

Efficiency of Ocean Uptake

Science Question:

Does the ocean take up heat and other gases, e.g. CFCs or CO₂, as efficiently?

Findings:

- The ocean's Atlantic meridional overturning circulation (AMOC) is driven by ocean currents and the thermal contrast between the equator and the poles can vary a lot in magnitude.
- The stronger the AMOC the more heat and other gases the ocean absorbs and the deeper it sequesters them.
- CFCs and, by similarity, anthropogenic carbon are taken up faster than heat but this effect will slow down with time.

Impact:

As the ocean's uptake efficiency diminishes, the warming of the planet gets worse.

Why does it matter?

We must account for heat as well as other gases completely to better understand and predict the ocean's evolving role under Climate Change.

