

How biodiversity is changing in one of the world's most productive ocean ecosystems

July 24 2024



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In research published in *Global Change Biology*, investigators have examined DNA within ocean bottom sediment cores to assess changes in living organisms within one of the world's most productive marine

ecosystems: the Atacama Trench in the eastern Pacific Ocean, which is located about 100 miles off the coast of Peru and Chile and lies at a depth of up to 5 miles below the surface.

The study is important because ecosystems around the Atacama Trench have been intensively fished and are affected by [climate change](#). Analyses showed a severe drop in biodiversity from 1970 to 1985 that aligns with one of the strongest known El Niño events, as well as extensive fishing efforts in the area. The researchers also found a direct impact of sea surface temperature on the composition of marine life over time.

"Despite not being recorded in the past, we now understand more about the effects of overfishing and extreme climatic events on marine biodiversity," said corresponding author Diego Elihú Rivera Rosas, a Ph.D. student at King Abdullah University of Science and Technology, in Saudi Arabia. "We hope that by studying these events in the past, we can anticipate similar scenarios and respond accordingly to protect and save marine life in the future."

More information: A sedimentary eDNA record of the Atacama Trench reveals biodiversity changes in the most productive marine ecosystem, *Global Change Biology* (2024). [DOI: 10.1111/gcb.17412](https://doi.org/10.1111/gcb.17412)

Provided by Wiley

Citation: How biodiversity is changing in one of the world's most productive ocean ecosystems (2024, July 24) retrieved 24 July 2024 from <https://phys.org/news/2024-07-biodiversity-world-productive-ocean-ecosystems.html>

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