



# Oceans

- > Every year, around 12 million tonnes of plastics end up in the world's oceans.
- > Plastics accumulate on and in ocean beds.
- > Some coastal waters and marine areas are now so heavily polluted with plastics that marine life is endangered.
- > The main reason for the pollution of the seas is the absence or inadequacy of waste management in some world regions. Switzerland contributes only marginally to marine pollution, through input via its rivers.

## How plastic waste and other plastics reach the oceans

According to a study<sup>1</sup>, around 12 million tonnes of plastics end up in the oceans every year. Plastics are carried to the oceans by rivers and waste water and via the air and tides, or they arise at sea (e.g. through the direct disposal of waste from ships or lost fishing gear).

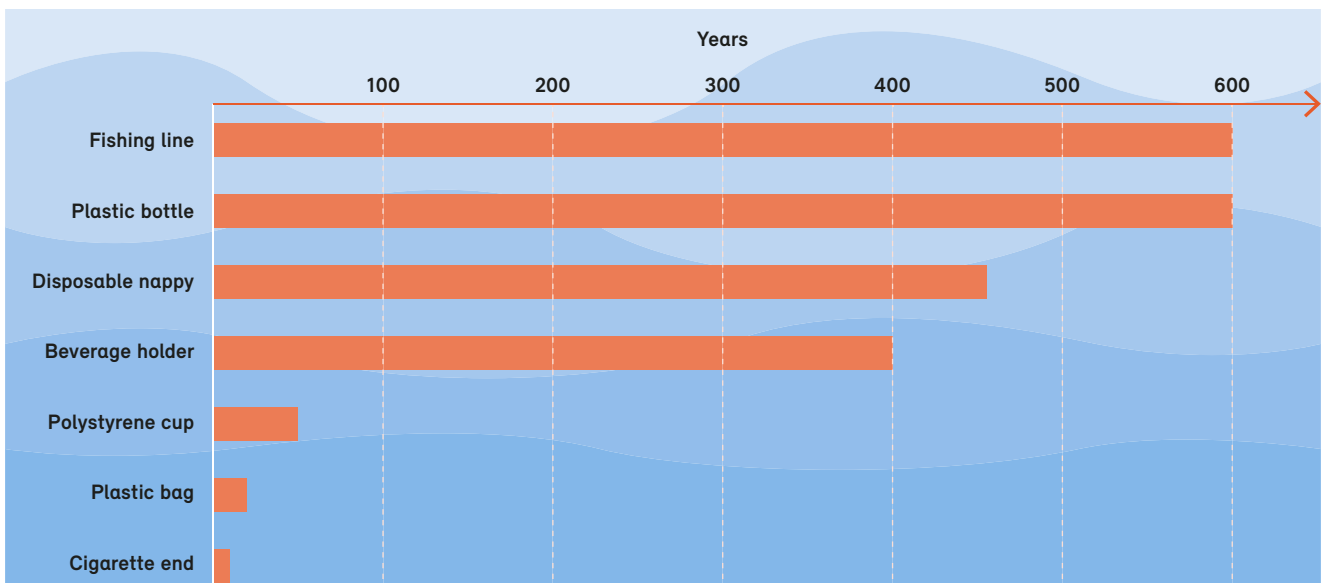
The majority of plastics (particularly fairly large plastic items such as bottles or plastic packaging), 9 million tonnes, comes from coastal areas within 50 kilometres of the sea. The fishing and shipping sectors are responsible for around 1.75 million tonnes of plastic waste at sea. 0.5 million tonnes of plastics are washed into the oceans from inland areas, including Switzerland, via rivers.

Added to this are 0.95 million tonnes of microplastics, mainly tyre abrasion particles, plastic granulates and fibre abrasion from synthetic textiles.

It is estimated that Switzerland is responsible for around 20 tonnes per annum, or 0.0002%, of the total of plastic pollution worldwide via its rivers. Switzerland's contribution to marine pollution is therefore very small.

The reason for the high levels of marine pollution is a poor or absent waste disposal infrastructure, mainly in Asia and Africa. This leads, for example, to waste drifting from open landfill sites or rubbish dumps. Around 95% of the plastics from dry land pass into marine areas via ten rivers in Asia and Africa.

## How long does it take for plastics to degrade in the sea?



Source: German Federal Environmental Agency 2016. Infographic "So lange bleibt der Müll im Meer"

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## Plastics barely degrade in the oceans

There are already around 150 million tonnes of plastics in the oceans. They can be found in all oceans and at all depths – even in the deepest ocean trenches. It is estimated<sup>1</sup> that 94% of these plastics ultimately sink to the ocean floor. The remainder can be found on beaches (5%) or floating on the surface (1%). However, concentrations vary widely. Many beaches are heavily polluted with plastic tidewrack.

Plastics barely degrade in the oceans. They can take up to several hundred years to decompose. They degrade into microplastics under the influence of wind, weather and tides. They are carried, sometimes very long distances, by ocean currents and can form floating carpets of waste.

## Risks to marine life

Plastics may harm marine organisms, e.g. entanglement in lost fishing gear (ghost fishing), injuries to the gastrointestinal tract, false satiated feeling or poisoning. Marine life can be affected particularly in heavily polluted areas (see *“Humans and animals” factsheet*).

### Possible measures

Targeted action must be taken at the right places so as to limit the plastics entering the oceans and the risks to marine life. Particular measures:

- **Establishing functioning waste collection and disposal systems** in the river basins of the ten most important rivers, e.g. in the basins of the Nile, Mekong or Ganges.
- **Restrict exports of plastic waste** to countries which lack the necessary infrastructures for environmentally friendly waste treatment.
- **Ensure that marine vessels do not dispose of their waste at sea.**
- **Clean beaches** on the basis of voluntary campaigns.
- **Promote international cooperation** with initiatives to regulate waste processing on a global basis.

<sup>1</sup> Eunomia 2016: Plastics in the Marine Environment

## Further information

- Study of microplastics in Swiss waters (press release in German, French and Italian)
- Study of microplastics in global waters (press release)