

Tech

New models help predict early spawning of fish caused by climate change

katewinslet • 3 days ago



Credits: Peter Prokosch, GRIDA, <https://www.grida.no/resources/3510>

Fisheries managers and researchers can now predict how early fish will spawn in response to rising water temperatures due to climate change, both in the ocean and in freshwater.

A new simple model developed by Columbia and the Chinese Academy of Sciences predicts the timing of spring spawning fish, with a very good accuracy, taking into account changes in mean

Brian Laundry's autopsy cannot identify the cause of death

[Read Next Story >](#)

Built based on seasonal description **temperature** The change represented by two sine curves. This model is based on the concept of triggering a hormonal cascade that “tell” when a fish breeds when a certain temperature threshold is reached.

However, as the water temperature rises, the process becomes unbalanced as the fish need more oxygen to survive. The problem is that the gills on the 2D surface cannot keep up with the oxygen demand of the 3D growth and the oxygen demand of the new temperature. Therefore, this imbalance stresses the fish, causing it to mature and spawn faster.

“When the average annual temperature rises in a particular region and period, spring temperatures” arrive “earlier. The new model, which assumes seasonal temperature fluctuations observed in nature, requires only the difference in average temperature as input. It between two periods, and between summer and winter temperatures. Using only these two numbers, the model predicts by the number of days of spawning. **fish** Dr. Daniel Pauly, Principal Researcher and Lead Author of the Sea Around Us Initiative at the UBC Institute for the Oceans and Fisheries, said: *Environmental biology of fish*..

“This simple **model** Hopefully, it will replace the complex hypothesis often presented to explain temporal changes in spawning in terms of adaptation to similar changes in the emergence of prey species. Cui Liang, co-author of this study and researcher at the Oceanography Institute of CAS.

Data confirm the link between respiratory stress and fish breeding

For more information:

Pauly D Other Fish Temperature and Maturity: A simple sinusoidal model for predicting accelerated spring spawning. *Environ Biol Fish* (2022).

doi.org/10.1007/s10641-022-01212-0

Provided by

The sea around us

Brian Laundry’s autopsy cannot identify the cause of death

[Read Next Story >](#)

Quote: The new model is the early spawning of fish due to climate change acquired from <https://phys.org/news/2022-02-climate-change-duced-early-spawning-fish> on February 14, 2022 (2022). February 14th) is useful for forecasting. [html](#)

This document is subject to copyright. No part may be reproduced without written permission, except for fair transactions for personal investigation or research purposes. Content is provided for informational purposes only.

New models help predict early spawning of fish caused by climate change

[Source link](#) New models help predict early spawning of fish caused by climate change

Taboola Feed

"Final Shot" Says Crypto Expert

The Legacy Report | Sponsored

Always Put a Plastic Bottle Here's Why

Rich Houses | Sponsored

85% of Americans Don't Ki

bonvoyaged.com | Sponsored

Brian Laundry's autopsy cannot identify the cause of death

[Read Next Story >](#)

[Read More](#)