

Plastic waste problem persists

Despite efforts, less than half of garbage finds its proper place

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POSTMEDIA NEWS

Despite efforts to reduce and recycle plastic, the planet is still awash with wayward wrappers, bottles and bags.

Almost half of the world's marine animals and a fifth of its seabirds are at risk of becoming entangled or eating the stuff, prompting ecologists to call for the worst plastics to be declared hazardous materials.

Without action, the international group estimates, the planet could have another 33 billion tonnes of plastic by 2050. That would fill 2.75 billion garbage trucks, enough to wrap around the planet 800 times if lined up end to end, the researchers say in a commentary in the current issue of the journal *Nature*.

"This could be reduced to just four billion tonnes if the most problematic plastics are classified as hazardous immediately and replaced with safer, reusable materials in the next decade," they say.

Industry officials were quick to call the idea "neither justified nor helpful," saying plastic debris is better tackled through more research and "public-private partnerships."

The ecologists say the physical dangers of plastic debris are "well enough established" and the chemical dangers "sufficiently worrying" to warrant regulatory action now.

Less than half of the 280 million tonnes of plastic produced around the world annually ends up in a landfill or being recycled. Much of it becomes debris that can threaten both humans and wildlife, ecologists Chelsea Rochman, at the University of California, and Mark Anthony Browne, at the U.S. National Centre for Ecological Analysis and Synthesis write in the commentary, which was also signed by eight colleagues from Japan, Europe and the U.S.

They note that the United Nations-sponsored Convention



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Volunteers try to clear a waterway filled with discarded plastic bottles and other garbage that was blocking the Vacha Dam, near the town of Krichim, Bulgaria in 2009.

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on Biological Diversity reported last year that all sea turtle species, 45 per cent of marine mammal species and 21 per cent of seabird species can be harmed by eating or becoming entangled in plastic. Larger pieces, such as floating bottles, pontoons and bags, can carry species to new habitats where they can kill or injure ecologically and commercially important species, including mussels, salt-marsh grasses and corals.

And as plastic degrades into smaller pieces, studies have not only shown it gets into creatures' stomachs but also suggested that bits of "microplastic," and some of their chemical components, can get into cells and tissues.

Another problem is that plastic debris can act like a magnet for other pollutants. "Pesticides and organic pollutants such as polychlorinated biphenyls are consistently found on plastic waste at harmful concentrations 100 times those found in sediments and one million times those occurring in sea water," the report says.

"We believe that manufacturers of plastic, along with the food and textile industries that rely heavily on it, should have to prove that their products and packaging are safe," the researchers say.

They say the focus should first be on the four most problematic

plastics — PVC, polystyrene, polyurethane and polycarbonate, which make up roughly 30 per cent of global production. They are difficult to recycle and are made of "potentially toxic materials."

PVC is used in construction, such as in pipes that carry drinking water; polystyrene is used for food packaging; polyurethane in furniture; and polycarbonate in electronics.

"Recycling often involves burning plastics and using the energy released for other purposes, but incineration can generate priority pollutants and greenhouse gases," the report says.

"In a closed-loop system, plastics would be continually reused and replenished only when materials become too degraded."

The Canadian Plastics Industry Association did not respond to requests for comment.