



Marine Plastic Pollution

We are turning our beautiful Ocean into a plastic soup.

About 8 million tonnes of plastic enters the sea every year, and if business continues as usual we face a future with more plastic in the Ocean than fish by 2050. Our plastic addiction and waste mismanagement is condemning countless marine birds and animals to death by entanglement or poisoning, and even leading to chemical contamination of the fish we eat. From the Arctic to the Antarctic, no corner of the Ocean is untouched by this global scourge. The vast swirls of plastic rubbish visible on the sea surface - horrifying as they are - represent just the tip of the iceberg. What lies beneath are the masses of microbeads and broken-down particles of plastic that are easily ingested by sea creatures, and impossible to remove. The urgently needed solution calls for a combination of enhanced awareness, reduced plastic use, and massively improved waste management.

TALKING POINTS

- Plastic wraps our food and houses our technology. It is a remarkable substance that has contributed to advances in health care and for many applications has multiple advantages. But, disposable consumer goods end up - often after a single, fleeting use - in land-fills, littering our landscapes, and polluting our Ocean. 80% of marine plastic pollution originates from land-based sources.
- An estimated 8 million tonnes of this plastic waste enters the Ocean every year. A study of the manufacturing and waste management practices of 192 countries with a coast bordering the Atlantic, Pacific and Indian oceans, or Mediterranean and Black seas found that in 2010 they collectively produced 4.8m to 12.7m tonnes of plastic rubbish which wound up as ocean debris.
- Global plastics consumption is predicted to grow dramatically, to reach close to 400 million tonnes a year by 2025.
- If the rate at which plastic debris enters the Ocean goes unchecked, it is possible that the Ocean could contain 1 tonne of plastic for every 3 tonnes of fish by 2025, and more plastic than fish by 2050.
- Five countries in Asia (China, Indonesia, the Philippines, Thailand and Vietnam) are estimated to account for as much as 60% of the plastic waste entering the Ocean that we are aware of or has been documented.
- The plastic debris floating on the ocean surface accounts for only 5% of all the plastic trash dumped into the sea; the other 95% is submerged beneath the surface.
- This includes the billions of tiny pieces of plastic, called microbeads, that are often added to products such as toothpaste, face wash and abrasive cleaners,

and are small enough to easily pass through water filtration and sewage treatment systems to end up polluting the Ocean.

- Bio-degradable plastics (particularly those made from plants) are promising alternatives to conventional plastics under the right conditions, but these conditions are generally not found in the natural environment, and especially not in the Ocean. They are also energy intensive and expensive to produce, and have the potential to make the problem of littering worse by encouraging people to think that it is okay to throw them away rather than consider them a valuable resource. Furthermore, even in ideal conditions, biodegradability does not resolve critical issues such as entanglement, or ingestion by marine animals.

The Consequences

- Plastic in the Ocean has a vast and detrimental impact on ocean wildlife and habitats and is found in every corner of the Ocean, from the Arctic to the Antarctic.
- Small pieces of plastic are eaten by fish, turtles and seabirds, often resulting in their death. Animals and birds can also become tangled up in plastic debris, leading to serious injuries and fatalities.
- Over time, plastic material does not bio-degrade, but breaks down into tiny particles known as micro plastics, which may be eaten by small marine animals and so enter the food chain.
- Microplastics in the Ocean are commonly defined as less than 5 mm in diameter.
- Plastic debris often contains chemicals added during manufacture that can absorb and concentrate contaminants such as pesticides, heavy metals and persistent organic pollutants (e.g. polychlorinated biphenyls or PCBs).
- This pollution is extremely difficult to remove from the environment or trace back to its source.
- A growing body of scientific research and evidence suggests that these harmful substances can transfer into the tissue of aquatic species - such as fish - that are consumed by humans.

What needs to happen?

- Stemming the tide of plastics entering the Ocean will require a combination of approaches, including limiting plastic use, improving waste collection, infrastructure, and management, and expanding recycling, particularly in the countries where most of the plastic originates.

- There are governments and organizations working to reduce the presence of plastic microbeads and plastics bags around the world. However, even if society were to ban all plastic bags, for example, that would only account for roughly 1% of total plastic film production.
- We must transition away from a linear (make, use, dispose) economy towards a circular economy where resources, such as plastics, are used, recovered and reused over and over again, instead of heading directly to the landfill or the Ocean.
- We all also need to take personal responsibility and significantly limit our use of plastic. For example, we can carry a reusable water bottle, bring our own cloth bag or other reusable bag when shopping, buy second-hand products, dramatically cut down our consumption of single-use plastic such as food contained in plastic packaging or plastic straws in our take-away drinks, and make sure we recycle whenever possible.
- The most effective way to have less plastic in the Ocean is to use less plastic in the first place.