

Recipe for rarity: fish threatened by cookbooks

13:00 19 March 2010 by [Bob Holmes](#)

For similar stories, visit the [Food and Drink](#) and [Endangered Species](#) Topic Guides

Rare is not only beautiful but also tasty. A study of a century's worth of seafood recipes has revealed that big, predatory fish like salmon and tuna have grown in prestige, even as overfishing has caused their populations to plummet – sometimes to the point of endangerment.

[Phillip Levin](#) and Aaron Dufault, conservation biologists with the US government's Northwest Fisheries Science Center in Seattle, Washington, gathered 3092 seafood recipes from 105 cookbooks published in the Seattle region between 1885 and 2007. For each recipe, they noted the species of seafood called for, and estimated its trophic level – a measure of how high in the food chain the species sits. For example, sharks, which sit at the top of the food chain, have a trophic level of 4 or higher.



Cod: big, tasty, prestigious and in trouble (Image: Francis Dean/Rex Features)

The study offers a rare insight into consumer demand for different species of fish. Fisheries biologists usually study fishing from the "supply side" instead, by measuring fish harvests.

Over the 122 years of the study, the average trophic level of the recipes rose from 2.92 to more than 3.4. In other words, newer recipes were more likely to call for the large, predatory fish than were older recipes.

Wrong way

A trophic level of 3.4 is relatively high, and the 0.48 rise is also considerable: a 0.15 change in trophic level is normally significant enough to have an impact on the marine ecosystem.

Levin had expected the opposite trend, because decades of intense fishing have depleted the populations of many fish with a high trophic level, and as a result more and more of the world's fish harvest is now made up of smaller "trash" [fish of lower trophic levels](#). He suggests it didn't work out that way because cookbooks don't reflect what we eat so much as what we aspire to eat. "It's more about culture than fish," he says.

Indeed, Levin suspects that rarity may be partly responsible for the prestige of fish like cod and tuna. "When food is expensive, that's the stuff that shows up in cookbooks," he says. If so, cooks will continue to seek out these species even as their populations dwindle still further – a perverse demand that could stymie efforts to restore healthy fish populations.

Recently, several conservation groups have published [lists](#) to guide [consumers' seafood buying](#) towards more sustainable choices. However, such efforts are unlikely to dent the status-seeking that Levin documents, says [Daniel Pauly](#), a fish biologist at the University of British Columbia in Vancouver, Canada. "That has no impact on the real consumption patterns of people, which are dictated by prestige at the upper income levels and necessity for lower-income people," he says.

Journal reference: *Fish and Fisheries*, DOI: [10.1111/j.1467-2979.2010.00355.x](#)

ADVERTISEMENT

They won
\$125,000 for
their bright
energy idea.

Do you have a
winning idea?
Click to find out more.


ConocoPhillips
Energy Prize

If you would like to **reuse any content** from New Scientist, either in print or online, please [contact the syndication](#) department first for permission. New Scientist does not own rights to photos, but there are a [variety of licensing options](#) available for use of articles and graphics we own the copyright to.

[Back to article](#)



ADVERTISEMENT

**They won \$125,000 for
their bright energy idea.**

Do you have a winning idea?
Click to find out more.

*ConocoPhillips
Energy Prize*

The advertisement features a dark background with a glowing orange and yellow wave at the bottom. The text is white and gold. The ConocoPhillips logo is a stylized figure in gold.