

Aquaculture business booming, but at what cost?

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Major sectors of the global aquaculture industry are contributing to the collapse of world fisheries, a recent study notes.

Entitled "Farming up Marine Food Webs," the study found that traditional aquaculture, which depends mainly on plants for feed, is being rapidly replaced by the intensive farming of large, carnivorous fish. The most significant move toward the farming of carnivorous fish species is taking place in non-Asian countries, the study notes.

"The new trend in aquaculture is to drain the seas to feed the farms," said Daniel Pauly, a researcher at the University of British Columbia Fisheries Center and lead author of the report. "Asian aquaculture remains, on balance, a net producer of fish while non-Asian aquaculture has increasingly tended to become a net fish consumer."

A previous study by Pauly found that commercial fisheries are catching fewer top members of the food chain. The study demonstrated for the first time that large, long-lived fish from the top of the food web such as tuna, are being replaced by smaller, fish with shorter life spans at the bottom of the food chain.

Many scientists expect aquaculture to relieve pressure on the ocean's fish stocks. Yet the farming of carnivorous species such as salmon can intensify pressure on wild fisheries because they can require up to five pounds of wild fish per each pound of salmon produced.

Conservationists cite a number of other environmental concerns involving farmed salmon, from water pollution to bycatch of marine birds and mammals to disease, escapement and algal blooms. According to SeaWeb, 32,000 tons of farmed salmon may produce the same volume of sewage as that generated by a city of 50,000 people.

Aquaculture has become the fastest-growing sector of the world food economy, with an 11 percent rate of increase each year.

Expanding from 13 million tons of fish produced in 1990 to 31 million tons in 1998, aquaculture is expected to surpass cattle ranching as a source of the world's protein in the next 10 years.

Requiring less energy than livestock production, fish farming has been touted as a solution to feeding a world population that adds 78 million people each year.

According to a recent report by the Worldwatch Institute, cattle require seven pounds of feed in order to gain one pound of live weight. By contrast, certain fish species raised on farms require less than two pounds of grain for each pound of live weight. Fish farming also allows greater water efficiency, since growing a pound of grain can require up to 1,000 pounds of water.

“To date, fish farming has been separated from ocean fisheries in regulation, management and mind-set,” said Stanford economist Roz Naylor. “It is high time both public and private interests think of these sectors jointly. Without sound ecological practices, the expanding aquaculture industry poses a threat not only to ocean fisheries, but also to itself.”

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