

# The sea roils and life returns: Marine biologists observe sea life after the 2011 tsunami

December 12 2016

---



Returning black rockfish (*Sebastes cheni*) observed by the authors in Nishi-Moune Bay, July 2014. Credit: Kyoto University/Reiji Masuda

The tsunami of 2011 is well remembered in Japan. Some towns have

recovered, while others struggle to return to a life that once was. The same is true for ecosystems. In a new study in *PLOS ONE*, Japanese researchers report how the sea life in different coastal regions of Japan struck by the tsunami have flourished or faltered.

"We watched in [real time](#) an ecosystem recover from a large natural disaster," said Reiji Masuda, who directs the Maizuru Fisheries Research Station at Kyoto University and led the study. "We could observe how species recovered and whether any [invading species](#) could thrive."

Even though, like the rest of the country, the authors were still in mourning in 2011, they also recognized the uniqueness of the opportunity and set up four research stations in Eastern Japan within two months of the [tsunami](#). They then continued to collect data for the next five years.

"We found a very logical progression. First, small fish with short lifespans thrived, but gradually larger fish with longer lifespans began to recover, stabilizing the populations of the small fish. Also, body lengths got longer over the years, suggesting that the environment was supporting healthy recovery."

The smaller fish recovered first because of their short reproductive cycle and the absence of predators. Another reason for their recovery, hypothesizes Masuda, was the new abundance of food.

"Many small fish survive off nutrients and sediments. The tsunami brought in a rich buffet from the land, and this could feed the fish."

Interestingly, the authors of the study did find a brief period of invasion. Species typically associated with southern climates were found in the stations until the later years of observation, when cold-water species began to stabilize and likely begin to prey on the aliens. Indeed, invasion

was greatest at the stations located in areas that suffered from the greatest destruction.

While Masuda's interest is primarily in marine life, he sees a bigger purpose for the research. "Japan suffers from many natural disasters, including tsunami and earthquakes. As marine biologists, we want to know how [sea life](#) recovers. But we hope our findings will help Japan prepare for disasters on land or sea."

**More information:** *PLOS ONE*, [DOI: 10.1371/journal.pone.0168261](https://doi.org/10.1371/journal.pone.0168261)

Provided by Kyoto University

Citation: The sea roils and life returns: Marine biologists observe sea life after the 2011 tsunami (2016, December 12) retrieved 25 April 2024 from <https://phys.org/news/2016-12-sea-roils-life-marine-biologists.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.