

Faecal attraction: Whale poop fights climate change

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A sperm whale swims in the Mediterranean sea. Southern Ocean sperm whales are an unexpected ally in the fight against global warming, removing the equivalent carbon emissions from 40,000 cars each year thanks to their faeces, a study found on Wednesday.

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The cetaceans have been previously fingered as climate culprits because they breathe out carbon dioxide (CO₂), the commonest [greenhouse gas](#).

But this is only a part of the picture, according to the paper, published in the British journal [Proceedings of the Royal Society B](#).

In a heroic calculation, Australian biologists estimated that the estimated 12,000 sperm whales in the [Southern Ocean](#) each defecate around 50 tonnes of iron into the sea every year after digesting the fish and squid they hunt.

The iron is a terrific food for phytoplankton -- marine plants that live near the ocean surface and which suck up CO₂ from the atmosphere through photosynthesis.

As a result of faecal fertilisation, the whales remove 400,000 tonnes of carbon each year, twice as much as the 200,000 tonnes of CO₂ that they contribute through respiration.

By way of comparison, 200,000 tonnes of CO₂ is equal to the emissions of almost 40,000 passenger cars, according to an equation on the website of the US [Environmental Protection Agency](#) (EPA).

The whales' faeces are so effective because they are emitted in liquid form and close to the surface, before the mammals dive, said the paper.

Industrialised whaling not only gravely threatened Southern Ocean sperm whales, it also damaged a major carbon "sink," the scientific term for something that removes more greenhouse gases than it produces, it added.

Before industrial whaling, the population of this species was about 10 times bigger, which meant around two million tonnes of CO₂ were removed annually, said the paper.

The Southern Ocean is rich in nitrogen but poor in iron, which is essential for phytoplankton.

The scientists suspect that because sperm whales cluster in specific areas

of the Southern Ocean there is a clear link between food availability and cetacean [faeces](#).

This could explain the "krill paradox," they believe. Researchers have previously found that when baleen whales are killed, the amount of krill in that sea area declines, which thus affects the entire food chain.

The study is lead-authored by Trish Lavery of the School of Biological Sciences at Flinders University in Adelaide.

The EPA's website, on the basis of a calculation made in 2005, says that a passenger car that is driven for 20,000 kilometers (12,000 miles) a year yields annual emissions in CO₂ or its equivalent of just over five tonnes.

The future of [sperm whales](#) and other species comes under scrutiny next week in Agadir, Morocco, where the International Whaling Commission (IWC) discusses a plan to relax a 24-year moratorium on commercial whaling.

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