The end of the reign of the anchovy?

The Peruvian anchovy, one of the most heavily fished species in the world, accounts for up to 10% of the total catch in the best years and plays a key role in aquaculture and animal feed, thus indirectly contributing to global food security.

Head of an anchovy caught during an oceanographic campaign off Peru.

The Peruvian upwelling is the most abundant in the world, particularly for anchovies. But this might not last. As a result of climate change, the waters will become warmer and less oxygenated, which could profoundly transform the local ecosystem, according to two main hypotheses: either the fish, including anchovies, will become smaller, or their populations could collapse in favour of other smaller species, such as the goby, a fish with a high tolerance of such anoxic conditions.

This hypothesis about gobies does not come out of the blue. In another upwelling, off the coast of Namibia, overexploitation of fishery resources until the 1960s, combined with low oxygen levels, caused the ecosystem to shift towards another stable system dominated by gobies and jellyfish, two species of little economic interest. Could the Peruvian upwelling be heading in the same direction?

To answer this question, scientists analysed sediment cores and looked back in time to the last interglacial period, around 116,000 to 130,000 years ago, when environmental conditions in the region corresponded to those predicted by models for the end of the 21st century. They discovered that, during this period, anchovies were not smaller, but much rarer. And the king of the seas back then was the goby!

Does this mean that the goby is set to return to reign? Whatever the case, this possibility is being taken very seriously because it could have dramatic consequences for the local economy, as it did in Namibia. Examination of the sediment cores also shows that the extreme abundance of the Peruvian upwelling is a recent phenomenon. An anomaly which, according to scientists, will not last. *Goby or not goby*, that may not be the only question. Whatever happens, it seems inevitable that local economic activities will have to adapt.

PARTNER

Marine Institute of Peru

••• Projections suggest that Peru's marine ecosystem could be transformed by climate change, calling for adaptation of local economic activities •••

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Anchovy fishermen, Peru.

"The sustainability of Peruvian anchovy fishing is tied to the breadth of scientific knowledge, the implementation of effective regulations and the commitment of all those involved in Peruvian industrial fishing to ensure the conservation of resources and the balance of the marine ecosystem. It is an example that could be replicated in other fisheries around the world".

Eduardo Ferreyros, National Fisheries Society, Peru

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