Deep ocean warming as climate changes
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Marie-José Messias, from the University of Exeter.

"As well as finding that the deep ocean is holding much of this excess heat, our research shows how ocean currents redistribute heat to different regions.

"We found that this redistribution was a key driver of warming in the North Atlantic."

The researchers studied the system of currents known as the Atlantic Meridional Overturning Circulation (AMOC).

AMOC works like a conveyor belt, carrying warm water from the tropics north—where colder, dense water sinks into the deep ocean and spreads slowly south.

The findings highlight the importance of warming transferring by AMOC from one region to another.

Dr. Messias said excess heat from the Southern Hemisphere oceans is becoming important in the North Atlantic—now accounting for about a quarter of excess heat.

The study used temperature records and chemical "tracers"—compounds whose make-up can be used to discover past changes in the ocean.

The paper, published in the Nature journal Communications Earth & Environment, is entitled:
"The redistribution of anthropogenic excess heat is a key driver of warming in the North Atlantic."

More information: The redistribution of anthropogenic excess heat is a key driver of warming in the North Atlantic, Communications Earth & Environment (2022). DOI: 10.1038/s43247-022-00443-4

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