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## Fishy Business: Taking a bite out of aquaculture's lax environmental policy

I don't want the food I eat to contribute to mass extinction, and I bet you don't either. While most people are at least cursorily aware of the controversies related to the pork, beef or chicken that they consume (think factory farms and PETA ads), fish don't tend to raise any red flags. I work at Seafood Watch, a program at the Monterey Bay Aquarium, where we provide guides to consumers, helping them make the most environmentally friendly choices when deciding which fish end up on their platters. Good choices include options like well-managed stocks of wild fish, such as Pacific salmon, while bad choices include poorly regulated and irresponsibly raised Atlantic salmon.

The FAO considers at least 70% of fisheries to be at capacity or overfished. Due to increased human population and demand for protein, in 2010, world production of farmed fish, or aquaculture, equalled or slightly exceeded worldwide catches of fish. If aquaculture were simply replacing fishing, this would be good as it would allow oceans to regenerate their stocks which were once so vast as to be thought infinite. However, many fish raised in aquaculture operations are carnivorous, and are fed from the dwindling bounty of the sea, thus contributing to overfishing.

Salmon, one of these carnivorous farmed fishes, is particularly problematic because its high market value ensures that it is one of the most robust aquaculture industries. While Norway has historically taken the lead in the production of salmon, Chile built its colossal industry over a very short time period starting in the mid 1990s. Unfortunately, Chile's lax environmental laws and enforcement meant that in addition to contributing to overfishing (feeding the salmon fish meal derived from wild-caught fisheries), the industry also overused antibiotics, and kept the fish overcrowded in netpens. All this ultimately lead to the devastating collapse of 90% of Chile's salmon industry in 2009 when infectious salmon anemia virus (ISA) spread rapidly and wiped out nearly all the salmon in the region. The livelihoods of thousands of workers as well as the environmental health of the area collapsed due to avoidable and predicted negligence.

Just last month, ISA was thought to have been detected in wild Pacific salmon in British Columbia. As ISA has heretofore never been seen in wild Pacific salmon, the disease is thought to have spread from nearby salmon pens that raise Atlantic salmon—the same species that collapsed from ISA in Chile. Though the results of testing for ISA have been inconclusive, the possibility that we are allowing exotic, virulent strains of diseases to jump species due to our lax environmental policies is extremely alarming. If ISA is identified as existing in a species where there was no prior history of it belonging, humans are entirely responsible for its spread. Some people hope that wild salmon will have more robust immune systems than their caged counterparts and will be able to avoid collapse. I would argue that exotic diseases (i.e., sea lice) have already wiped

out pink salmon runs in the Northwest, and that we can not take more risks when the possible negative outcomes are catastrophic.

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. We depend on the environment for nearly everything either directly or indirectly, and thus should treat it with more respect, and a more precautionary approach. In addition to voting with your dollars to support sustainable seafood in restaurants and groceries (choosing these fish is easy with help from the Seafood Watch mobile app on your smartphone),, you can also make your voice heard by writing to the Senators of the Northwestern states and asking them to implement precautionary environmental statutes for our nations' salmon runs, wetlands, and coastal environments. In these simple ways, we can take a bite out of species decline while still enjoying seafood.