

Researchers provide fisheries a solution to overharvesting

November 1 2017



A school of sardines in Italy. Credit: Wikimedia / Alessandro Duci

There are fewer fish in the sea - literally.

Consumer demand and inadequate scientific information has led to overharvesting, reducing [fish](#) species and [fish stocks](#) around the world.

But University of Guelph researchers have identified a possible solution. They have developed a [model](#) that allows fisheries to net enough to meet rising consumer demand while ensuring adequate income and replenishment of natural stocks.

The research was published today in *Proceedings of the National Academy of Sciences*.

"We know fish are getting rarer," said John Fryxell, a U of G integrative biology professor and lead author of the paper.

Many [commercial fisheries](#) are threatened by overharvesting. For example, the collapse of once-abundant cod stocks in the North Atlantic led to a federal fishing moratorium on the species in the 1990s.

Managers and fisheries are hampered by a lack of information, from overall population numbers to data on how fast fish grow and reproduce.

As the global population increases and demand for fish protein rises - particularly in developing countries - more fisheries are chasing smaller fish populations in hopes of recouping higher prices for their efforts. This further threatens fish stocks that are already being over-exploited, Fryxell said.

Finding the "sweet spot" - where the world's fisheries can function all the while protecting natural fish stocks - was the goal of the new model.

"It gives fisheries and conservation managers a tool for balancing those competing demands," he said.

They developed the model using information about landed fish catches and prices for any species to determine by how much a given fishery has been overharvested. Basically, the model encourages fisheries to reduce

short-term harvests in order to realize higher long-term yields without sacrificing economic return.

"The model is based on the premise that it's just as profitable to have high catches and low prices as high prices and lower catches," said Fryxell.

That strategy also helps ensure a more sustainable fishery over the long term, he said.

Supportive policy changes might include introducing tariffs that make it less profitable to fish low-yielding, high-priced species. Or managers might encourage fish farming to provide alternative protein sources and push down [prices](#) of wild stocks, he said.

"We'd have a better world where the fishery is making money, and we're feeding more people with more fish in the ocean."

The research also connects the world's [fisheries](#) with U of G's Food From Thought project, Fryxell said.

"It's Food From Thought in a renewable rather than a managed context - how choices impact production, how we manage to make production more sustainable and still provide enough food." Co-authors are integrative biology professor Kevin McCann and other researchers at U of G, McGill University, the University of Washington, and Fisheries and Oceans Canada.

Provided by University of Guelph

Citation: Researchers provide fisheries a solution to overharvesting (2017, November 1) retrieved 26 April 2024 from

<https://phys.org/news/2017-11-fisheries-solution-overharvesting.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.