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SCIENTIST AT WORK: DANIEL PAULY; Iconoclast Looks for Fish and Finds Disaster

By CAROL KAESUK YOON JAN. 21, 2003

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In the field of fisheries science, where a researcher can spend an entire career with one scaly school in one small stretch of sea, provincial rather than global perspectives have long been considered the most useful.

But as marine stocks collapse around the globe, from the anchovies of Peru to the North Atlantic cod, local detail sheds little light on what is happening to the world's fisheries.

Dr. Daniel Pauly has stepped into this void.

He is an iconoclastic fisheries scientist at the University of British Columbia who is so decidedly global in his life and outlook that he is nearly a man without a country.

"Looking at the big picture has not been the mandate of anybody," Dr. Pauly said, with an accent that simultaneously hints at many languages, but not necessarily his native French or his acquired tongues, German or Spanish or the Swahili or Indonesian that he once spoke.

Most fisheries scientists work for regulatory agencies charged with managing a particular stock in a particular port, he said. But he and his colleagues "have given ourselves the mandate to look at the whole world."

"Nobody has been asking these questions before," Dr. Pauly said.

In the process, he and his fellow researchers are making a splash with paper after paper in the most prestigious scientific journals. Their news is uniformly bad. So Dr. Pauly has become a man on a mission to spread the word that fish stocks are plummeting around the world.

"In some places in the world," he said, "you can see people chasing the last fish. In the Java Sea in Indonesia, I have seen fishers going out in the morning, six of them going out and coming back with five pounds of fish. That is the end point, a pound of fish per person per day to sell for rice. That's where fisheries go if you let it happen. That's where it stabilizes. These people cannot feed their families."

Unchecked, he says, the same will be seen around the world, and the fishing industry will leave little in the seas but harvests of what he calls "bait and worse," the bottom levels of the marine food web like sea cucumbers, jellyfish and, eventually, plankton for future generations to eat.

The problem, he and colleagues say, can be remedied only with a huge reduction in global fishing and the radical step of creating large "no take" zones, where fish can grow large, breed and replenish. But that will only happen, he said, if the true owner of the ocean resources, the public, demands it, which has yet to happen. The public should demand it, he said, once people know the truth about what overfishing really means.

"No, you don't need to worry about these problems," he said, "as long as your children like plankton stew."

Stepping outside the role of the circumspect academic, Dr. Pauly has been alternately described by colleagues as inspiring, arrogant, brilliant and aggravating. Some call him a heretic, "the Prophet Daniel" and part of the doomsaying threesome of Peter, Paul and Pauly, the others being ecologists, Dr. Peter Vitousek and Dr. Paul Ehrlich.

Although some critics complain that Dr. Pauly's statements are too extreme and others have argued with his methods, including the complex statistical analyses to turn years and miles of catch figures from around the globe into a single picture, few scientists disagree with the assessment that many fisheries are in deep trouble.

In an elegant restaurant on the university campus, Dr. Pauly looked at ease in the patrician setting, gracious and erudite, with the makings of an ivory tower professor, a man whose idea of an entertaining hobby is reading all of Darwin's published and unpublished works.

But his early years were rugged, and he struggled to find a place in the world where he belonged, a struggle that gave him the global perspective that has helped him become one of the most influential fisheries scientists.

He was born in 1946 in Paris to a white French mother and a black American father who abandoned the family. When he was 2, Dr. Pauly went on what was supposed to be a short visit to the home of a Swiss family that had recently befriended his struggling young mother. But the family, Dr. Pauly recounted, refused to return him to his mother, telling him that his mother had abandoned him and, he learned later, sending threatening letters to his mother in France.

Over the next 14 years, Dr. Pauly said, he endured a bizarre Dickensian childhood. He was a forced replacement for the Swiss family's young son, who had died, while being turned into a live-in servant who cleaned and did other household chores. His identity crisis was compounded by being a half-black oddity in an all-white town. He found his solace in books.

"If you think of having a family as being loved as a child, cared for," he said, "I did not experience that."

At 16, he ran away and put himself through high school in Germany, eventually reuniting with his mother in France and with his father in America, where he learned the harsh politics and reality of race in America in the 60's. He recalled being in Little Rock, Ark., with an aunt who warned him not to run, "because the police shoot black kids that run."

He returned to Germany where he went to college and received his doctorate in fisheries biology at the University of Kiel. Eventually he traveled to western Africa to study fisheries, hoping that he might blend in better there. Instead, he said, "I found I was European."

Dr. Pauly sailed the Java Sea in Indonesia and carried out fisheries research in the Philippines, finally landing in this city of many immigrants from many cultures. Easily identifying with the disadvantaged, Dr. Pauly has been working for years on "leveling the playing field," as he likes to say, trying to help scientists in developing countries conduct their research despite scant resources.

He found immediately that the methods to collect and analyze information that Europe was using could not be transferred wholesale to study tropical fisheries. Catches of tropical fish are on the whole much more diverse in terms of species, and those species have been studied little.

In addition, fish in temperate climates have growths in their ears that, like tree rings, can indicate their age. Tropical fish lack those easy markers, whose use figures prominently in standard methods of taking census counts and monitoring fish populations.

Dr. Pauly developed simple practical methodologies that depended not on age, but on the length of fish, and that required just the most inexpensive technology, like hand-held calculators. The methods enabled researchers in developing countries to study their fisheries.

He proselytizes, as well, giving workshops and training scientists in developing countries to use the new tools and spread the word.

Although much of his work is heavy on mathematics and modeling, Dr. Pauly said, he is no expert on such fields. He likes to describe himself as not particularly talented but extremely hard working and capable of gathering and inspiring experts who have talents that he lacks.

The many number-crunching scientists he has drawn here to work with him describe him as unendingly energetic, bursting with ideas, demanding and intensely interactive. They say they brace for his return from long airplane trips, when he can be guaranteed to have made new plans for grander and, if possible, more controversial projects.

"We came here to make a difference," said Dr. Jackie Alder, a research fellow at the Fisheries Center at the university. "If you want to stir the pot, he'll hand you the spoon."

Most recently, Dr. Pauly helped create what may be the biggest and most lasting field-leveler of all, FishBase, online at www.fishbase.org, with information on every one of the 27,000 fish species, including photographs, home climate, depth, peril to humans and the person who named it. It gets as many as five million hits a month.

But giving the world access to information about fish is not enough for Dr. Pauly, who, critics and fans agree, has the gift of seeing the bigger picture.

Other groups are also putting together organism databases for the Web. Eventually, Dr. Pauly said, he envisions all the databases becoming linked so that a person can choose a location and instantly see all the organisms found there.

Grabbing off his bulletin board a cartoon of a command center that he said he envisioned as equivalent to the bridge on Star Trek's Enterprise, he explained that a person would navigate the ocean seeing the resident fish, raising a periscope to spot bird life, clicking on an icon to see legal constraints about fishing in the region or retrieve information about temperature, salinity or pollution.

"We would say, 'Captain Kirk, what are the life forms?' " Dr. Pauly said, bubbling with excitement at the conceptual device, his ultimate field-leveler, the invention that would let people anywhere, regardless of race, country or wealth, find the biological information they want, free.

At the suggestion that such an achievement sounds impossible, Dr. Pauly smiled and said: "That's what people said about FishBase. That that's not how we do things, that it couldn't be done."

Link: <https://www.nytimes.com/2003/01/21/science/scientist-at-work-daniel-pauly-iconoclast-looks-for-fish-and-finds-disaster.html>