

# NOAA plans to open federal waters in Pacific to fish farming

January 6 2017, by Caleb Jones

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This Sept. 17, 2015, image made from video provided by NOAA Fisheries, shows a fish farm off the shore of Hawaii's Big Island near Kona. The National Oceanic and Atmospheric Administration is creating a plan for managing commercial fish farms, known as aquaculture, in federal waters around the Pacific - a program similar to one recently implemented by NOAA in the Gulf of Mexico. The farms in the Gulf and the Pacific would be the only aquaculture operations in U.S. federal waters. (Paul B. Hillman/NOAA Fisheries via AP)

As traditional commercial fishing is threatening fish populations worldwide, U.S. officials are working on a plan to expand fish farming into federal waters around the Pacific Ocean.

The government sees the move toward aquaculture as a promising solution to feeding a hungry planet. But some environmentalists say the industrial-scale farms could do more harm than good to overall fish stocks and ocean health.

The National Oceanic and Atmospheric Administration is creating a plan to manage commercial fish farms in federal waters, the area of ocean from three to 200 miles offshore, around Hawaii and other Pacific islands.

The program is similar to one recently implemented by NOAA in the Gulf of Mexico. The farms in the Gulf and the Pacific would join the few aquaculture operations in U.S. federal waters, though there are smaller operations in state waters close to shore.

Fish farming has been practiced for centuries in Hawaii and around the world. But modern aquaculture, some environmentalists say, carries pollution risks and the potential for non-native farmed fish to escape and enter the natural ecosystem.

Most shellfish consumed in America comes from farms, and their methods are widely considered sustainable. However, some farms that grow carnivorous fish such as salmon have raised concerns about sustainability because they use wild-caught fish to feed the captive species.



In this Friday, Dec. 2, 2016 photo, Conservation International's Luka Mossman, who restores and researches Native Hawaiian fishponds, walks along a barrier wall on Heeia fishpond in Kaneohe, Hawaii. As traditional commercial fishing is threatening fish populations worldwide, U.S. officials are working on a plan to expand fish farming into federal waters around the Pacific Ocean. Some see the move toward aquaculture as a promising solution to overfishing and feeding a hungry planet. But critics say the industrial scale farms could do more harm than good to overall fish stocks and ocean health. (AP Photo/Caleb Jones)

There are several ways to farm fish, including: fully contained land-based systems that pump water in and out with little, if any, environmental impact; near-shore operations incorporating natural and man-made elements; and off-shore farms.

Former NOAA chief scientist and founder of ocean advocacy group Mission Blue Sylvia Earle said there are more environmentally sustainable and economically viable options than open-ocean

aquaculture, which uses floating net-pens or submerged cages. "We have to make a choice with aquaculture," she said. "Is our goal to feed a large number of people? Or is our goal to create or to serve a luxury market?"

Last year, NOAA and the Scripps Institution of Oceanography put an economic value of \$17 billion a year on the ocean off the west coasts of North and South America. That includes \$4.3 billion from commercial and sport fishing and \$12.9 billion for the capture of carbon.

Earle said the ocean is worth more, and no dollar figure can be attached to keeping the ocean, and in turn humans, healthy. "We now have recognition of other values of the ocean beyond what we can extract either for food or for products," she said.



In this Monday, Dec. 19, 2016 photo, Dr. Sylvia Earle stands beside a full size mock up of the Deep Water 2000 submersible at Deep Ocean Exploration and Research Marine in Alameda, Calif. Former NOAA chief scientist and founder

of ocean advocacy group Mission Blue Earle said there are more environmentally sustainable and economically viable options than open-ocean aquaculture, which uses huge floating net-pens or submerged cages. "We have to make a choice with aquaculture," she said. "Is our goal to feed a large number of people? Or is our goal to create or to serve a luxury market?" (AP Photo/Ben Margot)

New technologies are being developed for open-ocean aquaculture, and many U.S. companies are sending their crews overseas to farm, according to NOAA officials.

"The U.S.'s view is we'd rather have these U.S. companies pursuing these opportunities in a sustainable, environmentally sound way in the U.S.," said Michael Tosatto, NOAA's National Marine Fisheries Service regional administrator.

The NOAA plan would create a regulatory and permitting scheme for the industry. "It's reasonably common knowledge that the environmental laws are less where aquaculture occurs the most, (that) being China and other Southeast Asia countries," Tosatto said.

Many foreign operations have U.S. companies supplying the breed stock, then the fish are grown and sold back to the U.S. as imported seafood. U.S.-farmed fish in 2014 was valued at \$1.3 billion, Tosatto said, and constitutes 19 percent of the nation's seafood production.



In this Monday, Dec. 19, 2016 photo, Dr. Sylvia Earle gestures while speaking beside a full size mock up of the Deep Water 2000 submersible at Deep Ocean Exploration and Research Marine in Alameda, Calif. Former NOAA chief scientist and founder of ocean advocacy group Mission Blue Earle said there are more environmentally sustainable and economically viable options than open-ocean aquaculture, which uses huge floating net-pens or submerged cages. "We have to make a choice with aquaculture," she said. "Is our goal to feed a large number of people? Or is our goal to create or to serve a luxury market?" (AP Photo/Ben Margot)

That amounts to only 1 percent of the global farmed product.

