



A warming ocean

Background reading for teachers

This reading gives you the background for each slide, with sources you can check.

Ocean heat

The IPCC's Sixth Assessment Report found that ocean warming accounts for about 91% of the heating of the climate system since 1971.¹ The slide rounds this to 'more than 90%'.

Degree heating weeks

NOAA Coral Reef Watch measures heat stress as degree heating weeks: the accumulation over the previous 12 weeks of temperatures at least 1°C above a reef's maximum monthly mean. In December 2023 it added three new alert levels: level 2 now covers 8 to 12 DHW, level 3 12 to 16 (multi-species mortality), level 4 16 to 20 (severe multi-species mortality, over 50% of corals) and level 5 above 20 DHW (near-complete mortality, over 80% of corals).^{2, 3}

The practice data

The temperatures on the worksheet are practice data for a typical central Philippine reef, with an assumed usual summer maximum of 29.5°C. They are not measurements from a specific reef.

Sources

1. IPCC (2021). Climate Change 2021: The Physical Science Basis. Working Group I contribution to the Sixth Assessment Report.
2. NOAA Coral Reef Watch. Methodology and products. coralreefwatch.noaa.gov
3. Manzello, D. (2024). Record-setting heat stress on coral reefs in 2023-2024, ICRI briefing. icriforum.org

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