



IMarEST Emerging Marine Trends

Issue 4 - Antarctic benthos

Exposing a hidden and fragile ecosystem

The IMarEST recently published the [Ocean State Report](#), which reported dire outlooks for Antarctic sea-ice, with 2016 levels at their lowest extent ever recorded in the history of satellite monitoring. This melting results in vast habitat loss, causing problems for both land and seabed dwelling animals.

The Antarctic benthos - the life found on the seabed such as starfish, snails and corals - is an important natural regulator of climate change. Over 90% of the planet's carbon is held in the ocean and many calcifying marine species cycle this carbon, which ultimately gets buried in the sea floor when they die. Melting Antarctic ice poses two major problems to these species.

Firstly, melting ice increases the amount of sinking sediment that settles on top of, and smothers, the marine benthos. Melting ice will also result in an increased occurrence of icebergs, which can scrape the seabed (known as *ice scour*) in areas where icebergs are frequently grounded. This destroys the deep habitat, resulting in loss of carbon uptake and emphasises the complexity of the issue surrounding climate change and the Antarctic environment. The combination of both these effects causes reduced carbon uptake, increasing overall carbon dioxide levels in the atmosphere and contributing to global warming.

However, the effects may not all be negative. Melting ice may increase the amount of phytoplankton - floating, microscopic organisms that photosynthesise - in the Antarctic. Phytoplankton use CO₂ from the atmosphere for photosynthesis so greater numbers of phytoplankton could help reduce global warming. Although this could reduce greenhouse gases in the atmosphere, there are still many questions that need to be answered on the potential ecological repercussions of increased phytoplankton for marine ecosystems and needs further study to fully understand the effects.



How can you help?

As the topic of Antarctic benthos destruction is a new issue, you may think it might be hard to engage with. However, you can still get involved in this issue by helping to combat climate change. By doing your bit to reduce your contributions towards climate change, we can attempt to mitigate some of the global warming effects on melting ice in the Antarctic. If you would like to get involved and help with the issues raised in this article, here is a list of useful tips and resources:

- **Make your work commute greener** – a 2017 study by Lund University, Sweden, ranked 148 actions that an individual can take to reduce climate change. It found that going car-free was the most effective action that you can take to reduce emissions. Instead of driving, try taking public transport or riding a bike. If you have to drive, try car-sharing or switching to an electric or hybrid vehicle. When going on holiday [fly less](#) if you can but if you do have to fly, try to [offset your emissions](#). [Find out more](#) on how to make your transportation more sustainable.
- **Reduce your meat intake** – after fossil fuels, the food industry is one of the biggest contributors to worldwide greenhouse gas emissions – if all the cattle were their own nation, they would be the world's third largest emitter of greenhouse gases! You don't need to go vegetarian or vegan to have an impact, by simply [reducing your animal protein consumption by half](#), you can [reduce your carbon footprint by more than 40%!](#)
- **Eat organic** – apart from the health benefits of not putting pesticides in our bodies, eating organic also benefits the environment as many synthetic fertilisers begin as by-products of oil refining. This means every time we eat a conventional fruit or vegetable, we're giving a little boost to the oil industry. [Find out more](#) on why eating organic benefits the climate.
- **Use energy wisely** – by [using your energy in a more efficient way](#), you can both reduce your carbon footprint and save money. Try these small changes:
 - Change to energy-efficient lightbulbs
 - Turn computers and TV's off standby
 - Look for a high energy efficiency rating sticker when buying new appliances
 - Insulate your home for the winter to stop heat escaping
 - Wash your clothes in warm (not hot) or cold water
 - Hang up your clothes to dry them rather than use a tumble dryer
- **Exercise your rights as both a citizen and as a consumer** – if we all try and influence how industries are run or subsidised, we can all make larger scale changes. By putting pressure on governments and on companies, system-wide changes can be made that will make a huge difference. On a more individual level, we can 'divest' funds out of polluting activities. By avoiding investing in fossil fuels or banks that invest in industries that are high in emissions, we can take climate action while also gaining economic benefits.
- **Spread the word!** – by staying up to date on issues that are related to the Antarctic benthos, climate change and global warming and helping to make others aware of the problem and what they can do to help, you can help drive wider behavioural changes. Follow the news in dedicated ocean news platforms such as [the IMarEST's newsroom](#) or [Climate Home News](#) and tell your friends, family and work colleagues about what they can do to help combat climate change.