NOAA has been trying to establish an aquaculture industry in federal waters for many years. But attempts to get legislation to implement open-sea aquaculture have failed.

"And so (NOAA) moved into the fishery management process ... as a means to move forward with ocean aquaculture under the radar of the public," said Marianne Cufone, executive director of the Recirculating Farms Coalition. NOAA received input from thousands of people during a public comment period last year on its plans.

Cufone's New Orleans-based organization has been developing land-based aquaculture systems that are fully contained. Cufone says these types of farms are more sustainable than ocean aquaculture, and Earle agrees.



In this March 22, 2016 file photo, fish caught by crews in the Pacific Ocean around Hawaii are stacked at the Honolulu Fish Auction in Honolulu. As traditional commercial fishing is threatening fish populations worldwide, U.S. officials are working on a plan to expand fish farming into federal waters around the Pacific Ocean. Some see the move toward aquaculture as a promising solution to overfishing and feeding a hungry planet. But critics say the industrial scale farms could do more harm than good to overall fish stocks and ocean

health. (AP Photo/Caleb Jones, File)

"Controlled systems are the most promising," Earle said. "I personally am wary of the open ocean approach to aquaculture."

Meanwhile, NOAA says researchers off Hawaii's Big Island are studying ways to make open ocean farming safe and efficient. They are studying different techniques and species to better understand problems the industry could face.

"All forms of aquaculture can be done responsibly or irresponsibly," said Michael Rubino, NOAA aquaculture program director. "We will need all forms done well to meet seafood demand and healthy ocean objectives."

Native Hawaiians have long practiced sustainable aquaculture. They build walls around shoreline areas, allowing fresh water from the mountains and salt water from the ocean to flow in and out. Fish enter through slotted gates, and can't get back out. The ponds are monitored to make sure they are healthy, mimicking nature.



In this Friday, Dec. 2, 2016 photo, Conservation International's Luka Mossman, who restores and researches Native Hawaiian fishponds, walks near Heeia fishpond in Kaneohe, Hawaii. Native Hawaiians build walls around shoreline areas, allowing fresh water from the mountains and salt water from the ocean to flow in and out. Fish enter the ponds enter through slotted gates, grow inside, then can't get back out. The ponds are monitored to make sure they are healthy, mimicking nature, then fish are harvested. (AP Photo/Caleb Jones)

"Our ancestors, they could ... sustainably feed themselves no problem," said Luka Mossman, a Native Hawaiian who grew up working on a traditional fish pond and is now helping study and restore such ponds with the nonprofit environmental group Conservation International.

"You constantly watch how the natural system works, and you adapt to that. You don't try and adapt the natural system to work for you," he said.



In this Monday, Dec. 19, 2016 photo, Dr. Sylvia Earle stands inside work area bubble of the Ocean Explorer HOV 1000 deep water submersible at Deep Ocean Exploration and Research Marine in Alameda, Calif. Former NOAA chief scientist and founder of ocean advocacy group Mission Blue Earle said there are more environmentally sustainable and economically viable options than open-ocean aquaculture, which uses huge floating net-pens or submerged cages. "We have to make a choice with aquaculture," she said. "Is our goal to feed a large number of people? Or is our goal to create or to serve a luxury market?" (AP Photo/Ben Margot)



In this Sept. 17, 2015, image made from video provided by NOAA Fisheries, a diver swims amongst a fish farm off the shore of Hawaii's Big Island near Kona. The National Oceanic and Atmospheric Administration is creating a plan for managing commercial fish farms, known as aquaculture, in federal waters around the Pacific - a program similar to one recently implemented by NOAA in the Gulf of Mexico. The farms in the Gulf and the Pacific would be the only aquaculture operations in U.S. federal waters. (Paul B. Hillman/NOAA Fisheries via AP)



In this March 24, 2016 file photo, a fishing vessel navigates into Honolulu. As traditional commercial fishing is threatening fish populations worldwide, U.S. officials are working on a plan to expand fish farming into federal waters around the Pacific Ocean. Some see the move toward aquaculture as a promising solution to overfishing and feeding a hungry planet. But critics say the industrial scale farms could do more harm than good to overall fish stocks and ocean health. (AP Photo/Caleb Jones, File)



In this Monday, Dec. 19, 2016 photo, Dr. Sylvia Earle stands beside a carved bust of herself at Deep Ocean Exploration and Research Marine in Alameda, Calif. Former NOAA chief scientist and founder of ocean advocacy group Mission Blue Earle said there are more environmentally sustainable and economically viable options than open-ocean aquaculture, which uses huge floating net-pens or submerged cages. "We have to make a choice with aquaculture," she said. "Is our goal to feed a large number of people? Or is our goal to create or to serve a luxury market?" (AP Photo/Ben Margot)

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Citation: NOAA plans to open federal waters in Pacific to fish farming (2017, January 6)  
retrieved 2 May 2024 from

<https://phys.org/news/2017-01-noaa-federal-pacific-fish-farming.html>

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