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Seabirds indicate little change in the amounts of plastic at sea since 1980s – UCT study



Brown Skuas breeding on Inaccessible Island, Tristan da Cunha, mainly feed on seabirds that breed on the island.

Photo: Peter Ryan

A new study by researchers at the University of Cape Town's [FitzPatrick Institute of African Ornithology](#) shows that the amount of plastic in petrels breeding at Inaccessible Island in the central South Atlantic Ocean has remained constant since the 1980s. The findings of their study were published in the [Science of The Total Environment](#) journal.

Petrels can be used as indicators of plastic pollution at sea. For instance, in the Northern Hemisphere, Fulmars breeding close to densely-populated areas contain more plastic than those breeding in remote Arctic regions. Given the steady increase in the global production of plastics since the 1950s, the researchers expected the amount of plastic in petrels to increase over time.

Over the last few decades there has been growing concern about the amount of waste plastic in the environment. Physical degradation of plastic items has led to tiny plastic particles becoming ubiquitous around the world, with especially high concentrations in the sea.

“Seabirds frequently consume these plastic fragments directly or in their food. Among seabirds, the highest ingested plastic loads typically are found in petrels, which can store plastics in their stomachs for weeks or months. Indeed, petrels were among the first organisms found to contain plastics in 1960, and since then, almost all petrel species examined have been found to contain plastic,” said PhD student Vonica Perold, who led the study.

The study examined plastic loads in Brown Skua pellets containing the remains of four petrel species. Skuas are predatory seabirds that mainly feed on other seabirds while breeding at Inaccessible Island, and regurgitate the indigestible remains of their prey – including the plastic they contain. Perold took advantage of samples collected since 1987 by [Emeritus Professor Peter Ryan](#), who started conducting research on the island while a student at the FitzPatrick Institute of African Ornithology.

Professor Ryan said: “Global plastic production increased more than four-fold over the study period, so the failure to detect an increase in the amount of plastic in petrels sampled in the same way at the same site for over 30 years is surprising. Our findings suggest that efforts to limit waste plastic entering the environment have been at least partly successful, reducing the proportion of plastic leaking into the sea over this period.”

He continued: “When the study started, dumping of plastics at sea was still legal, and lax controls on plastic converters resulted in huge numbers of industrial pellets reaching the sea. Since then numerous initiatives have been implemented to reduce plastic leakage and clean up plastics in the environment. For the seabirds in the South Atlantic, these measures appear to have more or less balanced the increase in the amount of plastic now being produced.”

“Clearly there is room for even stricter controls to reduce waste plastic leakage, and in particular to reduce the amount of plastic used in single-use applications. Continued monitoring of plastic in seabirds will help to determine the efficacy of further efforts, including the UN Plastic Treaty currently being negotiated.”

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