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Tuna fisheries facing a cod-like collapse

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Phil McKenna

The collapse of north Atlantic cod populations could provide an important lesson for preventing tuna from suffering a similar fate worldwide, researchers say.

Over-fishing caused Canada's cod industry to plummet in value from \$1.4 billion in 1968 to just \$10 million in 2004. Now researchers warn that tuna fisheries worldwide are on the brink of a similar collapse.

"Cod have been reduced to between 1% and 3% of their natural abundance and people still want to fish them," says Daniel Pauly of the University of British Columbia, Vancouver, Canada. "Are we going to do the same thing with tuna?"

Slippery slope

From 1960 to 2000, worldwide tuna production doubled roughly every 10 years and peaked at 4.45 million tons in 2004.

But the impact of intensive fishing is starting to be felt. In 2001, the western and central Pacific Ocean yellowfin tuna fishing industry was worth \$1.9 billion. By 2004, its value had dropped by more than 40% to \$1.1 billion. According to Barbara Block of Stanford University in California, US, Atlantic bluefin tuna populations have declined by as much as 90% since the 1970s and Mediterranean bluefin by about 50%. In both cases, the rate of decline has accelerated in recent years.

"Their population is on the brink of collapse, and it has happened on our watch, in my lifetime," adds Block. "We have the science today to rebuild populations and prevent them from going the way of the cod."

Block and colleagues presented research illustrating the decline of tuna at the annual meeting of the American Association for the Advancement of Science in Boston, US. Her team spent more than a decade tagging and tracking over 1000 Atlantic bluefin tuna.

Late breeders

Her research provides a better understanding of the complex back-and-forth between eastern and western Atlantic populations, which were once thought to be entirely distinct. It also shows that bluefins that breed in the Gulf of Mexico delay spawning until they are 12 years old, unlike their Mediterranean counterparts, which begin breeding at age 8.

"We're not letting the western fish reach maturity and breed in the Gulf," says Block. As a result, "young bluefin are increasingly hard to find along our eastern coast."

Fishing prior to breeding age is also putting strain on yellowfin and bigeye tuna populations in the western and central Pacific Ocean. Jose Ingles of the World Wildlife Fund estimates that juvenile yellowfin and bigeye tuna are mixed in with between 10% and 70% of adult tuna caught by fleets in the region.

Safe route

Ingles proposes a new joint management programme within the "Coral Triangle" of Malaysia, the Philippines and Papua New Guinea to create a "tuna highway" for juvenile tuna migrating between spawning and feeding grounds. By letting young fish mature, their annual value should increase from \$236 million to \$1.5 billion, Ingles reckons.

Rashid Sumaila, also at the University of British Columbia, says a shift towards balancing short- and long-term priorities is vital to the future of the tuna fishing industry. "To ensure that future generations are not left behind," Sumaila says, "ask yourself whose fish, yours or your grandchildren's, you are

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<http://www-marine.stanford.edu/block.htm>

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