

Marine Debris

“Only we humans make waste that nature can’t digest” – Charles Moore, Marine Researcher

Is it a plastic bag or a jellyfish? Is it a fish or a fizzy drink bottle? Is it a shell or a bottle top?

Was that thing bumping into my leg while swimming in the waves a shark or a chunk of foam box?

Why is the sea full of rubbish?

It’s no joke to suggest that our seas are full of waste. In the Pacific Ocean alone, the Great Pacific Garbage Patch is estimated to be more than 1 million square kilometers, with the periphery spanning a further 3.5 million square kilometers. Furthermore, recent studies suggest that if rubbish continues to enter the ocean at the rate it has been, then by the year 2050 there will be more pieces of plastic in the ocean than there are fish.

So what is marine debris?

Marine debris (or marine litter) is described as any persistent, manufactured or processed solid material that has been discarded, disposed of or abandoned in the marine and coastal environment. Marine debris is basically just bits of rubbish:



Common items of marine waste:

Plastic bottles - Plastic bags - Fishing nets - Fishing gear - Food packaging
Gloves - Cigarette butts - Buckets - Packing material - Rope - Light bulbs

When we put rubbish in the bin it goes away (into a bigger bin, into a rubbish truck and then into a landfill site). But there’s no ‘away’ in our oceans. Especially when that rubbish is made of plastic or has plastic components. Unfortunately, materials made of plastic account for 50% to 90% of marine debris worldwide.

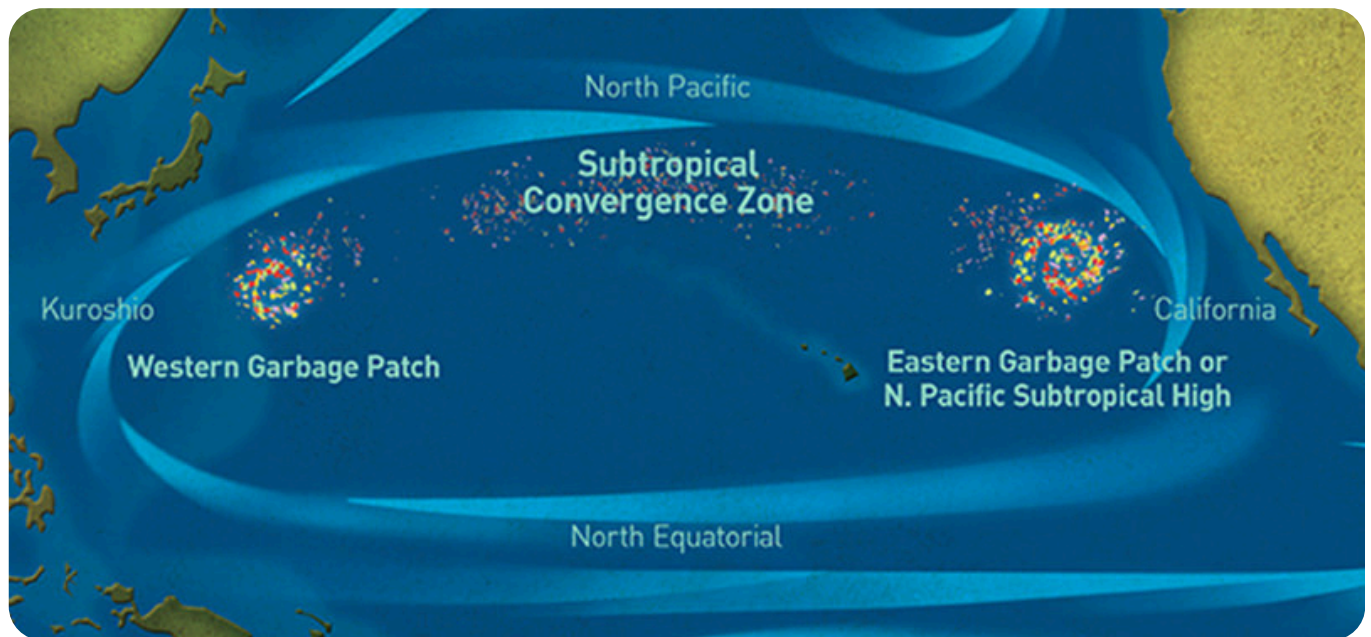
Today there is almost no place on Earth that is immune to the problem of waste and litter. In marine environments, waste and litter has been found in the widest oceans and in the deepest seas. In fact, oceanographers and ecologists recently discovered that up to 70% of marine debris found in the ocean will actually sink to the seafloor; the deepest parts of our ocean could conceivably be piled high with rubbish.



