

# Abundance of a look-alike species clouds population status of a million dollar fish

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The prized white marlin, sought by anglers in million dollar prize tournaments and captured incidentally in commercial fisheries, is among the most overfished marine species under international management and the subject of contentious debate on how to best achieve its recovery.

Now a new study published today in the journal *Endangered [Species Research](#)* casts uncertainty on the accuracy of current knowledge of white marlin biology and previous population assessments, which form the basis of management and conservation policy. The study reports that the white marlin look-alike species, the enigmatic roundscale spearfish - whose very existence was only confirmed three years ago - makes up almost a third (approximately 27%) of the fish historically identified as white marlin. This previously unrealized, relatively high abundance of roundscale spearfish and their misidentification might have impacted past assessments of white marlin population sizes and concomitant management efforts.

Given considerable concern about its declining populations, petitions to list the white marlin under the U.S. [Endangered Species Act](#) were considered in 2002 and 2007. Listing the fish would have undoubtedly put an end to white marlin fishing tournaments, which infuse millions of dollars into the recreational [fishing industry](#) as well as local economies.

"This proportion of roundscale spearfish along with its longstanding misidentification as white marlin for decades compromises the accuracy of current biological knowledge on white marlin" said lead author

Lawrence Beerkircher of the NOAA Fisheries Service. "These findings illustrate a need for the immediate collection of biological and fishery data such as age and growth, migratory patterns, and fishery catch statistics for both the real white marlin and the roundscale spearfish."

To examine if the high proportion of roundscale spearfish and its misidentification might have impacted past assessments of white marlin population sizes, the research team conducted computer simulation studies which calculated historical population size trends for each species individually. Since the past ratios of roundscale spearfish to white marlin are unknown, the researchers also examined how variations in these ratios would impact the projections of [population size](#) trends for each species. The results of these computer simulations illustrated that variations in the ratio of the two species could indeed alter projections of white marlin population sizes, highlighting the influence that species misidentifications could have on the accuracy of past assessments.

For example, the most recent population assessment conducted by the International Convention for the Conservation of Atlantic Tunas (ICCAT) for white marlin in 2006 indicated a slight increasing trend in its population sizes, which was one of several reasons for its removal from the National Oceanic and Atmospheric Administration's (NOAA) Species of Concern List. However, based on the computer simulations conducted in the new study, whether this was, or was not, the right call cannot be determined without a breakdown of the two species ratios over time.

"It's remarkable how a simple case of mistaken identity can muddy what we thought we knew about a species from decades of study. This case points to the importance of making sure we know what species are out there in the first place", said Mahmood Shivji, Director of the Guy Harvey Research Institute at Nova Southeastern University, who co-led the study. "Furthermore, it's important to realize that we are also dealing

with the existence of another large oceanic species, the roundscale spearfish, about which we know almost nothing and whose populations may be declining, steady or even on the rise"

"Obtaining a robust picture of white marlin population status will require conducting [population](#) assessments with updated roundscale spearfish proportions", said Lawrence Beerkircher. "New species-specific monitoring measures will be essential for achieving this goal and aiding rebuilding of white marlin populations."

Source: Nova Southeastern University

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