

Environment: Ocean Life on the Brink of No

Return

By Stephen Leahy

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Every single commercial fishery in the world will be wiped out before 2050 and the oceans may never recover if over-fishing continues at its current rate, a four-year scientific investigation has found. By the time, my nine-year old son is my age, there would be no wild seafood left, "said Emmett Duffy, a scientist at the Virginia Institute of Marine Sciences in the United States.

In this grim, not-to-far-off future, not only will there be no fish to eat, humans will lose the vital services oceans provide, including processing wastes, cleaning beaches, providing oxygen, controlling flooding, and absorbing carbon dioxide from the atmosphere.

The world's oceans are already in a precarious state, hammered by extensive coastal pollution, climate change, over-fishing and the extremely wasteful practice of deep-sea trawling, in which heavily weighted nets dragged along the sea floor scoop up everything in their 100 metre-wide paths, including vast amounts of unwanted sea creatures, the so called by-catch which usually does not survive. The only way to reverse this slide into any abysmal future is to stop fishing out one species after another to ensure that there is an abundance of biodiversity in the seas, researchers have found.

It turns out that every species matters. Each species of fish plays an important role in the health and capacity of the oceans to respond to disease or disasters. That is the gist of the most comprehensive analysis of life in the oceans ever carried out, published Thursday in the Journal Science.

Where we looked at tide pools or studies over the entire world's oceans, we saw the same picture emerging, "said lead author Boris Worm of Dalhousie University. "In losing species, we lose the productivity and stability of entire ecosystems. I was shocked and disturbed by how consistent these trends are---beyond anything we suspected."

Previous studies by Worm and others found that variety of species has dropped by as much as 50% in the past 50 years in many parts of the world's oceans. Ocean are different than they were 50, 100, or 1,000 years ago and much has been lost and forgotten to the detriment of humanity, Worm told IPS.

"Millions of seal sized northern Atlantic cod, along with the now extinct Gray Whale, walrus and sea mink (a type of sea otter) filled the oceans of Atlantic Canada not that long ago." He said. After 500 years of fishing, these creatures are gone. And despite a 12-year ban on fishing of cod and other ground fish, the stocks of these species have not recovered and may never recover, he said. "The fact is, we do not know how to fix this," said Worm. "We have always relied on the self-repairing ability of marine ecosystems."

But there is a point of no-return, the international scientific analysis warns. That species go extinct is not new, but the study shows that when too many species in a region become extinct or are too low in numbers, the ecosystem itself unravels, leading to further loss of species until little is left but jellyfish.

"The results are striking. There are clear benefits to having more biodiversity than less," Kimberley Selkoe of the National Center for Ecological Analysis and Synthesis at the University of California, told IPS.

As an example of the intricacy of marine ecosystems, Selkoe explained that overharvesting of oysters in the Chesapeake Bay on the United State's Atlantic coast brought reduced water filtration, resulting in more effluents in the water and an increase in toxic algal booms that have had significant economic impacts on the entire region.

The new yardstick for ensuring the health of ecosystems ought to be more biodiversity, she said. .

"If we do not make substantial changes soon, our wild seafood will be little nothing more than sea squirt soup", co-author Steve Palumbi of Stanford University told IPS from an international conference on Marine Genomics in Sorrento, Italy.

Many of the economic activities along coastlines also rely on diverse systems and the healthy waters they supply, said Palumbi.

"The ocean is a great recycler, it takes sewage and recycles it into nutrients, it scrubs toxins out of the water, and it produces food and turns carbon dioxide into food and oxygen," he said. But in order to provide these services, the oceans needs all of its working parts the million of plant and animal species that inhabit the sea.

Whales have been among the most threatened marine species and after a 20-year ban on commercial hunting, most species seem to be coming back. However, there are exceptions, such as the North Atlantic Right and the West Pacific Gray Whales, which may not survive because their numbers are so low, he said.

With protection, recovery is possible for many species, which then can be fished once more and harvested at a set scientific harvest rate. The study looked at protected areas worldwide and found that restoration of biodiversity increases productivity four-fold in terms of catch per unit effort. But less than 1 % of the global ocean is protected right now.

"We won't see complete recovery in one year, but in many cases, species come back more quickly in three to five to ten years," said Worm. "And where this has been done, we see immediately economic benefits." But fisheries management has to move beyond the mere estimates of how many fish of prized commercial species are caught to that of a holistic ecosystem management.

Practically, that means ocean zoning much like municipal land zoning, where parts of the ocean are off-limits to all fishing, while others can be fished carefully, and others can be open to trawling or oil or gas development, said Worm.

This has been done successful in New Zealand and there is enough information available to set up similar zoning areas for all coastal fisheries, scientists say. The open ocean will also need some form of zoning but until more is known there should be an international moratorium on deep-sea bottom trawling because of the damage being done to corals and the amount of by-catch, said Worm.

However, he said that Canada and other nations "lack the political will" to take action. Indeed Canada opposes a proposed U.N. moratorium on trawling.

"Fishing has to be more selective and much less destructive and more sustainable, including greatly reducing by-catch and to stop feeding farmed salmon fish meal," he said. Worm recently glimpsed the past glory of the oceans at an extremely remote coral atoll in the middle of the Pacific Ocean that has never been fished. The abundance of species was amazing, it is a perfect natural economy with no waste," the researcher said. "It was like traveling back in time".