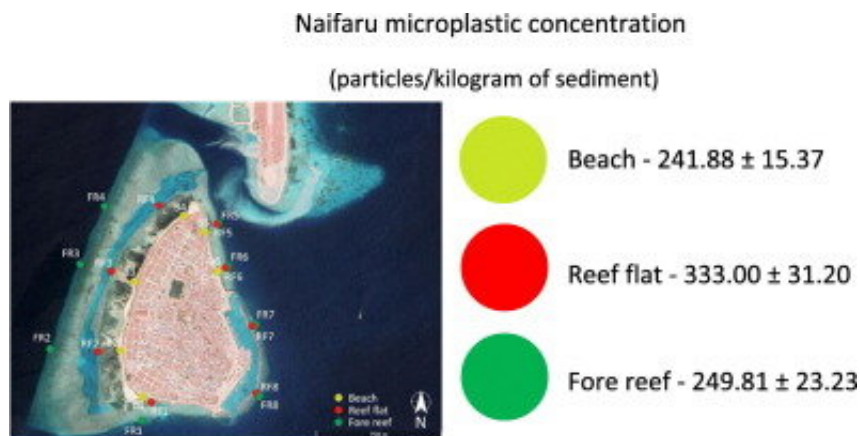


Maldives records highest level of micro plastic pollution on the planet

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Microplastic concentration map around Naifaru, an island in the Maldives 141 km north of the capital, Malé. It is the capital and most populous island of Lhaviyani Atoll. Credit: *Science of the Total Environment*

The amount of micro plastic pollution in waters around the Maldives, a global tourist destination known for its beautiful coastline, is amongst the highest in the world and has the potential to severely impact marine life in shallow reefs and threaten the livelihoods of island communities.

Microplastics are pieces of plastic waste that measure less than 5 millimetres long, and due to their often microscopic size are considered invisible water pollutants. Small pieces of plastic can break down over time from plastic bottles, textiles and clothing, remain in the world's oceans.

Marine scientists from Flinders University in Australia recorded the levels of [plastic pollution](#) in sand across 22 sites off the coast of Naifaru, the most populous island in Lhaviyani Atoll, to determine how much microplastic is present around the island. Microplastic distribution was found to be ubiquitous in the [marine environment](#), with the results published in *Science of the Total Environment* journal.

Flinders University Honours student and lead researcher Toby Patti says micro plastics are highly concentrated in waters around Naifaru.

"The concentration of microplastics found on Naifaru in the Maldives (55 -1127.5 microplastics/kg) was greater than those previously found on a highly populated site at Tamil Nadu, India (3—611 microplastics/kg), and was a similar concentration to that found on inhabited and uninhabited [islands](#) elsewhere in the Maldives (197 -822 particles/kg)."

"The majority of micro plastics found in our study were less than 0.4mm in width, so our results raise concerns about the potential for microplastic ingestion by marine organisms in the shallow coral reef system. The accumulation of microplastics is a serious concern for the ecosystem and the [local community](#) living off of these marine resources, and can have a [negative impact](#) on human health."

The high levels of microplastics could have been transported by [ocean currents](#) from neighbouring countries in the Indian Ocean like India, as well as from Maldivian land reclamation policies, poor sewerage & wastewater systems.

Professor Karen Burke Da Silva says notorious 'rubbish islands' used as landfill sites are also contributing to the high concentration of microplastic found around the island.

"Current waste management practices in the Maldives cannot keep up

with population growth and the pace of development. The small island nation encounters several challenges regarding waste management systems and has seen a 58% increase of waste generated per capita on local islands in the last decade," says Professor Burke Da Silva.

"Without a significant increase in waste reduction and rapid improvements in waste management, small island communities will continue to generate high levels of [microplastic](#) pollution in marine environments, with potential to negatively impact the health of the ecosystem, marine organisms, and local island communities."

The researchers are now looking at the stomach content of coral reef fish to see if they have bellies full of microplastics in a follow up study.

More information: Toby B. Patti et al. Spatial distribution of microplastics around an inhabited coral island in the Maldives, Indian Ocean, *Science of The Total Environment* (2020). [DOI: 10.1016/j.scitotenv.2020.141263](#)

Provided by Flinders University

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