The Great Pacific Garbge Patch

The Great Pacific Garbage Patch is a collection of marine debris in the North Pacific Ocean. All this waste is accumulating because most of it is not biodegradable. Many plastics won't break down but instead just break up into smaller and smaller pieces (microplastics). When you think about it in this way you begin to understand that the Great Pacific Garbage Patch isn't really a floating garbage patch but instead is more like a plastic soup, whose ingredients include microplastics that often can't be seen with the naked eye but instead make the water look murky, interspersed with larger pieces of plastic like plastic bags, fishing line and shoes.

The image below from NOAA (National Ocean Atmospheric Administration) shows the scale of the Great Pacific Garbage Patch.



Great Pacific Garbage Patch. Image source: <https://marinedebris.noaa.gov/info/patch.html>

Where does marine debris come from?

Over 8 million tonnes of rubbish makes its way into the world's oceans each year, and scientists have concluded that 60-80% of marine debris is initially discarded on land. Wind blows plastic rubbish out of littered streets and landfills, and from trucks and trains on their way to landfills. It gets into rivers, streams and storm drains and then gets carried by tides and currents out to sea. Litter dropped by people at the beach is also a major source.

The remaining marine debris found in the ocean comes from boats, offshore oil rigs and large cargo ships that dump or lose debris directly into the water. The majority of this debris is fishing nets.

Why is plastic so bad?

Plastic never truly breaks down. Other waste materials – like paper or glass – break down eventually. However, plastic just breaks into smaller and smaller pieces. This image from Fauna and Flora International shows some microplastics found on a beach. Some pieces of plastic enter the marine system as tiny pieces. Found in things like cosmetics and toothpaste, or washed out of items of clothing such as fleece, microplastics are tiny pieces of plastic that are almost too small to see.



What's the problem with marine debris?

Apart from being visually unpleasant, marine debris causes significant problems for marine ecosystems and the organisms that live there. The impacts of marine waste on marine environments include:

- Danger to animal life from ingestion
- Animals feed on plastics that fill them up but don't provide any nutrition, resulting in starvation
- Animals feed on toxic waste, so toxic materials enter the food chain, causing illness and death
- Danger to animal life from entanglement (animals get trapped in marine waste)
- Pollution of natural marine habitats
- Water pollution



What can you do?

Cut back on waste. Think about what you're buying and ask yourself "Do I really need this?" and "Is there a waste-free alternative to this thing I want or need?" This means considering what the product is both made from and packaged in. Cut back on plastics where you can – especially single-use plastic products and those that can't be recycled. With any waste that you do create, make sure it gets into the correct bin (e.g. recycling or landfill) and stays there.

Keep waste out of the sea. This means keeping waste off the land and out of waterways, as waste will blow from the land into waterways and then into the sea. If you see some waste at the beach or the park or when just walking down the street, pick it up and put it in the bin.



Become an Ocean Guardian and join the global movement now!

Go to the Blue website to become an ocean guardian and take action for our ocean (<https://bluethefilm.org/take-action/>)

Reference list

- 'Great Pacific garbage patch' far bigger than imagined, aerial survey shows - <https://www.theguardian.com/environment/2016/oct/04/great-pacific-garbage-patch-ocean-plastic-trash>
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- Marine Debris - <http://www.gbrmpa.gov.au/managing-the-reef/threats-to-the-reef/marine-debris>
- Great Pacific Garbage Patch - <https://www.nationalgeographic.org/encyclopedia/great-pacific-garbage-patch/>
- Take3 website - <http://www.take3.org>
- 5Gyres website - <http://www.5gyres.org>
- Marine debris continues to be a significant threat facing marine animals, reefs, and ocean ecosystems... but YOU can help. - <https://www.reefcheckaustralia.org/threats>
- Clean Up Australia – Marine Debris - <https://www.cleanup.org.au/portfolio>
- Marine debris - <https://www.marineconservation.org.au/pages/marine-debris.html>
- Explore the issues - <https://bluethefilm.org/explore/>

