


UBC PUBLIC AFFAIRS **UBC Reports | Vol. 49 | No. 3 | [Mar. 6, 2003](#)**

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SCIENTIST PREDICTS OCEAN FISHERIES DISASTER

DANIEL PAULY SAYS WE ARE DESTROYING WORLD FISH STOCKS

By Hilary Thomson

He describes himself as a bridge builder.

And that bridge is built over troubled waters, says UBC Fisheries Centre Prof. Daniel Pauly, a vocal and influential critic of current fishing practices that are depleting the world's fish stocks.

"We are destroying these resources for no reason," he says. "This systematic overfishing will soon leave nothing in the ocean but plankton."

The 56-year-old has been studying the declining bounty of the seas for about 25 years, in a career that spans four continents.

French by birth, Pauly was raised in Switzerland but at 16 years old left an unhappy home life and set out for Germany. There he worked at labouring jobs by day and by night attended classes to hone his language skills and complete high school.

He particularly wanted an applied and transferable skill that would allow him to work outside of Europe. As a person of colour -- the son of a white mother and an Afro-American father -- he had always felt like an outsider and was eager to move on.

His first stop was Ghana, West Africa, followed by a two-year stay in Indonesia where he helped develop new fisheries. His experience there led to the creation of a simple if sometimes disputed method of predicting the natural mortality of fish -- a key factor in estimating sustainable catches.

The work was a complement to the theory of fish growth that led to his doctorate from the University of Kiel, Germany in 1979. His paper on the method -- called the Pauly equation -- is the most cited of his more than 400 publications.

His next stop, at the International Center for Living Aquatic Resources Management (ICLARM) in the Philippines, is where he really made some waves.

A key accomplishment was the development of software system methods that use simple measurements of length to estimate age. The estimates help researchers study fish growth, which is important to fisheries management.

He spent 15 years at the Manila research facility and his achievements include launching FishBase, an online encyclopedia now covering more than 27,000 species of fish. The Web site gets up to five million hits a month. He also worked with international colleagues to develop

Ecopath, a tool for describing ecosystems' food webs.

When ICLARM management shifted in 1994, Pauly accepted a position with UBC's Fisheries Centre.

His research here has included developing Ecopath to create a system called Ecosim, which predicts the effects of fisheries on ecosystems. He has also studied how fishers regularly 'overfish' large valuable stock like tuna and snapper and then work down the food web to smaller species. Dubbing the practice 'fishing down the food web,' Pauly has shown how devastating the practice is to the marine ecosystem.

In addition, his international perspective -- he speaks four languages -- allows him to cater to a global base of scientists and students. He is very clear on the role universities must play in conserving fish stocks.

"We must be the engineers of the vision -- not just doing more of the same. If we can't do that, we shouldn't be in business."

Such outspoken stances have brought Pauly both acclaim and criticism. In 1995, he publicly aligned himself with marine conservationists -- a trip to the dark side in the view of most fisheries scientists. The move earned him the label of heretic.

"Fisheries scientists help to build stocks so that the fishing industry can exploit them," he says. "We can't continue to treat industry as an exclusive client of our knowledge."

Since 1999, Pauly has headed a Fisheries Centre project that looks at the impact of fisheries on the world's marine ecosystems. Called The Sea Around Us, it is funded by a \$4-million grant from Philadelphia-based Pew Charitable Trusts.

Pauly and others at the centre last year published a comprehensive review of global fisheries in the prestigious journal, Nature. One of the questions they tackled was whether aquaculture could save the world's fish stocks.

Typically, Pauly's response is passionate and irreverent. He calls aquaculture facilities, such as those raising salmon, the equivalent of a "floating pig farm." In his mind, aquaculture is just another example of the proliferation of unregulated fisheries-a machine that seems almost unstoppable. Salmon and other raised fish that are fed ground sardines and other smaller fishes cannot alleviate the fisheries problem, he says. The demand for fishmeal actually increases the pressure on wild stocks.

But even with this bleak outlook for the future of our fisheries, Pauly is hopeful. Determined to bring together fisheries scientists and conservationists, he has presented information from the The Sea Around Us study to international audiences and recently spoke to a U.S. House of Representatives Ocean Caucus. He is often quoted in mainstream media and has been profiled in Science and The New York Times.

After a quarter century, Daniel Pauly is far from exhausted in his campaign to save the world's fish.

"I think we're just at the cusp of getting the message across. There is still time to restore marine ecosystems.

We can do this.”

Last reviewed 05-Mar-2003

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