowing more about their operations, and might gain efficiency. Local communities would appreciate increased transparency.

Cons: This option might not be robust enough to stave off disease spread, which could have long-lasting, devastating effects on the local ecology. Some people might not think this option is precautionary enough.

### ***Maintain Status Quo***

Pros: To continue as we have been conducting business is the cheapest and easiest option. Industry will likely support this option.

Cons: Maintaining status quo ignores the possibility that we may be introducing devastating disease into an otherwise fairly pristine ecosystem. Environmentalists, local community members, and native tribal groups are concerned that motivations are too money-driven, without respect to their heritage or the health of the ecosystem.

### **Need for Precautionary Approach**

Without more robust policy and enforcement in place to safeguard against issues like overfishing and the spread of disease, humans play a risky dice game against the environment. The precautionary approach says that lack of scientific data should not prevent decision makers from taking measures to safeguard the environment. The most precautionary option would be to ban salmon aquaculture on the coast where the possibility for escapes and disease spread are numerous. However, moving the industry inland is a logistical and economic nightmare. Anticipating the backlash that such a decision would engender, I propose that we take the second-most precautionary option, protecting wild rivers from future aquaculture developments, while increasing monitoring and research of and for ISA within the wild and farmed salmon of the North West. Scientific data help make responsible and current decisions. With more information to guide us in the future, we may decide to rescind permits to aquaculture farms, or we may decide to allow more farms in rivers where they do not yet exist. The framework for this option already exists, and would therefore be the most efficient

option, though efforts for testing for ISA, planning and review would have to be increased. While this option may not stave off disease spread completely, it will limit the associated risk of such an outcome, as the increased vigilance will lead to alerting authorities sooner than they currently are mandated to be alerted. In addition, research will better inform our decisions in the future. By strengthening monitoring for and research on infectious salmon anemia, and by implementing protected areas for currently wild salmon runs, the Wild Salmon Center hopes to gain the support of industry, learn more about the ISA virus, and limit the spread of this potentially devastating disease.

**Bio:** Alyssum Pohl focused her studies on sustainable aquaculture at the Monterey Institute of International Studies, simultaneously working at Seafood Watch at the Monterey Bay Aquarium, and for the World Wildlife Fund's aquaculture program. She's a blithe and creative woman with an adventurous, diligent spirit.