

# The 1,000 rivers contributing the most to ocean plastics

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Credit: The Ocean Cleanup

A team of researchers affiliated with several institutions in the Netherlands and one in Germany has created a list of the 1000 rivers around the globe that are pouring the most plastics into the world's oceans. In their paper published in the journal *Science Advances*, the

group describes their study of the factors that introduce plastics into the ocean, and the methods they used to figure out which rivers were the largest contributors.

[Prior research](#) has shown that an enormous amount of man-made [plastic](#) makes its way into the world's oceans. And many studies have shown the kinds of impacts such plastics can have on the creatures that live in the sea, particularly those exposed to microplastics. In this new effort, the researchers have attempted to find the major sources for plastics in the ocean.

To trace the path of plastics from where they are used to the ocean, the researchers looked at possible routes and found three main drivers: wind and various forms of precipitation that move plastics from one area to another; the way land is used and its geography—different types of terrain can make it easier for plastics to be moved by [natural forces](#); and the distance plastics have to travel to get to the sea.

Travel distance was found to play a major factor in the likelihood of plastics making it to an ocean. Plastics used near the ocean, for example, or near rivers that run a short distance to the ocean, were found to have a higher probability of making it to the ocean than those more distant from the sea.

The researchers then used the factors they identified as part of a study on the world's rivers. They noted that prior efforts had found evidence that most of the plastics dumped into the [ocean](#) come from a few very large river systems. But they found evidence suggesting it was more complicated than that. As they studied thousands of river systems looking at their [geological features](#) and nearness to populated areas and how far they had to travel from [urban areas](#) before reaching the sea, they found that much plastic made it to the sea from smaller rivers, as well. They have created a map showing the top 1000 rivers that contribute up

to 80% of all plastics dumped into the oceans.

**More information:** Lourens J. J. Meijer et al. More than 1000 rivers account for 80% of global riverine plastic emissions into the ocean, *Science Advances* (2021). [DOI: 10.1126/sciadv.aaz5803](https://doi.org/10.1126/sciadv.aaz5803)

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