



Plastic polluted Arctic islands are dumping ground for Gulf Stream

Beaches in the remote Arctic islands were found to be more polluted than European ones due to plastic carried from much further south

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Beaches on remote Arctic islands are heavily polluted with plastic, a new expedition has found, demonstrating that the region is the dumping ground for waste carried northwards on the Gulf Stream.

The shorelines of islands in the Svalbard archipelago and of Jan Mayen island were found to be littered with much more plastic waste than on European beaches, despite tiny local populations.

The cause is plastic drifting northwards up the Atlantic from Europe and north America, before being stranded in the Arctic. Plastic waste dumped in UK seas is carried to the Arctic within two years, according to a previous study.

At least 1tn pieces of plastic have already been frozen into the Arctic ice over past decades, according to other research. This makes it a major global sink for plastic pollution, many times more concentrated than the well-known great Pacific garbage patch.

With global warming causing rapid melting of the ice cap, plastic is being released and making the problem even worse. Plastic pollution kills animals that become tangled up and seriously harms those that mistake it for food.

The latest expedition took Dutch scientists from the Wageningen Economic Research (WER) institute to six beaches in Svalbard, where they recorded 876 pieces of visible litter per 100m stretch of beach. On Jan Mayen Island, the most remote in the North Atlantic, they recorded 575 pieces. By comparison, an average of 375 pieces were found on Dutch beaches, despite their proximity to the source of the waste.

“When these items arrive in the Arctic, they will remain here,” said Wouter Jan Strietman, one of the WER team. “This is why the amount of litter in the Arctic is building up every year. As a consequence, the sea around Svalbard ends up becoming the drain hole of the Gulf Stream.”

The goal of the expedition, which has just returned from three weeks in the Arctic, is to try to identify the plastic waste. “Almost nothing is known about the source of the litter,” said Strietman. “If you really want to do something about it, then you need to know the sources.”



Tangled piece of strapping band on Spitsbergen in the Svalbard archipelago. Strapping band is used to secure fish boxes onboard fishing vessels. In Svalbard, reindeer commonly get stuck in these tangled pieces or in fishing nets. Photograph: WJ Strietman/WUR

About half the plastic was too broken up to be identified, but 12% was nets, ropes and buoys from fishing vessels. The researchers also found large bundles of tangled strapping band, which is used to secure fish boxes on fishing vessels, with waste strapping most likely thrown overboard. Strietman is now working on projects with the fishing industry to reduce these problems.

But much of the waste comes from far away - 8% of the items were plastic bottle caps - and one distinctive bucket-like item was identified as being from oyster farms in southern Europe. The problem is increasing too, said Strietman: “As you have the currents pouring in new amounts of plastic all day, and those pieces getting smaller, you get a multiplier effect.”

“When it really hit home was when I saw in front of the walruses, there was all kinds of plastic,” Strietman told the Guardian. “It was right there in front of me. Now you could see the direct relationship between these innocent animals and the plastic.”

It was revealed in May that 38m pieces of litter had polluted the uninhabited Henderson Island in the South Pacific. With 99.8% of the litter being plastic, it represents the highest density of human-related debris recorded anywhere in the world. In February, scientists reported “extraordinary” levels of toxic pollution in the Mariana trench, with plastic waste carrying industrial chemicals to one of the most remote and inaccessible places on the planet.

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