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UBC marine biologist Daniel Pauly's new book delves into decline of world's fish species

by Charlie Smith on May 22nd, 2019 at 11:51 AM

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Vanishing Fish is a collection of essays by Daniel Pauly, who's a leading expert on the state of global fish stocks.

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UBC marine biologist Daniel Pauly was the lead author on a [scientific paper](#) in 2016 that caught scientists' attention around the world.

Published in the journal *Nature Communications* and the result of a series of rigorous studies backed by UBC's research initiative [Sea Around Us](#), he and coauthor Dirk Zeller prepared a shocking "atlas" of global fisheries.

It demonstrated how countries' annual catch vastly exceeded the amounts they were reporting to the [United Nations Food and Agriculture Organization](#) in Rome.

The FAO numbers suggested that the global catch reached 96 million tonnes in 1996.

Pauly and Zeller, through a process called "catch reconstruction", concluded that "the catch actually peaked at 130 million tonnes, and has been declining much more strongly since."

In a recent phone interview with the *Straight*, Pauly explained that nontargeted fish that are caught and then discarded back into the sea as bycatch are not counted in official statistics.

Nor are the sport fishery, subsistence fishery, and fish captured within six kilometres of the U.S. coast, because that's usually under state jurisdiction.

“There are millions of tonnes that are already eliminated [from official statistics] there,” Pauly said.

Then there's poaching, which he said is impossible to estimate accurately.

But that's not all that's missed. Fish brought into places where there are no enumerators counting them are also missing from official statistics.

“What does the government do when it doesn't know something?” he asked. “It reports that it is not there. Or it reports ‘n/a’, not available. In the database, what does n/a translate into? Zero.”



Northern cod were nearly fished out of existence off the east coast of Canada in the early 1990s. HANS-PETTER FJELD

Northern cod vanished after "fish bank" plundered

Pauly points out in his new book, [Vanishing Fish: Shifting Baselines and the Future of Global Fisheries](#), that this has led to an ecological crisis of monumental proportions.

Canada is not immune. In fact, he said that fisheries scientists played a significant role in the disappearance of northern cod off Newfoundland and Labrador in the early 1990s.

“The fishing by foreign fleets was reported,” Pauly noted, “but it was not reported in Canada.”

Fishing boats from Spain, Poland, Germany, and other countries were catching large numbers of cod, but these fish were not being linked to Canada in the statistics.

Another problem, according to Pauly, was the development of trawlers that could catch fish at much deeper levels.

For five centuries, North Atlantic cod were being taken at levels no lower than 100 metres below the surface. But these fish lived at depths of up to 500 metres.

“So the fish that were caught were the ones that committed suicide by going to shallow water,” Pauly quipped.

But as modern boats could capture fish more than a kilometre under the surface, the “bank of fish” was rapidly depleted. And government scientists underestimated the scale of the problem.

“It was like a rush,” Pauly said. “And this happened with Canada having no control over the fishery.”



Vanishing Fish includes an account of fisheries researcher Alexandra Morton (above) being smeared by a senior federal fisheries official.

Pauly tries to level playing field for communities

Vanishing Fish is made up of a series of essays telling Pauly's colourful life story as a student and scientist in Germany, Indonesia, the Philippines, Peru, and Canada.

In one part of the book, he describes a trip that he and his wife took to the Broughton Archipelago near the northern tip of Vancouver Island to visit fish-farm critic and fisheries researcher Alexandra Morton.

Morton took Pauly on her small boat to collect samples of smolts in the vicinity of local aquaculture operations.

"We got about 100 little fish—salmon, herring, and so on," Pauly recalled. "They were all fingerlong, all of them, and all of them had lice."

He added that if these fish were the same size as him, the lice would be the size of a dinner plate on his chest.

Later, Pauly was shocked to hear the head of research with the federal fisheries department claim that Morton was "spiking the salmon" with lice.

"It was totally denied," Pauly said with a tone of incredulity.

