OCEAN PLASTICS

Toxic food

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Plastic pollution in the oceans poses a great threat to marine ecosystems, not only because of the persistent presence of plastics in the water, but also because of the chemicals they contain. The detection of persistent bio-accumulative toxic (PBT) chemicals in plastics has raised great concerns about marine environmental health; however, the potential risks of those chemicals to marine organisms are still poorly understood.

Julia Reisser from The Ocean Cleanup Foundation, The Netherlands, and colleagues measured the concentrations of 59 PBT chemicals — including polycyclic aromatic hydrocarbons and polychlorinated biphenyls — in the plastics from the North Pacific accumulation zone (NPAC), and assessed the potential risks of those chemicals to the marine organisms.

The results show that 84% of those examined plastics have at least one PBT chemical with concentrations exceeding safe levels as reported in the Canadian Environmental Quality Standards. The dry mass of plastics is found to be up to 180 times higher than that of organisms, indicating that those plastics polluted with PBT chemicals are major food for the organisms that feed on the sea surface in NPAC. Plastics are likely to play a role in transferring toxic chemicals through the food chain between marine organisms in the region.

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