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Fish Out of Ocean Water

by Emily Main

Jim Pillow, owner of Pillow's Fish Farm in Paragould, Ark., has been raising catfish for roughly 20 years. His 200-acre farm encompasses 40 open-air ponds and yields 1 to 1.2 million pounds of catfish annually, all of which are fed vegetarian pellets of corn and soybean meal. "We don't use pesticides or fertilizers," Pillow says. "The only chemical that we use is copper sulfate, if the fish get a fungus." And copper sulfate is a relatively benign chemical that doesn't accumulate in the catfish and is only hazardous to people in doses higher than catfish can tolerate.

Pillow's operation is not uncommon among U.S. catfish farms, often considered the most eco-friendly operations in an aquaculture industry that's riddled with the same problems as land-based agriculture: dangerous synthetic pesticides, including formaldehyde-based Formalin and permethrin, which harms aquatic organisms other than fish; synthetic nitrogen- and phosphate-heavy fertilizers, which feed algae blooms; herbicides, such as the suspected hormone disruptor 2,4-D; antibiotics and growth hormones.

But even catfish farms with all their eco attributes are imperfect, says David Guggenheim, Ph.D., president of the non-profit 1planet1ocean. "In open systems, you can have a storm event and suddenly you have nitrogen flooding into surrounding fields, escapement of the fish and possible disease, and they're susceptible to air pollution and rainfall [which causes flooding]," he says. Escaped non-native fish, which contributed to farmed salmon's bad name, are problematic even in land-based ponds. Bighead carp, which are similar to catfish, were imported from Asia in the seventies to help remove algae from catfish ponds and are raised for supplemental income alongside the more desirable domestic channel catfish. In the wild, bighead carp compete with other native species for food. Also, like other aquaculture systems, catfish ponds are fed by a percentage of wild-caught fishmeal, albeit a much smaller amount than feed consumed by salmon.

Nevertheless, land-based aquaculture must grow if seafood suppliers want to meet the public's growing demand, says Guggenheim, a demand that cannot be met by current wild-fishing practices. "For years, fishing regulations were based on a primitive 'sustainable yield model'—how many fish can we take out of the sea without causing populations to collapse," he says. "But that's a really narrow way of looking at sustainability."

Guggenheim is a consultant for Fish Protech Americas, a closed-containment aquaculture firm. These systems involve ponds contained within buildings so that no contaminants, whether pollutants or invasive species, can get into or leach out of the tanks. "You can control everything that comes into these systems, so you don't have the need for any chemicals and antibiotics," he says. "And they recirculate ninety-nine percent

of their effluent, so there's very little waste." They're also remarkably efficient, he adds, noting that water temperatures can be controlled according to an individual species' metabolism so fish will ultimately grow faster and provide higher yields.

Unfortunately, while British Columbia's government is considering converting the province's open-water salmon farms to closed-containment systems, these systems don't exist in the U.S. yet.

Until they do, use the **Smart Shopper's Fish Picks Card** for healthy and well-managed fish options, and get your heart-healthy omega-3 fatty acids from walnuts, soybeans and flaxseed oil. In the long term, however, "we really have to find an alternative seafood source," says Guggenheim. "We can no longer think of fish as crops that grow in the ocean."

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