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Fisheries

Study: Coastal fisheries are resilient in the face of marine heatwaves

31 August 2023

By Responsible Seafood Advocate

In the years following marine heatwaves, effects were often minimal, Rutgers study finds

Marine heatwaves – prolonged periods of unusually warm ocean temperatures – are not having a lasting effect on the fish communities that have major commercial importance worldwide.

The finding from Rutgers University-led research is in contrast to the devastating impacts that marine heatwaves can have on other marine ecosystems, like coral bleaching and harmful algal blooms.

“There is an emerging sense that the oceans do have some resilience, and while they are changing in response to climate change, we don’t see evidence that marine heat waves are wiping out fisheries,” said Alexa Fredston, the lead author of the study, which was published in ***Nature*** (https://www.nature.com/articles/s41586-023-06449-y.).

The research assessed the effects on commercially important fish such as flounder, pollock and rockfish based on data extracted from decades of scientific trawl surveys of continental shelf ecosystems in North America and Europe. The analysis examined 248 marine heat waves with extreme sea bottom temperatures during this period and found that marine heat waves in general don’t show major adverse effects on regional fish communities. Declines in biomass did occur, but these cases

Marine heatwaves are not having a lasting effect on fish communities with major commercial importance, according to Rutgers-led research. Photo by Matthew Barra: https://www.pexels.com/photo/body-of-water-wave-812958/

were the exception, not the rule.

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“The oceans are highly variable, and fish populations vary quite a lot,” added Fredston. “Marine heatwaves can drive local change, but there have been hundreds of marine heatwaves with no lasting impacts.”

The data did reference incidents with major impacts, like the 2014-2016 marine heatwave in the Northeast Pacific known as “the Blob,” one of the largest ever that led to a 22 percent loss of biomass in the Gulf of Alaska. Conversely, a 2012 marine heatwave in the Northwest Atlantic led to a 70 percent biomass gain. The authors said these weren’t large changes compared to natural variability.

“We found that these negative impacts are unpredictable and that other heatwaves had no strong impacts,” said Malin Pinsky, a co-author. “This means that each heatwave that hits is like rolling the dice: Will it be a bad one or not? We don’t know until it happens.”

Read the full study. (https://www.nature.com/articles/s41586-023-06449-y.)

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