International investigation begins on the effect of microplastics on manta rays

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The effect of tiny plastic particles on the health of manta rays and whale sharks is the focus of a new research project through Murdoch University.

Elitza Germanov has embarked on a PhD project comparing whether these filter feeding animals are being harmed by the presence of microplastics in Indonesia, the Philippines and off the coast of Western Australia.

"The increasing levels of marine plastic debris are a large-scale, global environmental problem and the waters of South-East Asia are some of the worst areas on the planet," said Ms Germanov.

"After China, Indonesia is the second highest producer of plastic waste in the world, with the Philippines ranked third.

"Currently, an approximately 3.22 million tons of mismanaged plastic waste is being disposed of in Indonesia annually, with up to 40 per cent entering the marine environment."

Ms Germanov said that, although there was considerable knowledge about plastic pollution, very little was understood about microplastics, which are pieces smaller than 5 millimetres in length.

"I am interested in the health effects of microplastics on filter feeders like manta rays and whale sharks," Ms Germanov said.

As part of her PhD, Ms Germanov will measure the levels of microplastics in the feeding grounds of manta rays and whale sharks in the three countries and measure the levels of microplastics in the guts of the animals.

Working with the Murdoch University's Separation Science and Metabolomics Laboratory, Ms Germanov will establish how levels of plastic associated toxins such as pesticides and industrial chemicals are building up in the animals.

"Hopefully this work will encourage communities to find better solutions for waste management," she said.

Ms Germanov's research is being conducted with the support of the Marine Megafauna Foundation.

Provided by Murdoch University

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