

Plastic Motion of the Ocean

All the time we are using plastic, but what we do not realize is that we are drowning our marine ecosystem in trash and litter. We need to make a change to help maintain the ocean and its surroundings.

15 million tons, that is how much plastic we use in a year. 12 million tons is discarded into the ocean. That means 77% of new Zealand's waste. Single use plastic is one of the fundamental issues of pollution. For example, chip bags, straws, and plastic bottles. In New Zealand, since the 1st of July, plastic bags have been banned, to make a difference of the amount of plastic we put into the environment. It does not matter how far away from the sea you are, your plastic that you throw away will *always* end up in the ocean. Over time, plastic decomposes into microplastics. Microplastics are small particles of plastic. The rubbish is often carried by the wind, which carries the light plastic into rivers, creeks, and drains, that all lead to the ocean. Fast food companies



White stork caught in plastic- © naturepl.com / John Cancalosi / WWF

have a large contribution to plastic waste in the ocean, by selling straws, and plastic toys. Plastic packaging also has an effect in the ocean because everything you get from a shop or delivered, often comes wrapped in plastic. In the north pacific there is a large collection of rubbish. The pacific garbage patch, also known as the pacific trash vortex, is spread over waters from the west coast of North America to Japan. But there is more than one garbage patch. The second being where the warm water collides with colder water from the arctic that zone moves debris from patch to patch. The rubbish moves clockwise with the swirl of the current hence why they call currents of rubbish, the trash vortex. The trash whirlpool covers 20 million square kilometers. The amount of waste within the patches accumulates because much of it is not biodegradable. It just breaks down into micro plastics. Oceanographers and ecologists recently discovered that about 70% of marine debris sinks to the bottom of the ocean floor. This abominable collection of waste continues to harm our ocean wildlife, polluting and destroying our water ways.

The impact litter has on the fauna of our ocean is immense. Single-use plastics do not biodegrade, instead they end up polluting our ocean, strangling, and entangling marine life and getting ingested by fish and birds. There are trillions of microplastics floating around in the

ocean. Fish and other sea life see the microplastics and think they are small pieces of food or smaller fish and end up swallowing them, causing the plastic to fill up and damage their stomachs, leading to the animals to struggle to digest food, eventually inducing death. Even smaller sea life gets effected by plastic, such as oysters and shrimp. Study's at BBC show in an oyster, an estimated 0.42 of small plastic pieces were found in each gram of oyster meat. Not only small plastics, but bigger plastics are also major hazards to the larger animals, such



An old plastic fishing net entangling a turtle- Photograph by Jordi Chias

as turtles. Plastic bags and plastic fishing nets get caught around the animal's necks and bodies, causing them to be vulnerable in risky positions. Plastic bags also get mistaken for jellyfish and other sea animals because of their shape and size. According to World Wildlife Fund, research states that 52% of all turtles have digested and eaten plastic waste during their lifespan. Not only does plastic effect sea life majorly, but in ways it also affects us, humans. We are the ones who produce plastic and deposit it into the ocean, so it just makes sense that the plastic makes its way back to us. Small fish digest the plastic, bigger fish then eat the smaller fish, eating the plastic with it. Not long after, a fisherman will fish up the fish with the plastic inside it. We need to be more aware that plastic will make its way back to us and how it affects our marine life

We need to reduce the amount of plastic that we use because how much harm it is causing to the Marine life. There are many ways we can better our environment we can switch plastic out from ecofriendly materials like paper, cardboard, wood, metals, wool. 25 billion Styrofoam cups get thrown away, so bringing your own cup to cafes would benefit the ecosystem. Your toothbrush that you used when you were 5 still exists. According to M Y S A 1 billion toothbrushes are discarded. By using wooden toothbrushes, we would reduce the amount of plastic. Straws are sold everywhere around the world, and 500 million are used just in the US alone every day. If we were to convert to metal, it would decrease plastic waste that is dumped. Every country should have a fine for littering, as Singapore for example has a no litter tolerance. BBC stated that Singapore authorities have issued tens of thousand dollars of fines per year for littering. Having a cost for throwing your rubbish on the environment would result in less rubbish and plastic

because some people can't afford it and would think of the consequences. There are plenty ways to reduce plastic use, we just need to stick by it and do it.

Through this article, we are proving that our sea life is dying due to the amount of plastic we use and discard. No matter what we do, there will always be plastic in our ocean, but we can still reduce the problem by doing simple things every day. We have incorporated YRE goal 14 into our article by showing how we learnt and investigated about marine pollution.

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Links-

<https://www.wwf.org.uk/updates/how-does-plastic-end-ocean>

<https://www.greenpeace.org/new-zealand/story/how-does-plastic-end-up-in-the-ocean/#:~:text=We%20know%20our%20oceans%20and%20coastlines%20are%20choking%20on%20plastic.&text=Scientists%20have%20shown%20that%20up,common%20part%20of%20the%20problem.>

<https://www.nrdc.org/stories/ocean-pollution-dirty-facts>

https://www.wwf.org.nz/take_action/stopplasticpollution/

<https://www.nationalgeographic.com/magazine/2018/06/plastic-planet-animals-wildlife-impact-waste-pollution/>

<https://www.bbc.com/news/science-environment-42270729#:~:text=Farming%20in%20this%20context%20means,0.42%20plastic%20particles%20per%20gram.>

