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Study questions previously accepted data on white marlin

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A new research paper published last week by several South Florida fisheries scientists and colleagues is sure to cause heartburn for fellow scientists, fisheries managers, recreational anglers and commercial fishers around the world.

The study, published in *Endangered Species Research*, calls into question all previously accepted data on white marlin -- one of the most over-exploited species on earth. The gist, according to co-author Mahmood Shivji of the Guy Harvey Research Institute at Nova Southeastern University, is that more than a quarter of white marlin caught in the western North Atlantic are not really whites at all, but roundscale spearfish -- a new species that was only confirmed about three years ago.

White marlin and roundscale spearfish look so much alike that only DNA examination or a very practiced eye can tell the difference -- the anal fin is located farther behind the anal vent on a roundscale spearfish -- resulting in widespread misidentification for perhaps decades.

"It's back to the drawing board for white marlin," Shivji said.

The findings are important because they show data used to make previous population assessments for white marlin are contaminated, affecting worldwide management and conservation policy. As recently as 2007, petitions were filed to put white marlin on the U.S. Endangered Species List. If those efforts had succeeded, the result would have been the shutdown of lucrative white marlin tournaments.

A SLIGHT RISE

But the most recent assessment conducted by the International Convention for the Conservation of Atlantic Tunas (ICCAT) showed a slight uptick in white marlin population size, which led to the species' removal from NOAA Fisheries' Species of Concern List.

"All previous stock assessments for white marlin are completely uncertain," Shivji said. "They didn't know they were dealing with two species."

The study's lead author, Lawrence Beerkircher of NOAA Fisheries' Southeast Fisheries Science Center in Miami, first was alerted to the possible discrepancy in his job running the agency's observer program tracking billfish bycatch in the swordfish and tuna fisheries. Some of the bycatch that looked like white marlin seemed a little "off." Beerkircher then sent DNA samples to Shivji, a genetics expert.

DIFFERENT DNA

Shivji found that the DNA of the look-alike fish was completely different from white marlin and matched it to a species first discovered in the 1960s but not confirmed until recently as a roundscale spearfish. Wondering how widespread the misidentification might be, Beerkircher and NOAA colleagues Eric Prince and Joe Serafy worked with ICCAT scientist Victor Restrepo and Venezuelan scientist Freddy Arocha to collect more fish samples and observer data from commercial and tournament fisheries in the United States and abroad. Using genetics and computer-simulation studies, they found that about 27 percent of what were called white marlin were roundscale spearfish.

But Shivji said the proportion of spearfish in the white marlin fishery could be larger or smaller in different areas at different times of year.

“We know nothing about roundscale spearfish,” Shivji said. “It could be as severely overfished as white marlin. White marlin stocks could be worse off. They could be better off. Over the years, how many of those white marlin landings in tournaments that they're giving out prizes for are really white marlin? This isn't just a U.S. issue; it's an ICCAT issue.”

Shivji said scientists will have to go back decades, reexamining old spines used for age and growth studies to get a better handle on how many fish have been identified erroneously as white marlin.

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