

# Science report: US should make less plastic to save oceans

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America needs to rethink and reduce the way it generates plastics because so much of the material is littering the oceans and other waters, the National Academy of Sciences says in a new report.

The United States, the world's top plastics waste producer, generates more than 46 million tons (42 million metric tons) a year, and about 2.2 billion pounds (1 million metric tons) ends up in the world's oceans, according to the academy's [report](#).

If the current rise in plastics pollution continues, the world by 2030 will be putting 58.4 million tons (53 million metric tons) into the oceans each year, or about half the weight of the fish caught in seas, the report said.

Recycling and proper disposal alone aren't enough and can't handle the problem, so the "United States should substantially reduce solid waste generation (absolute and per person) to reduce plastic waste in the environment," said the report by [the independent body](#) of scientists set up by President Abraham Lincoln to advise the federal government on big research issues.

The plastics issue can't be solved unless the country makes less plastic, designs it differently, keeps better track of it and cleans up more waste, and "that's why our number one recommendation is to reduce solid waste generation," said report chair Margaret Spring, chief conservation and science officer at the Monterey Bay Aquarium.

"We suggest that one way to reduce plastic waste would be to make less plastic," said oceanographer Kara Lavender Law, a report co-author who has conducted numerous studies about plastic waste. "Recycling cannot manage the vast majority of the plastic waste that we generate."

The panel provided a menu of potential ways to fix the plastics problem, starting with "national goals and strategies to cap or reduce virgin plastic production."

Virgin plastic is plastic that starts from feedstock that hasn't been used—namely, non-recycled material. The problem, the report said, is

that "virgin plastic prices are artificially low due to fossil fuel subsidies, therefore virgin plastics are more profitable to produce"—and U.S. manufacturing of them continues to increase.

"More than 90% of plastics are made from virgin fossil feedstocks, which utilizes roughly 6% of global oil consumption," the report said. And this makes virgin plastic a climate issue as well as a pollution problem, said study co-author Jenna Jambeck, a University of Georgia researcher who focuses on waste issues.

While recycling "is technically possible for some plastics, little plastic waste is recycled in the United States," the report said, noting that materials put in plastics to change hardness or color make them too complex to recycle cheaply, compared to making new virgin plastic.

"One of the major barriers for recycling is the economics of virgin plastic and subsidization of the fossil fuel industry," Spring said.

The American Chemistry Council, which represents plastics manufacturers, lauded most of the academy's report, but it blasted the idea of limiting plastics production.

"This is misguided and would lead to supply chain disruptions, economic and inflationary pressure on already hurt consumers and worse environmental outcomes, particularly related to [climate change](#)," American Chemistry Council Vice President Joshua Baca said in a statement. The organization, which touted \$7.5 billion in advanced recycling projects since 2017, called for a study on greenhouse gas implications of raw materials used in packaging and plastic products.

The report's figures and recommendations make sense and are grounded in science, said Australian scientist Denise Hardesty who studies the plastics [waste](#) issue but wasn't part of the U.S. report.

"We don't want to keep doing beach clean-ups for generations," Hardesty said in an email. "Without a systems change, those ([plastic waste](#)) accumulating areas will continue—and will grow."

The issue is important because plastics cause "devastating impacts on ocean health and marine wildlife," the report said.

Fish, marine mammals and seabirds get tangled in plastics or eat them, get sick and frequently die, the report said. Looking at hundreds of studies, the report said of 914 marine species examined, 701 had problems with ingesting plastic and 354 of them got tangled in plastics.

And DNA studies show that some plastics—especially those exposed to wastewater—contain human and wildlife viruses and bacteria that can spread disease, the report said.

Plastic pollution is not just an ocean problem, but it's a problem in rivers, lakes and on land, Spring said, adding that the Great Lakes probably have a higher percentage of [plastic](#) pollution than the seas.

Researchers have been studying the issue for years but can't really say what percentage of the plastics produced by the U.S. ends up in the water because there are no monitoring and reporting requirements—and there should be, Law said.

The U.S. makes and exports plastics as well as imports it so the problem is global, the authors said.

"The United States produces the material, imports it, exports it, we all use it, we all dispose of it," Law said. "Being the major offender, we also have this opportunity" to fix the problem.

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