PLASTIC POLLUTION

WITH SPECIFIC VISUALISATIONS ON MARINE POLLUTION

image source: https://www.wwf.org.uk/fight-plastic-pollution

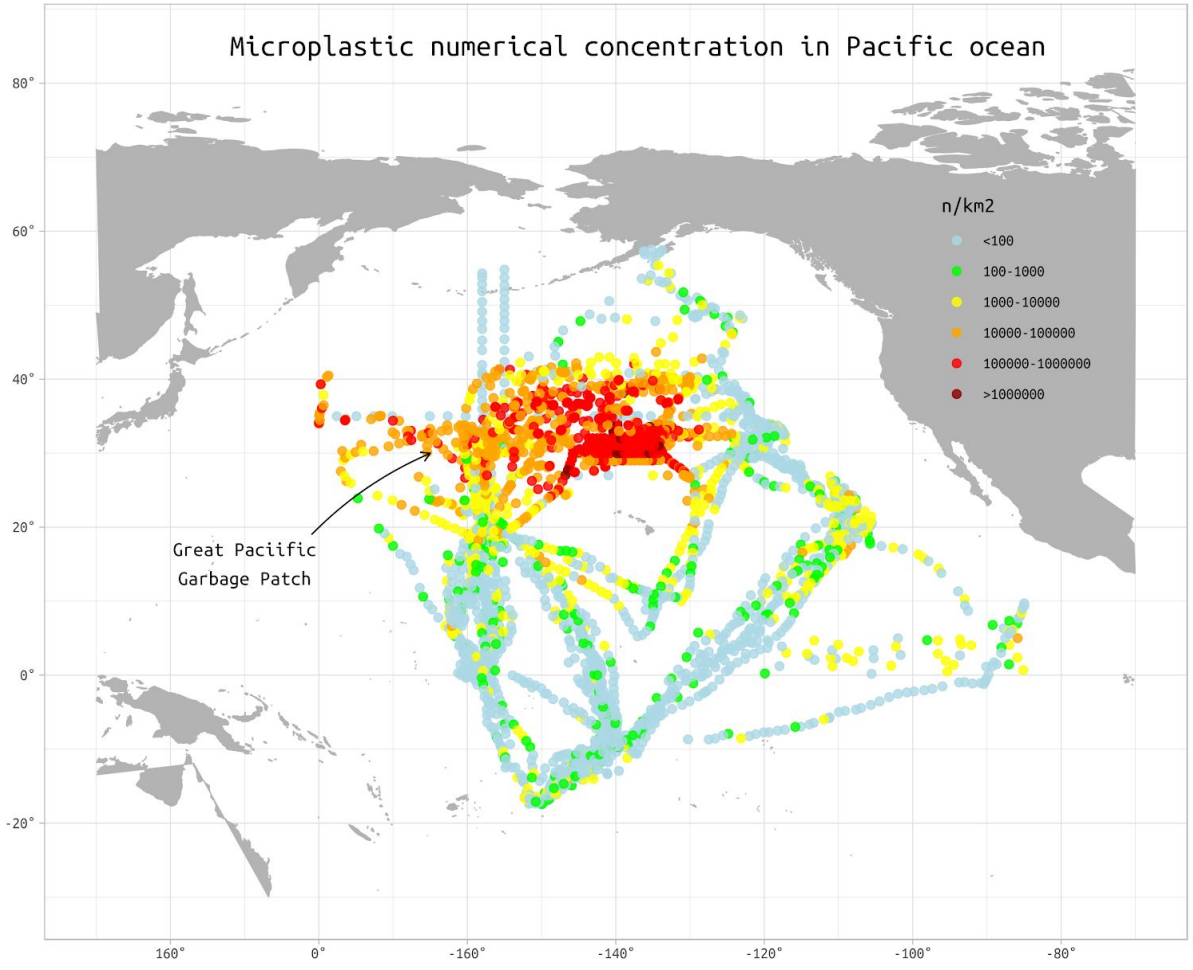
Main article

The thing about environmental pollution–everyone knows it exists, most people understand it's pretty bad, and yet very few people realise the whole extent of pollution. It has become one of the most serious problems that humanity faces, and while there are several kinds of pollution, perhaps the most alarming would be plastic pollution, which increases at a huge rate. The effort all the countries must make to stop it is massive and must, first and foremost, be done on the government level. However, raising awareness and helping people understand the scale is also important, and it is what we hope to do with out work, where we went looking about data, in particular, on marine plastic pollution and tried to make the visualisations on it as comprehensive as possible.

Throughout the last few decades, plastic generation has had the biggest growth of most man-made materials. To fuel convenience in daily life, there occurred a shift from reusable to single-use containers, and it is exactly what influenced the producing of plastic. The huge concern is that none of the commonly used plastics are biodegradable, having been made from monomers such as ethylene and propylene that are derived from fossil hydrocarbons. Therefore, rather than decompose, they accumulate in landfills or the natural environment (1), and unless there are immediate actions taken, can stay there for decades or even

