

*Climate warming comes with: sea level rise, atmCO2 increases, and surface warming.
And **oxygen loss in the deep sea** (see PLOS ONE article).*

Recent deglaciation provides a laboratory to answer questions about how marine ecosystems respond and recover to climate change

This research reveals that previous oxygen loss wiped out seafloor biodiversity/abundance very quickly (decades-centuries), committing seafloor ecosystems to >1000 years of ecological recovery.

The Problem

Ocean ecosystems take thousands of years to recover after they are disturbed by abrupt climate warming and oxygen loss in the deep sea.

Marine ecosystem recovery previous though to occur on 100 year timescales, this research extends that estimate by an order of magnitude.

The composition of deep-sea seafloor communities are really, really sensitive to relatively small changes in dissolved oxygen.

Solutions

Short term: More comprehensive assessment of climate “commitment” impacts – i.e. what does permanent change look like to ecosystems/economies we “care” about.

*Long term: GHG reduction. International action.
Depoliticize climate science and solutions.*

Benefit?

So what?

To science: Better understanding that climate-forced oceanographic change is essentially permanent (on a human timescales).

To climate change decision making: Adds to the very large body of evidence linking climate change to major/catastrophic risks to ecosystem and economies.