He added that the Norwegian companies that owned B.C. aquaculture operations knew that there was a genuine problem with parasites from their operations affecting wild stocks. But because a DFO boss so adamantly denied this, it stifled the willingness of some departmental scientists to investigate this in B.C.

Pauly said that his research into reconstructing fish catches through ecosystem modelling is designed to help level the playing field between governments and communities.

That's because he's giving average people in the developing world an opportunity to draw their own conclusions.

"I was always motivated by...giving people tools with which they could work—as bad or as well—as people, my colleagues, in the developed world," he stated.

Since moving to Canada in 1994 to work at UBC, he's also concluded that his work can assist people in civil society, like Morton, who are holding the government scientists to account.

Catch reconstruction can also offer insights into what's happening in societies.

As an example, Pauly cited the decline in the Inuit's capture of Arctic char following very high levels in the 1950s and 1960s.

This came as a result of the RCMP slaughtering Indigenous people's sled dogs when they were forced to end their nomadic ways and live in communities.

"Char at the time were taken and frozen and they were fed to the sled dogs," Pauly explained. "Then when the Royal Canadian Mounted Police killed the dogs, they didn't need all those char."



B.C. consumers sometimes focus on sustainable salmon, like this wild Haida Gwaii coho, but Daniel Pauly says this must be accompanied by political action to save other species. OCEAN WISE

Consuming right isn't enough, Pauly says

In B.C., it's fashionable for consumers to try to eat seafood with a view to choosing what products are least harmful from an environmental perspective.

Pauly pointed out that nobody wants to eat the last panda, for example.

But he's also concerned about the relentless focus on "consuming right" rather than addressing the large-scale political factors leading to the collapse of fish species.

"Take the example of shark fin soup," he said. "You cannot get rid of [this] by not consuming shark fins as an individual. If your family doesn't consume shark fins, big deal. There will be other families that do."

In fact, he said that 90 percent of the population doesn't care. And many of them cannot care because they're preoccupied with survival.

The answer, according to Pauly, is to mobilize the state, through political action, to ban taking fins of sharks.

"And if the government then abolishes this, you have reached the other 90 percent—the ones who don't care."

He added that nobody says that if they drive prudently, that will stop speeding on the roads.

"We still need cops," Pauly emphasized.

Similarly, he said that smoking cigarettes would never be eliminated if individuals chose not to consume them, no matter how well-intentioned they were.

"Once there is enough push for it, the state can pick up the issue."



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Long-term future looks bleak

One of Pauly's gravest worries, however, is the public's apathetic response to the climate crisis, which is wreaking havoc on fish stocks.

He said people realize what's happening but it's come at a time when political and democratic institutions are falling apart.

"We should have transitioned toward ecologically sound methods," he declared. "We should have a transition to renewable energy on a grand scale.

"The state, as an entity, should have the support of people, should be able to tax people, [and] should be able to engineer things," Pauly continued. "It doesn't—at the same time this is urgently needed. There's a deficit of trust and in democracies of the west, so we will not meet the challenge. I'm very pessimistic in this context."

What especially disturbs him is that humanity has the tools at hand to address climate change created by rising greenhouse gas emissions. This sets us apart from previous catastrophes, such as the Great Plague of London in the 1660s, which killed a quarter of the city's population in 18 months.

"We know what is happening, but no government would be able to implement what is needed," Pauly said. "For example, Canada—if it is to fulfill the requirement we would expect—would have to abandon this dream of being a petrostate."

He noted that when he came to Canada, fisheries were going kaput all over the world, including off the Grand Banks of Newfoundland and Labrador. But there were strong voices in civil society trying to protect stocks.

Pauly doesn't see the same level of energy being mobilized to fight the threat that climate changes poses to human civilization.

"There is no social force...capable of pushing our government into action because most people don't understand the urgency," he said.

Link: <https://www.straight.com/arts/1243921/ubc-marine-biologist-daniel-paulys-new-book-delves-decline-worlds-fish-species>