

# Climate Change & the Sargasso Sea



The Sargasso Sea only takes up **roughly 1% of the ocean's surface**, but it is responsible for

**a net sink of 7% of the global carbon pump**

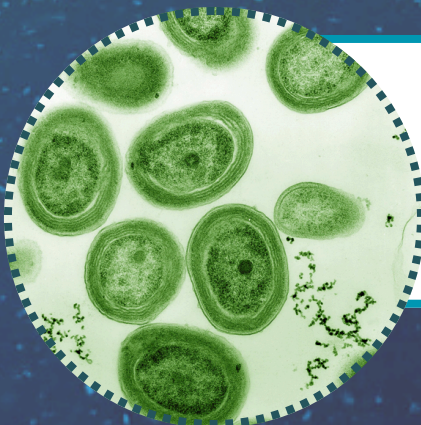
meaning that it plays an outsized role in climate change mitigation.

*A deep sea isopod specialised in feed on on sinking Sargassum. Photo Credit: Daniel Hentz, ©Woods Hole Oceanographic Institution*



**The Sargasso Sea is both threatened by climate change and acts to mitigate the effects of climate change.**

The Sargasso Sea is so effective at sequestering carbon because of the sinking of Sargassum to the deep sea, and the vertical migration of deep sea animals, which acts to transfer waste to the deep.



**Almost every second breath you take** comes from microscopic photosynthetic plankton on the high seas - like prochlorococcus, which was discovered in the Sargasso Sea.



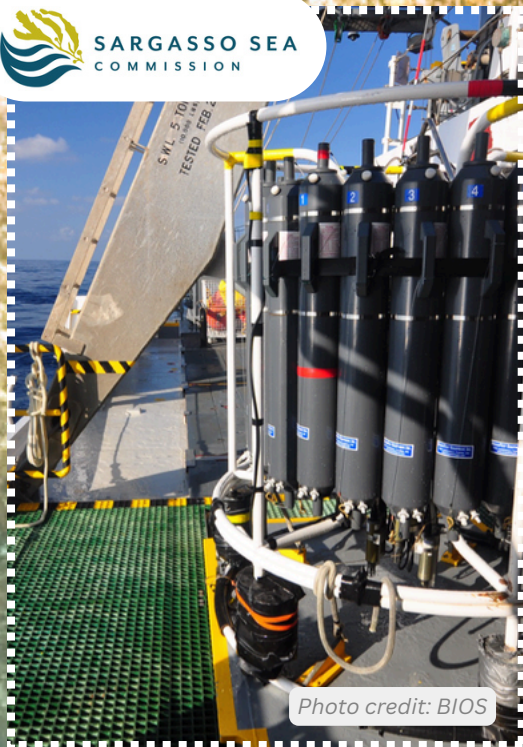
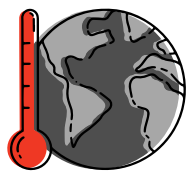


Photo credit: BIOS

## A HIGH SEAS ATLANTIC RESEARCH STATION.

The Sargasso Sea is one of the best known high seas ecosystems in the world because it is home to the Bermuda Atlantic Time Series Study (BATS), the longest-running time series for high seas oceanographic measurements, which is implemented by the Bermuda Institute of Ocean Sciences.



**There has been around 1.2°C of warming of the Sargasso Sea over the last 40 years.**

This has caused knock-on effects that can fundamentally alter the Sargasso Sea ecosystem including a **decrease in oxygen, increases in salinity and acidification, variability in nutrient levels, and changes in the planktonic community.**



Photo credit: Yunkai

**Primary production has decreased by more than 25% in the Sargasso Sea since the early 2000s.**

Despite this, **carbon still seems to be being sequestered to the deep at similar levels**, indicating that this work may be being done by a different species, such as bacteria.

- **Food webs are being restructured** and changes in species distribution are occurring due to climate pressures.
- **These cumulative stressors require precautionary and ecosystem-based approaches, as reflected in the BBNJ Agreement**



**THE SARGASSO SEA IS A SENTINEL ECOSYSTEM FOR MONITORING GLOBAL CLIMATE-OCEAN LINKAGE**