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Study pinpoints Pacific Ocean priority areas to consider for marine conservation

12 May 2022

By Responsible Seafood Advocate

Study identifies tentative migration routes and pinpoints 'high priority' areas for marine conservation

If marine conservation efforts focused on large pelagic fishes (such as tuna, blue marlin and swordfish) are to be successful, it requires targeting four "high-traffic areas" in the Pacific Ocean as a high priority, says a new study **published in *Sustainability* (https://www.mdpi.com/2071-1050/14/9/5577)**.

Researchers at the University of British Columbia's Sea Around Us initiative studied the tendency of fish to return to their birthplace to reproduce and paired that knowledge with catch distribution maps and tagging and genetic sequencing studies.

"We applied the concept of philopatry to the movements extracted from tagging studies of species such as the near-threatened Pacific bluefin tuna and the heavily-fished yellowfin tuna," said Veronica Relano, a Ph.D. candidate with the Sea Around Us and lead author of the study. "We also combined this information with the links between populations inferred from genetic studies. This allowed us to identify tentative annual migration cycles."

New research has pinpointed four high-traffic areas in the Pacific Ocean that should be considered “high priority” for marine conservation.

The study identifies the tentative migration routes of 11 tuna and other large pelagic fish in the Pacific Ocean and determines that certain areas should be considered “high” and “very high” priority when it comes to maintaining their populations.

“The interesting thing is that when we compared our proposed migration routes and the mapped catch data from 1950 to 2016 available on the Sea Around Us website, we found many coincidences,” said Relano. “Clearly, the accuracy of these routes is reinforced by considering philopatry, although they are still tentative.”

After analyzing the seasonal migration paths of each of the 11 fish species individually, the researchers superposed them and noticed that several species and populations of these large pelagic fishes use the same migration routes.

“Those high-traffic areas, two of which are in northeastern and central sections of the Pacific Ocean and two in the southwestern and central sections, should become parts of blue corridors,” said Dr. Daniel Pauly, co-author of the study and the Sea Around Us principal investigator. “[These] are routes where strict fisheries management measures or partial bans of industrial fishing ought to be enforced to allow for increased connectivity of habitats and thus allow populations of marine species to maintain themselves.”

However, before setting up any protected area to support the re-building of diminished fish populations, Pauly said it’s important to consider the entire body of knowledge available on the migrations and movements of different species.

“This is what we set out to do with this study,” he said. “Our findings suggest in which areas such efforts would be more effective, but as stated in our title, the closed migration cycles we propose are tentative, and thus it would be nice if other researchers set out to test their validity.”

Read the full study here (https://www.mdpi.com/2071-1050/14/9/5577).

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