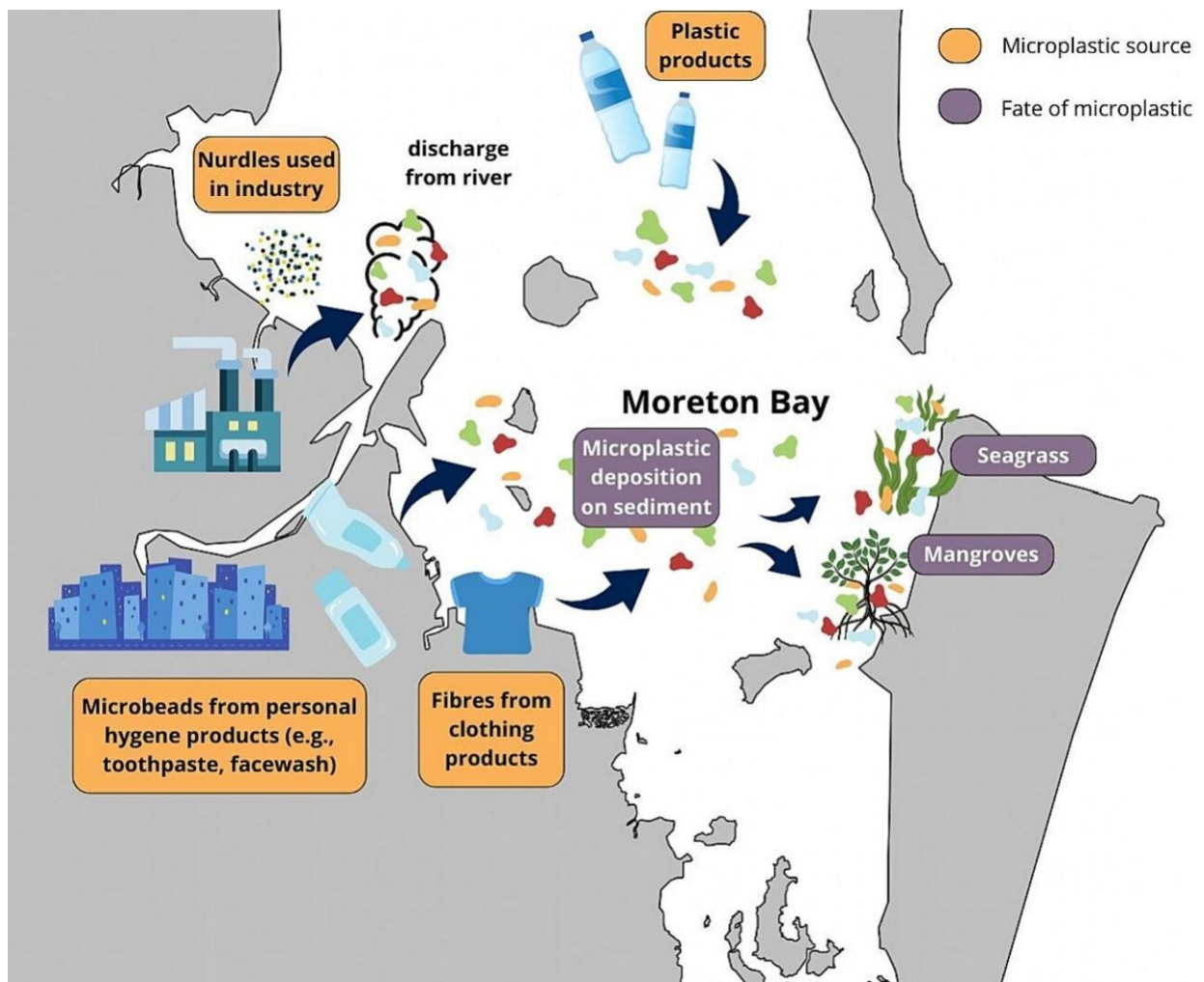


Thousands of tons of microplastics found in Moreton Bay

March 25 2024



Credit: *Science of The Total Environment* (2024). DOI: 10.1016/j.scitotenv.2024.170987

University of Queensland researchers estimate there could be up to 7,000 tons of microplastics polluting vital ecosystems in Brisbane's Moreton Bay.

Dr. Elvis Okoffo from UQ's Queensland Alliance for Environmental Health Sciences said the team measured plastic stored within 50 surface sediment samples collected across Moreton Bay. The work is [published](#) in the journal *Science of The Total Environment*.

"The level of plastic contamination we found is equivalent to three Olympic swimming pools full of plastic or 1.5 million single use [plastic bags](#)," Dr. Okoffo said.

"The main types of plastic detected were polyethylene (PE) and polyvinyl chloride (PVC).

"PE is used for [single-use](#) items such as plastic food wrapping, bags and bottles and PVC is used in pipes, building materials, electronics, and clothing.

"These were the most used types of plastics in Australia between 2019 and 2020, and our findings suggest a direct link between the use of these plastics and their prominence in the coastal environment."

The UQ research team used a mass based [quantitative method](#) to measure the concentration of seven common plastic types in the bay and its ecosystems, including mangroves, seagrasses and mud.

Associate Professor Helen Bostock Lyman from UQ's School of the Environment said [sediment samples](#) were collected from across the bay using a small metal grabber lowered to the sea floor.

"The samples were put into glass jars, dried in the lab and analyzed for

plastic polymers using a solvent extraction and mass spectrometry technique which looks at the chemical signature of the different polymers," Dr. Bostock said.

"The advantage of this method is that we can quantitatively measure plastic concentrations of any size range.

"Understanding the types of plastic polluting coastal environments and the scale of the issue is critical to informing strategies to reduce future pollution.

"This is the first study to quantify plastic in Moreton Bay and one of the few studies that has quantified microplastic pollution in coastal areas around Australia.

"We are currently investigating how plastic has changed over time in Moreton Bay from [sediment cores](#) from the center of the bay and we will be looking at the level of plastic contamination in organisms that live there."

More information: Elvis D. Okoffo et al, Plastic pollution in Moreton Bay sediments, Southeast Queensland, Australia, *Science of The Total Environment* (2024). [DOI: 10.1016/j.scitotenv.2024.170987](https://doi.org/10.1016/j.scitotenv.2024.170987)

Provided by University of Queensland

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