

New research into Pacific bluefin tuna migrations underscores the need for science-based management across the Pacific Ocean

Monterey Bay Aquarium calls on Pacific nations to act when fisheries commissions meet this summer

*Pacific bluefin tuna, *Thunnus orientalis*, were on exhibit in the past in the Open Sea exhibit. ©Monterey Bay Aquarium*

On July 28, a paper published in *Science* magazine by researchers at the Monterey Bay Aquarium, Harvard University and The National Museum of Natural History reexamines our understanding of the links connecting bluefin tuna across the Pacific Ocean. The piece synthesizes several recent studies conducted by Japanese and U.S. researchers who used chemical signals found in the tissues of bluefin tuna to trace their recent migrations across the Pacific. These studies found that in certain years, a majority of sexually mature (age 7 and older) Pacific bluefin tuna in the Sea of Japan had recently migrated from the waters of the Eastern Pacific Ocean, off the coasts of California and Mexico.

These results add to the current state of knowledge on Pacific bluefin tuna migrations. We know that they are born in the Western Pacific, and that some migrate to the east in their first or second year of life. These fish remain in the east for several years before returning to the west to spawn. The conventional wisdom was that the fish that migrated to the Eastern Pacific constituted a small minority of the Pacific bluefin tuna population. However, the high proportion of fish found in the west that had recently resided in the Eastern Pacific suggests that these migrations may be far more common than previously thought. In other words, Pacific bluefin tuna in the Eastern Pacific may contribute significantly to the spawning population in the Western Pacific.

These results have important implications for management of a species whose population is at historically low levels.

"The Pacific bluefin tuna population is currently at approximately 2.6 percent of unished levels. This paper reinforces the urgent need for coordinated, science-based conservation and management across the Pacific Ocean to recover this iconic species," said [Margaret Spring](#), Chief Conservation Officer at the Monterey Bay Aquarium. "These latest findings show that conservation measures taken in only one portion of the Pacific bluefin's migratory travels will have little conservation benefit if not matched across its geographic range--from east to west.

"The results show that Eastern Pacific waters can be an important source of tuna for the spawning grounds in the west," Spring added. "As scientists collect more data, we expect that results will indicate that the recently implemented mandatory catch limits in the Eastern Pacific are working to help rebuild the Pacific bluefin tuna stock. However, the steps taken in the Eastern Pacific to recover Pacific bluefin tuna will not succeed without coordinated action in the Western Pacific. It is time for much more aggressive action by governments to reduce fishing in the Western Pacific Ocean, especially fishing of the smallest, youngest fish (less than 1 year old), so that these fish can live long enough to migrate to the Eastern Pacific and ultimately return to the spawning grounds off Japan. This is a formula to recover the species.

"Nations must commit to strong, science-based management," Spring stressed. "This paper underscores the importance of science as the foundation for effective management, providing essential information on tuna migrations - information that is so critical in designing effective management and recovery plans. The paper draws on research by scientists working in both the Eastern and Western Pacific as the basis for our understanding of tuna life history. We must continue to invest in Pacific bluefin tuna research, including stock assessment models that can account for migrations across the ocean. Through collaboration and investment in research, we can identify robust, science-based measures to recover this iconic species.

"Last week, the Inter-American Tropical Tuna Commission met in Mexico City, but nations made no progress in establishing a science-based recovery plan for Pacific bluefin tuna. We cannot afford further delay. We must make progress in late August, when member nations from the Inter-American Tropical Tuna Commission and the Western and Central Fisheries Commission hold a special joint meeting to address the recovery of Pacific bluefin tuna. The joint meeting is a critical opportunity for nations across the Pacific to incorporate new understandings from the latest research, and finally commit to a robust, science-based rebuilding plan for Pacific bluefin tuna. The evidence is clear: All Pacific nations must adopt a long-term and comprehensive plan to recover this species to healthy levels. Fishing communities across the Pacific Ocean are counting on it."