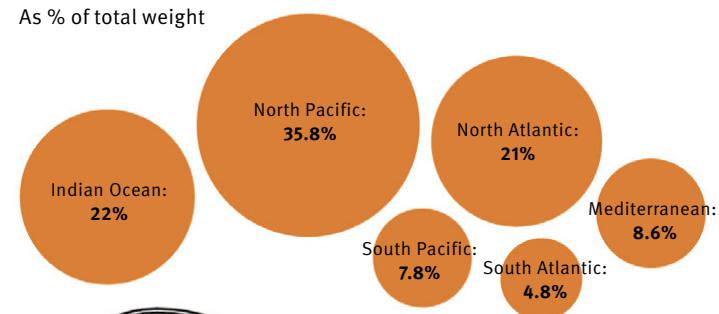


Soup of plastic

Countless tons of waste float on the surfaces of the oceans with devastating consequences for the environment.

Most affected: the North Pacific
As % of total weight



268,940 tons

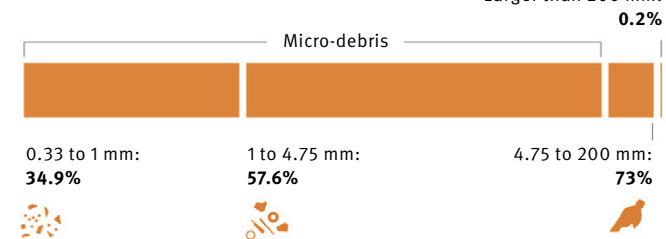
The estimated total weight of the plastic waste

5.25 trillion

The number of pieces of floating plastic waste

Mainly detritus

As % of the total number



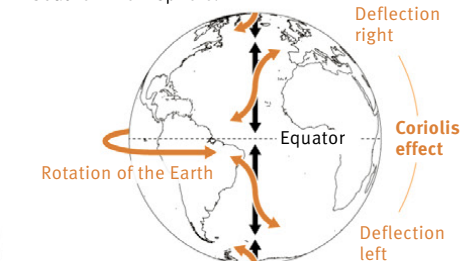
A legal no man's land

"On a global level, there is no adequate legal framework for the fight against plastic pollution" says Thomas Cottier, Professor of European and International Economic Law at the University of Bern. "The high seas belong to nobody. National legislation is often poorly applied and varies from country to country".

To minimise the distortion of the oceans' surfaces, this map uses an interrupted Mollweide projection, centred on the Pacific.

Coriolis force

Currents rotate in a clockwise direction in the Northern Hemisphere and anticlockwise in the Southern Hemisphere.



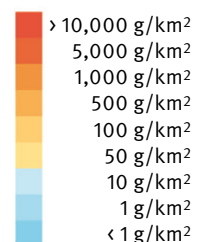
A Swiss expedition to probe the oceans

The Race for Water Foundation, based in Lausanne, is dedicated to preserving water and has launched a scientific expedition to study plastic pollution. A race catamaran left Bordeaux, France, on 15 March 2015 to visit the five oceanic gyres in 310 days. "Samples will be taken from the 12 island beaches most exposed to floating waste, including Easter Island, the Mariana Islands and the Azores", says Florian Faure, a researcher at the Central Environmental Laboratory of EPFL, where the samples will be analysed. The study will be supplemented by three-dimensional cartography of the coastal zones and the waste using a Sensefly drone, made by the Swiss start-up of the same name.



