

# Double jeopardy: Tuna and billfish

July 25 2011

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Dr. David Die provided data and input on a new study in Science by global fisheries experts presenting an alarming assessment of several economically important fish populations. The analysis of 61 species of “scombrids,” which include tunas, bonitos, mackerels and Spanish mackerels, and billfishes, which include swordfish and marlins. The result: seven species classified as threatened with extinction and four as “near threatened” for the IUCN Red List of Threatened Species. Credit: UM/RSMAS

A new study by top global fisheries experts presents an alarming assessment of several economically important fish populations. The analysis of 61 species of "scombrids," which include tunas, bonitos, mackerels and Spanish mackerels, and billfishes, which include swordfish and marlins, classified seven as threatened with extinction and four as "near threatened" for the IUCN Red List of Threatened Species.

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Science associate professor, and assistant director of NOAA's Cooperative Institute for Marine and Atmospheric Studies (CIMAS) David Die and colleagues scientifically evaluated the [species](#) population and conservation status under the IUCN Red List Categories and Criteria, which is the most widely accepted system for classifying extinction risk at the species level.

"The IUCN assessments provide us with a different view of the conservation status of marine resources, when compared to that provided by fishery management organizations," said Die, who has studied highly migratory tuna and billfish for more than 12 years.

Die conducts research on highly migratory tunas and billfish and regularly contributes to assessments of Atlantic billfish and Atlantic tropical tunas. He contributed information on abundance trends and biological parameters for the Atlantic species of large tunas and billfish to this recent IUCN review study.

Of the 61 known species, seven are classified in a "threatened" category, being at serious risk of extinction. Four species are listed as "near threatened" and nearly two-thirds have been placed in the "least concern" category.

According to the IUCN, there is growing concern that in spite of the healthy status of several epipelagic (those living near the surface) fish stocks some scombrid and billfish species are being heavily overfished, and there is a lack of resolve to protect against overexploitation driven by high prices.

Global [fish populations](#) are under pressure from overfishing, pollution, habitat degradation, and disease. The U.N. Food and Agriculture Organization (FAO) estimates that 25 percent of the world's commercially important marine fish stocks were overfished or depleted.

Scombrids and billfishes are found throughout the world's oceans, primarily in tropical and temperate coastal and marine regions, and vary greatly in size and lifespan. The largest billfish, the Blue Marlin, and largest scombrid species, the Atlantic Bluefin, can grow to more than four meters (31 feet) long. In contrast, the smallest scombrid species, the Indian Mackerel, only grows to a maximum of 31 centimeters (~ 1 foot).

The health of ocean fisheries is assessed in several different ways. The IUCN review seeks to identify species threatened by [extinction](#) where as fisheries management evaluations focus on a population's sustainability in the face of exploitation.

"Our study reaches similar conclusions to those from the FAO," said Die. "Approximately one quarter of the worldwide [fish stocks](#) and species of "scombrids" are in an undesirable state of sustainable exploitation or conservation."

**More information:** The study, titled "High Value and Long Life—Double Jeopardy for Tunas and Billfishes," was published in the July 15 issue of the journal *Science*.

Provided by University of Miami

Citation: Double jeopardy: Tuna and billfish (2011, July 25) retrieved 25 April 2024 from <https://phys.org/news/2011-07-jeopardy-tuna-billfish.html>

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