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PLASTIC POLLUTION WIDESPREAD IN WATER BODIES ACROSS THE WORLD

Relevant for: Environment | Topic: Environmental Pollution - Air, Water, Soil & E-waste

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Two papers published in *Nature* have found evidence for widespread plastic contamination of coral reefs and freshwater lakes. The reef study finds that larger fragments (mostly debris from the fishing industry) make up most of the plastic found, and these macroplastics are especially abundant in deep reefs. The assessment of freshwater lakes and reservoirs reveals that all assessed bodies of water were contaminated with microplastics.

Hudson Pinheiro from the California Academy of Sciences, San Francisco and colleagues surveyed global reefs for macroplastics (over 5 cm) and other debris in 84 shallow (less than 30 metres deep) and deep (30-150 metres) coral ecosystems at 25 locations across the Pacific, Atlantic and Indian Ocean basins. Debris was found in 77 of the 84 sites including in some of Earth's most remote and near-pristine reefs, such as in uninhabited central Pacific atolls. Macroplastics accounted for 88% of the debris found. Levels of macroplastics were highest in the deep reefs. In most surveyed areas, fishing vessels were identified as the main source of plastic, such as lines and discarded traps. The findings contrast with the global pattern observed in other nearshore marine ecosystems, where macroplastic densities decrease with depth and are dominated by consumer items.

In the second study, Veronica Nava from the University of Milano-Bicocca, Milan, Italy. and others sampled the surface waters of 38 lakes and reservoirs in 23 countries mainly concentrated in the Northern Hemisphere. They found microplastics (over 250 microns) in all sample sites. "Our results indicate that two types of lakes are particularly vulnerable to plastic contamination: lakes and reservoirs in densely populated and urbanised areas and large lakes and reservoirs with elevated deposition areas and high levels of anthropogenic influence," they write.

They found plastic concentrations varying widely among lakes. In the most polluted lakes, plastic concentrations were found to "reach or even exceed those reported in the subtropical oceanic gyres, marine areas collecting large amounts of debris". "Our findings highlight the importance of including lakes and reservoirs when addressing plastic pollution, in the context of pollution management and for the continued provision of lake ecosystem services," they note.

The two studies demonstrate the widespread contamination of water bodies with plastic debris, and underscore the urgent need for coordinated, systematic monitoring of plastic pollution.

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