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To Eat Or Not To Eat? The Ethics of Seafood
By Climate Guest Blogger on May 13, 2012
by Michael Conathan

This past week, the New York Times Magazine concluded an essay contest challenging its readers to make the argument that eating meat is ethical. One of my colleagues, Andrew Light, was a judge of the submitted entries, and his involvement got me thinking about these issues in the context of our favorite oceanic protein.

More than one-third of the people on the planet rely on seafood to provide at least 15 percent of their protein intake. In 2000 the U.N. Food and Agriculture Organization found that 1 billion people rely on fish as their main source of protein. Increasingly, we're getting that fish from aquaculture operations, also known as fish farms.

This should come as no surprise-after all, virtually every ounce of nonfish sustenance that passes our lips is cultivated, not harvested from the wild. But is aquaculture the cleaner operation? Is it more ethical?

In his defense of meat, the Times' contest winner, farmworker Jay Bost, points out that, "A well-managed, free-ranged cow is able to turn the sunlight captured by plants into condensed calories and protein with the aid of the microorganisms in its gut. Sun > diverse plants > cow > human. This in a larger ethical view looks much cleaner than the fossil-fuel-soaked scheme of tractor-tilled field > irrigated soy monoculture > tractor harvest > processing > tofu > shipping > human."

Bost references ecologist Aldo Leopold's land ethic to bolster his case: "A thing is right when it tends to preserve the integrity, stability and beauty of the biotic community. It is wrong when it tends otherwise." At first glance, such a philosophy would seem to favor a reduction or elimination of wild fisheries and a move toward properly managed aquaculture operations-an admittedly nebulous target given the legitimate questions that go along with fish farming, including concerns about pollution, location, and sources of feed stock.

Wild harvest in general is less efficient than cultivation, which is why we have given up on the former in the case of virtually every

other food product. Yet the biology of fish has raised technological barriers to domestication or cultivation. It's tough to shepherd a creature when the two of you don't breathe the same way. As a result, fishing has become more than just a source of protein-it's a way of life. So to extend the use of Leopod's ethic, as we value biodiversity and ecosystem health, we must also conserve the "integrity, stability, and beauty" of our socioeconomic structure. As a society, we value our fishing industry. We want fishing to remain part of the fabric of our coastal heritage and culture. Bost's point-that in many cases an animal can turn solar energy into people food far more efficiently than an anthropogenic process can-certainly applies to a fish as readily as to a cow. For all the efficiencies aquaculture can provide, there is still a great deal of intrinsic value in wild fisheries.

Some supporters of the commercial fishing industry decry aquaculture as an intruder in their markets with the potential to drive down demand for their fish and corrupt the public perception of their product's quality. This message is delivered with particular enthusiasm from Alaska, where, it should be noted, almost half of the state's famed commercial salmon began its life in hatcheries-though once released in rivers and streams, the fish spend the bulk of their lives in the ocean and so are considered wild.

Comparing the taste of a wild (or hatchery-spawned) Chinook to a cultivated Atlantic salmon is no contest, and consumers should expect to pay more for the privilege (for an excellent explanation of the intricacies of salmon management, see Paul Greenberg's Four Fish). Yet people need protein, and with so many of the world's fisheries in decline or being overexploited, it's clear wild stocks alone cannot support an exploding world population. Aquaculture must play a significant role in the future of fish.

There is also the pesky problem that in nearly all cases, we still have to catch fish to grow fish. A major component of food for fish in aquaculture operations is smaller fish that would comprise those species' diets in the wild. We are making advances in developing soy-based fish food, but for now we are still limited to some degree by the ocean's primary productivity level. Just as is the case with feeding grain to pigs, cows, and chickens, a whole lot of efficiency is wasted in translation. If we fed people with grain instead of feeding cows to feed to people, the grain would go a lot further.

So as we work on the overarching concerns about aquaculture operations, we should also take a look at how to improve the overall mechanics of how we grow fish. Traditional aquaculture operations comprise net pens usually erected in bays and sheltered harbors that keep fish tightly contained until they reach marketable size.

These are, in some ways, the factory farms of the sea, and they face many of the same problems found in their terrestrial relatives, including a prevalence of infection and disease and high concentrations of waste. They also have to deal with the problem of escapes. Fish that get out of their cages can interbreed with wild populations and corrupt the natural gene pool-not typically a concern in cow, pig, or poultry operations.

One means of rectifying some of these concerns has been the use of floating underwater containment cages in the open ocean. Such fish farm operations employ structures which are anchored to the seabed and float suspended in the water column but below the surface, thereby reducing the threat of interference from heavy weather or wave action that can damage the pens and cause escapes of farmed fish into the wild. Furthermore, the heavier currents in the offshore zone dilute the waste produced by large concentrations of fish much more rapidly, though they do not eliminate the problem entirely.

Offshore operations are also far more difficult to maintain and access than their nearshore counterparts, and if we bring greenhouse gas emissions into the mix, the metrics get worse. The fossil-fuel-powered boat trips out to the cages can really start to add up.

One emerging type of operation that would seem to resolve many of these issues is referred to as closed-loop, or recirculating, aquaculture. In this process, fish are grown in tanks on shore. Their waste and wastewater are treated and repurposed as fertilizer for on-site agriculture operations. While such operations are still largely in the development phase, they have great potential to make aquaculture inherently sustainable.

As we struggle to find room on this planet for an ever-increasing population, we are going to be forced into making some tough choices. We cannot ignore the reality that our natural systems limit the productivity of the world's oceans, nor should we look to transition fishing operations entirely from wild harvest to cultivation. Instead, we must develop a true "all of the above" strategy-to borrow a phrase from my energy colleagues-that balances our social, biological, economic, and, yes, our ethical needs.

Michael Conathan is the Director of Ocean Policy at the Center at the Center for American Progress.