

SPIRALING Out of Control

Plastic Buildup in our OCEANS

Plastics Above Sea Level



Creating the plastic we use requires approximately 8% of our oil reserves



That equates to the amount of oil used by all of Africa



It takes about 1/4 liter of oil to produce a 1 liter water bottle

We have produced more plastic in the last 10 years than we did in the whole of last century



1950:
50 million tons of plastic



2008:
245 million tons of plastic



Almost 1/3 of the plastic we use is used just once and then thrown away

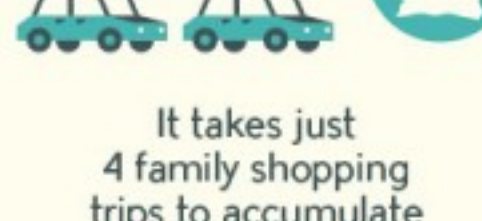


Shoppers worldwide use approximately **500,000,000,000** single-use plastic bags annually

That's about 1 million bags every minute across the globe or 150 bags every year for every person on earth



If you joined them end to end, the bags would circumnavigate the globe 4,200 times



It takes just 4 family shopping trips to accumulate 60 shopping bags



A plastic bag has an average working life of 15 minutes



Only 1 in 5 plastic water bottles are recycled



Americans throw away 35 billion plastic water bottles every year

Plastics Under Sea Level

Plastic has been found in all of the major oceans, not just areas of human habitation

Every year, **6.4 million** tons of plastic are dumped into the ocean



This is the same as **1,988 miles** of trucks loaded with plastic

There are an estimated **5.25 trillion** pieces of plastic debris in the ocean

Of that, **269,000** tons float on the surface



And around **4,000,000,000** plastic microfibers per square kilometer cover the deep sea

100,000 marine creatures die every year from plastic entanglement



Entanglement rates of up to 7.9% have been discovered in some species of seal and sea lions



31 species of marine mammals are known to have ingested plastic



Roughly **1,000,000** sea birds also die from plastic consumption or entanglement



At least 2/3 of the world's fish stocks are suffering from plastic ingestion

A plastic bag can kill fish and animals because it does not biodegrade



When the animal dies, the plastic bag is released into the environment again



Another animal could fall victim to the same fate



Plastic breaks down into smaller and smaller pieces (though never fully degrades)



Those smaller pieces enter the food chain and release chemicals into the fish that eat them

THE GREAT PACIFIC GARBAGE PATCH (GPGP)

is a collection of marine debris in the North Pacific Ocean. Also known as the Pacific trash vortex



Spans waters from the west coast of North America to Japan



The warm water from the South Pacific meets up with cooler water from the Arctic



This moves debris back and forth between the Western Garbage Patch (located near Japan) to the Eastern Garbage Patch (located between Hawaii and California)



Patches are made up almost entirely of tiny bits of plastic called microplastics, which can't always be seen by the naked eye

80% of the debris in the GPGP comes from land-based activities in North America and Asia

Trash from the North American coast takes about 6 years to reach the GPGP



Trash from Japan and other Asian countries takes 1 year



The remaining 20% of debris comes from:

Boaters



Large cargo ships that dump or lose debris directly into the water



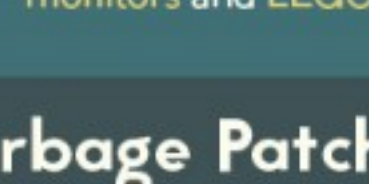
Offshore oil rigs



Most of this debris is fishing nets: about 705,000 tons



Dropped shipping containers have released computer monitors and LEGOs



The Great Pacific Garbage Patch



Since the GPGP is so far from any country's coastline, no nation will take responsibility to fund a clean-up effort



It would take an estimated 67 ships and one year to clean up less than 1% of the North Pacific Ocean



5

There are 5 ocean gyres in the world where plastic gathers due to current circulation

- These gyres contain millions of pieces of plastic
- Wildlife feeds in these areas

The 5 Gyres



Rotating ocean currents, called gyres, carry debris into five concentrated areas



46% of plastics float. Plastic can drift for years before eventually concentrating in ocean gyres

200

Scientists have identified 200 areas declared as dead zones where no life organisms can grow

What Are We Doing About It?

Marine litter—plastic waste in particular—is a global problem

The vast majority of plastic waste ends up in landfill sites

A significant proportion of plastic gets into our waterways and eventually ends up in oceans



Plastic waste on coastlines is more prevalent around more populated coastal areas, but once plastic enters the ocean, global currents distribute it around the world

Concerns of energy consumption within the plastic industry have prompted growth in bioplastics

Bioplastics are derived from renewable bioproducts, including:

Agricultural
crops and crop residues, dried distillers grains

Food processing
byproducts, residues, other materials

- They account for 10-15% of the global market
- Bioplastics are not a perfect solution—many products can take decades to degrade and they can release methane gasses



Ireland introduced a \$0.15 plastic bag tax and reduced their usage by 90% in just one year. Now they tax \$0.22 per bag



It costs the Australian government more than \$4 million to clean up plastic bag litter each year



The floods in Bangladesh in 1988 and 1996 were worsened by plastic bags clogging drains. Since then, the government has banned plastic bags

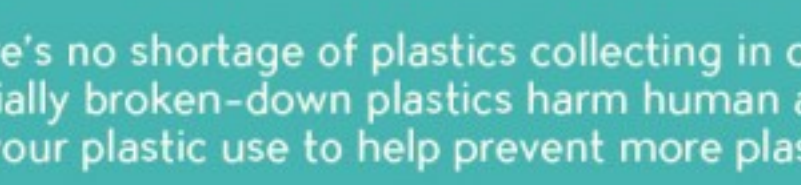


In 2010, the Cinque Terre region of Italy banned plastic bottles. An estimated 2 million bottles were left behind by tourists annually



There's no shortage of plastics collecting in our oceans. Buildup of plastics and partially broken-down plastics harm human and aquatic life. Think twice about your plastic use to help prevent more plastic pollution in our waterways.

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