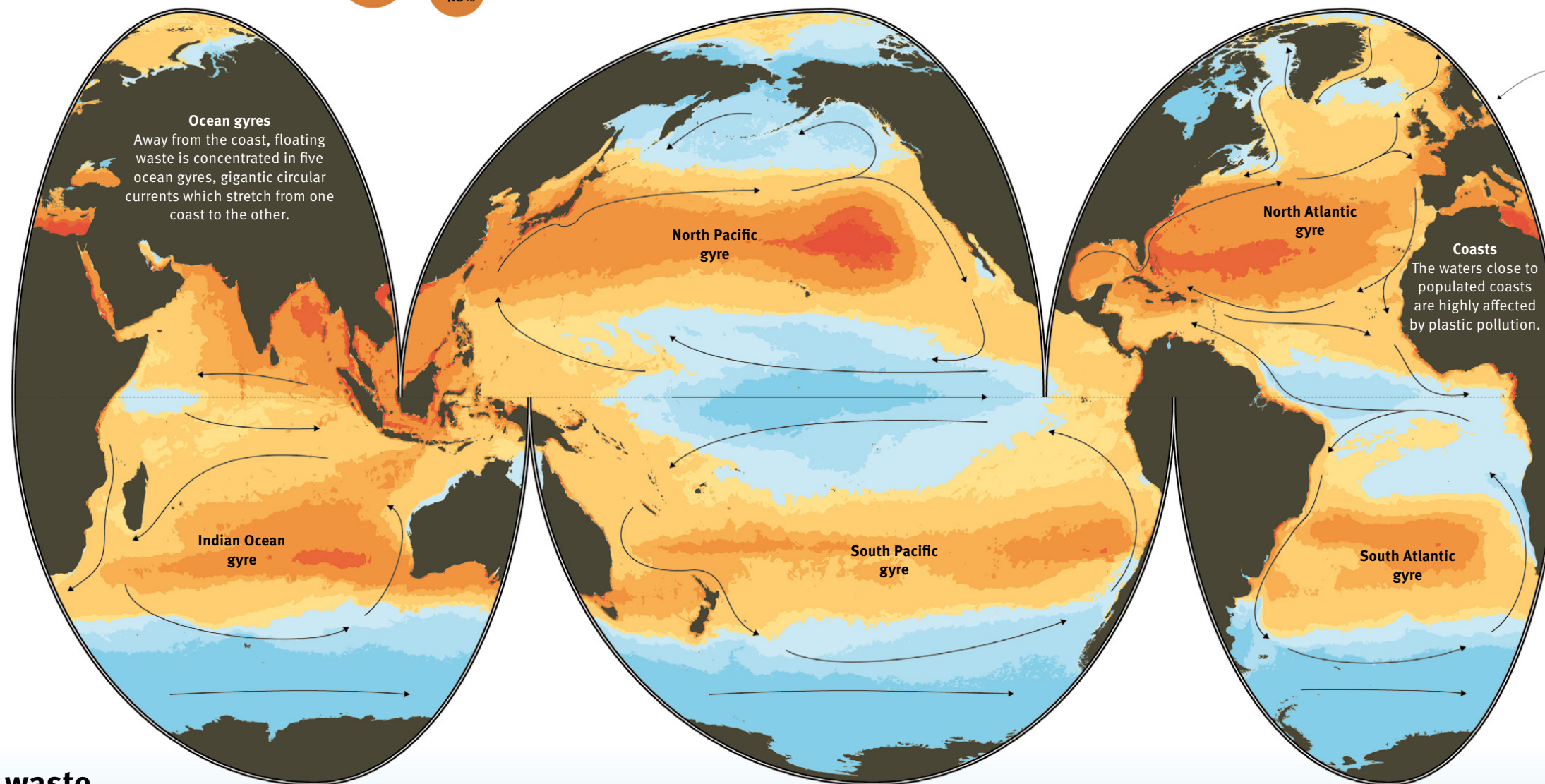
Infographic: Benjamin Bollmann.
Graphics and visuals: Dumpark
1 Source: M. Eriksen et al., Plos One, 2014
2 Source: J.R. Jambeck et al., Science, 2015

Floating plastic



→ Ocean currents

An international team coordinated by the Californian institute 5 Gyres has developed a model to evaluate the density of microplastic floating in the ocean.¹ Based on 24 sampling and visual information campaigns between 2007 and 2013, this very conservative estimate must be considered a minimum.



The life of a piece of waste

1. Leaving land

Plastic is taken from land to sea by wastewater, rivers and the wind or is thrown directly into the ocean from ships.

2. Fragmentation

Over the years, plastic breaks down into pieces under the effects of ultraviolet radiation and the force of the waves. But it doesn't break down completely.

3. Threatening animals

Birds, whales and also tortoises are some of the species that ingest plastic, which sometimes obstructs their stomachs and kills them.

4. Toxic sponges

The microplastic absorbs organic pollutants in the seawater, e.g. pesticides, which further poison wildlife.

5. Concentration

There is no such thing as the 'plastic continent' – it's just a myth. Above all, pollution is comprised of detritus suspended below the surface, sometimes as deep as 30 metres.

6. Where does the plastic go?

It is estimated that the mass of plastic carried from land into the oceans every year is in the region of 8 million tons, in other words 30 times more than the observable quantity of floating waste.²

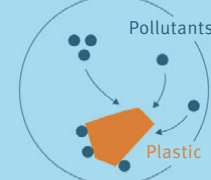
7. Sinking to the bottom

The plastic can become hidden in the sediment of the seafloor. Once it is colonised by microorganisms it becomes denser and eventually sinks.

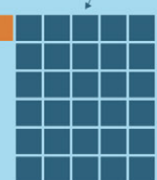
8. Freezing

Another hypothesis is that a large portion of it may be trapped in Arctic ice.

Traces of plastic have been found in farmed mussels and oysters.



Observable quantity vs Quantity added every year



For example: the Danube spills 4.2 tons of plastic into the Black Sea every day, particularly in the form of industrial pellets.