

# Marine predators in trouble: researchers

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Iconic marine predators such as sharks, tunas, swordfish, and marlins are becoming increasingly rare under current fishing trends, say University of British Columbia researchers.

In half of the North Atlantic and North Pacific waters under national jurisdiction, fishing has led to a 90-per-cent decrease in top predators since the 1950s, and the impacts are now headed south of the Equator, according to a new study published online today in the journal *Marine Ecological Progress Series*. The study is available at <http://www.int-res.com/abstracts/meps/v442/p169-185/>.

Funded by the Pew Charitable Trusts, the Natural Sciences and Engineering Research Council of Canada (NSERC), and the French Consulate-General in Vancouver, researchers from UBC's Fisheries Centre modeled the impact of fishing around the world using global databases of fisheries catches from 1950 to 2006 and satellite images of phytoplankton, which are used to map where predators should be, based on [food availability](#).

The scientists found that the exploitation of [marine predators](#) first occurred in coastal areas of northern countries, then expanded to the high seas and to the [southern hemisphere](#). The decline of top-of-the-food-chain predators also means widespread and fundamental changes to both the structure and function of marine systems.

"Species such as tuna have been seriously exploited because of high market demand," says Laura Tremblay-Boyer, a PhD student at UBC

Fisheries Centre and lead author of the study.

"A constant theme throughout our study of global [marine ecosystems](#) is that these top predators are today prey for human beings, assisted by some serious technology," says Tremblay-Boyer. "Top marine predators are more intrinsically vulnerable to the effects of fishing due to their life histories. Bluefin tuna, for instance, cannot reproduce until age nine."

In addition to low numbers in the northern hemisphere, the study shows a dramatic decline in the south seas, where wild-caught fish are sent to northern markets.

"After running out of predator fish in the north Atlantic and Pacific, rather than implementing strict management and enforcement, the fishing industry pointed its bows south," says co-author Daniel Pauly, principal investigator of the Sea Around Us Project at UBC. "The southern hemisphere predators are now on the same trajectory as the ones in the [northern hemisphere](#). What happens next when we have nowhere left to turn?"

Under current fishing practices, biomass loss of predatory species is expected to occur in the southern hemisphere, but humans living in the south will not be able to rely on the north for their [fish](#), the research team adds.

Provided by University of British Columbia

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