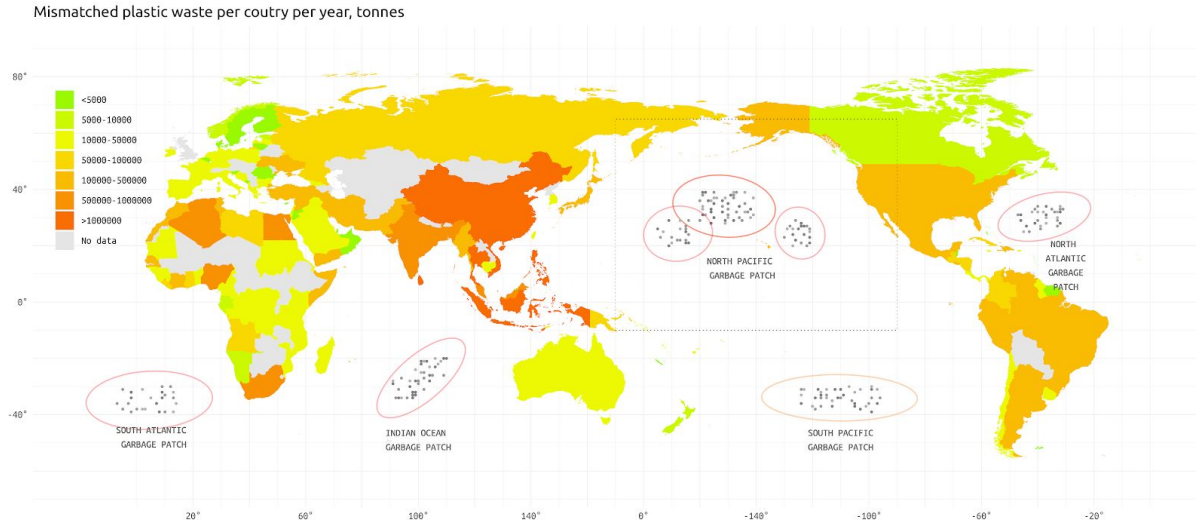
centuries to come. The lack of data regarding plastic pollution outside of Europe and the US also makes tackling the problems more difficult.

There are metric tonnes of plastic produced, discarded and accumulated every single year, and only a small percentage of it is recycled or incinerated. While there's huge amounts of plastic in landfills, it is usually controlled and contained in some. However, nothing of the sort can be said about the marine environment and marine plastic pollution remains one of the biggest threats to wildlife, usually by way of entangling or poisoning them. Ocean plastic floats around in surface waters until finally accumulating in remote areas of the world's oceans (2). One of them, where both the amount of plastic and the rate with which it accumulates are increasing almost exponentially, far more than in any other areas. It is now called The Great Pacific Garbage Patch (GPGP) and it lies in the tropical waters between Hawaii and California, making up a big chunk of the North Pacific Ocean. Below is a visualisation we made to illustrate the problem, based on the data we found.



While the quantity of plastic in the marine environment is widely documented, the amount of plastic entering the ocean from waste generated on land is unknown. According to (3), 275 million metric tons (MT) of plastic waste was generated in 192 coastal countries in 2010, with 4.8 to 12.7 million MT entering the ocean. Of course, the bigger the population size and the worse the quality of waste management, the more plastic debris each country contributes. Without the improvements in waste management and recycling, the cumulative quantity of

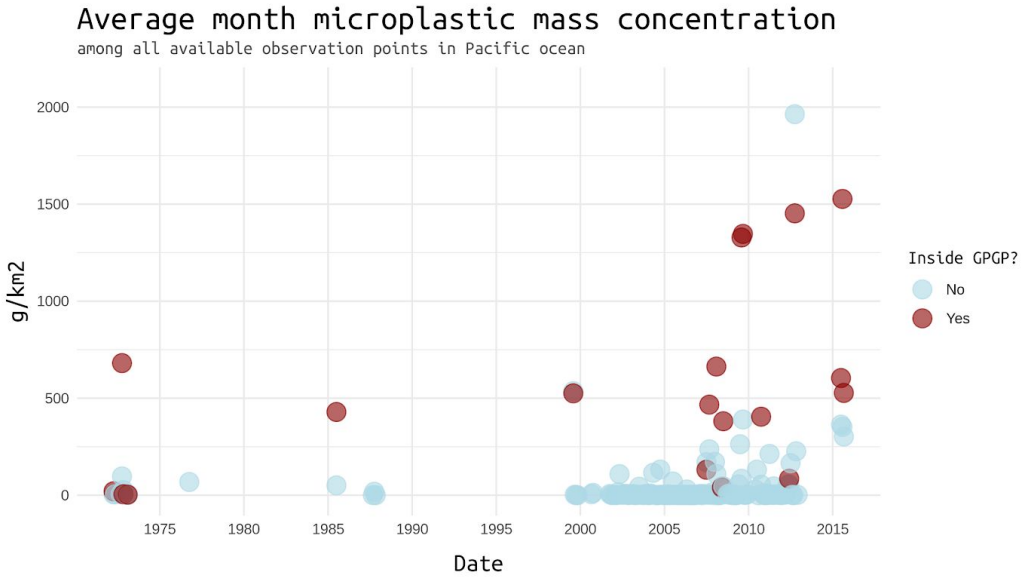
plastic waste available to enter the ocean from land is predicted to increase by an order of magnitude by 2025 (3). Below is the visualisation of plastic waste by country.



Citations

(1) “Production, use, and fate of all plastics ever made”, Roland Geyer et al., 2017
(2) “Evidence that the Great Pacific Garbage Patch is rapidly accumulating plastic”, L. Lebreton et al., 2018
(3) “Plastic waste inputs from land into the ocean”, Jenna R. Jambeck et al., 2015

Bullet points



- in this visualisation you can see that 1) the amount of plastic in the Pacific ocean has increased greatly in the last few decades (however, partly due to more observation info being available) and most of the plastic waste in the Pacific is located inside the The Great Pacific Garbage Patch (GPGP)