

MARINE PLASTIC POLLUTION

- Over **300 million tons of plastic** are produced every year for use in a wide variety of applications.
- At least **14 million tons of plastic end up in the ocean every year**, and plastic makes up **80% of all marine debris** found from surface waters to deep-sea sediments.
- Marine species **ingest or are entangled by plastic debris**, which causes severe injuries and death.
- Plastic pollution **threatens food safety and quality, human health, coastal tourism, and contributes to climate change**.
- There is an urgent need to explore new and existing **legally binding agreements** to address marine plastic pollution.

What is the issue?

Plastic is a synthetic, organic polymer made from petroleum with properties ideally suited for a wide variety of applications including: packaging, building and construction, household and sports equipment, vehicles, electronics, and agriculture. Over **300 million tons of plastic are produced every year**, half of which is used to create single-use items such as shopping bags, cups and straws. If discarded improperly, plastic waste can harm the environment and biodiversity.

At least 14 million tons of plastic end up in the ocean every year. Plastic debris is currently the most abundant type of litter in the ocean, making up **80% of all marine debris found from surface waters to deep-sea sediments**. Plastic is found on the shorelines of every continent, with more plastic waste found near popular tourist destinations and densely populated areas.

The **main sources of plastic debris found in the ocean are land-based**, coming from urban and stormwater runoff, sewer overflows, littering, inadequate waste disposal and management, industrial activities, tyre abrasion, construction and illegal dumping. Ocean-based plastic pollution originates primarily from the fishing industry, nautical activities and aquaculture.

Under the influence of solar UV radiation, wind, currents and other natural factors, **plastic breaks down into small particles** called microplastics (particles smaller than 5 mm) or nanoplastics (particles smaller than 100 nm). The small size makes them **easy for marine life to ingest** accidentally.

Many countries lack the infrastructure to prevent plastic pollution such as: sanitary landfills;

incineration facilities; recycling capacity and circular economy infrastructure; proper management and disposal of waste systems. This leads to 'plastic leakage' into rivers and the ocean. The legal and illegal **global trade of plastic waste may also damage ecosystems**, where waste management systems are not sufficient to contain plastic waste.

SHORELINE PLASTICS	SEA SURFACE PLASTICS	PLASTICS IN MARINE ORGANISMS
		
SEAFLOOR / SEDIMENT PLASTICS	WATER COLUMN PLASTICS	
		<i>Adapted from The Mediterranean: Mare Plasticum</i>

Plastic pollution is found in all areas of the ocean and in marine organisms © IUCN

Why is this important?

Plastic pollution is a widespread problem affecting the marine environment. **It threatens ocean health, the health of marine species, food safety and quality, human health, coastal tourism, and contributes to climate change.**

Impacts on marine ecosystems

The most visible impacts of plastic debris are the ingestion, suffocation and entanglement of hundreds of marine species. Marine wildlife such as seabirds, whales, fish and turtles mistake plastic waste for prey; most then die of starvation as their stomachs

become filled with plastic. They also suffer from lacerations, infections, reduced ability to swim, and internal injuries. Floating plastics also help transport invasive marine species, thereby threatening marine biodiversity and the food web.

Impacts on food and human health

Microplastics have been found in tap water, beer, salt and are present in all samples collected in the world's oceans, including the Arctic. Several chemicals used in the production of plastic materials are known to be carcinogenic and to interfere with the body's endocrine system, causing developmental, reproductive, neurological, and immune disorders in both humans and wildlife. Recently, microplastics were found in human placentas but more research is needed to determine if this is a widespread problem.

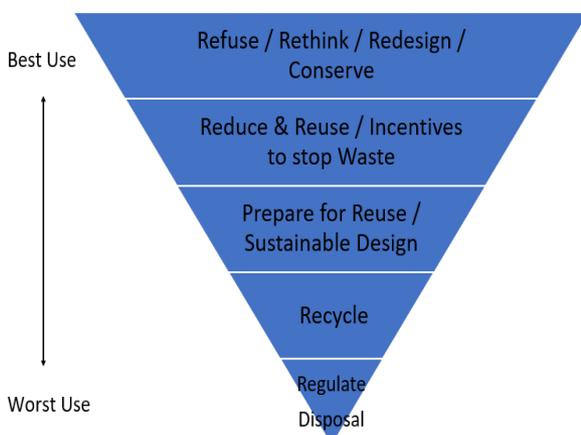
Toxic contaminants also accumulate on the surface of plastic as a result of prolonged exposure to seawater. When marine organisms ingest plastic debris, these contaminants enter their digestive systems, and over time accumulate in the food web. The transfer of contaminants between marine species and humans through consumption of seafood has been identified as a health hazard, and research is ongoing.

Impacts on tourism

Plastic waste damages the aesthetic value of tourist destinations, leading to decreased income from tourism. It also generates major economic costs related to the cleaning and maintenance of the sites. The build-up of plastic litter on beaches can have a negative impact on a country's economy, wildlife, and the physical and psychological wellbeing of people.

Impacts on climate change

Plastic production contributes to climate change. If plastic waste is incinerated, it releases carbon dioxide and methane (from landfills) into the atmosphere, thereby increasing emissions.



Zero waste hierarchy © Zero Waste International Alliance

The **UN 2030 Agenda for Sustainable Development** calls for action to 'Conserve and sustainably use the oceans, seas and marine resources' (Goal 14) and 'By 2025, prevent and significantly reduce marine pollution of all kinds, particularly from land-based activities, including marine debris and nutrient pollution' (Target 14.1).

What can be done?

Efforts should be made to **adhere to and strengthen existing international legislative frameworks** that address marine plastic pollution. The most important are the 1972 Convention on the Prevention of Marine Pollution by Dumping Wastes and Other Matter (the London Convention), the 1996 Protocol to the London Convention (the London Protocol) and the 1978 Protocol to the International Convention for the Prevention of Pollution from Ships (MARPOL).

Regional and national governments should also explore national legislative frameworks on **Extended Producer Responsibility**. These are emerging as innovative, low-cost solutions, as are policies to promote circular economies.

Governments, research institutions and industries need to work collaboratively to **redesign products**, and **rethink their use and disposal** to reduce microplastic waste from pellets, synthetic textiles and tyres. **Consumers and society** must shift to more **sustainable consumption patterns**. This will require solutions which go beyond waste management and consider the whole lifecycle of plastic products; from design to infrastructure, and household use.

More funding for research and innovation should be made available to provide policymakers, manufacturers and consumers with the evidence needed to implement technological, behavioural and policy solutions to address marine plastic pollution.

Methodologies to **identify, measure and address marine plastic pollution** sources and plastic leakage are available, including from IUCN.

Where can I get more information?

IUCN publications on marine plastic pollution:
www.iucn.org/theme/marine-and-polar/our-work/close-plastic-tap-programme/reports

Twitter: [@IUCN_Plastics](https://twitter.com/IUCN_Plastics)