Great Pacific Garbage Patch

Marissa Zamora

Have you ever heard of the Great Pacific Garbage Patch (GPGP)? The GPGP is a large accumulation zone of plastic waste that spans an area twice the size of Texas. It's located in the Pacific Ocean between Hawaii and California, and is estimated to weigh about 80,000 tons!

Much like an iceberg, there is more to the GPGP underneath the surface of the water. Plastic will float to the ocean's surface if its density is less than water's density, but more dense plastic and debris will sink to the ocean floor, creating a mosaic of plastic waste that covers coral reefs and other marine habitats and threatens the survival of marine wildlife.

Marine wildlife is directly and fatally impacted by plastic pollution. Thousands of seabirds, sea turtles, seals and other marine mammals are killed each year after ingesting plastic or becoming entangled in it. Plastic bags, balloons, and fishing lines are the most common plastics ingested by marine life. Fishing nets, plastic packing straps, bags, and balloons with strings are the most common plastics that entangle marine life.

The GPGP is overflowing with these plastics and so are the beaches that Gulf Coast Bird Observatory surveys here in Texas. Just a few weeks ago, we collected 229 balloons in a single day at Matagorda Beach, and the next week we collected 215 more in one day!

Humans are also affected by plastic pollution. As plastic is exposed to sunlight, waves, and marine life, it breaks down into microplastics. Microplastics are small plastic pieces less than 5mm in length. Although microplastics make up 8% of the GPGP's total mass, they account for 94% of the estimated 1.8 trillion pieces floating in the area.

Microplastics are extremely difficult to remove and are often mistaken for food by marine animals. Through the process of bioaccumulation, a marine animal will consume microplastics (and any toxins attached to them) and then that animal's predator will then consume it. As the microplastics make their way up the food web, they are eventually passed to humans when we eat seafood. Although little is known about the effects of microplastics on human health, studies have suggested potential health risks associated with neurotoxicity and cancer.

Unfortunately, all of this waste isn't going anywhere anytime soon, as plastics can take hundreds of years to decompose, and even then, some particles remain. All hope isn't lost just yet, though, as many organizations are working to address this problem. For example, the Ocean Cleanup, a nonprofit organization founded in the Netherlands, reported in October that they had removed 19,841 pounds of plastic from the GPGP and a total of 63,182 pounds during all of their test runs combined!

There are plenty of things that you can do to help solve this problem. One of the best things you can do is reduce your usage of single-use plastic. Instead of using single-use plastic bags and

bottles, try replacing them with reusable ones. In addition, please don’t release balloons or litter fishing line! We share this planet with so many other living organisms and it is up to us to be good stewards. There is no planet B!

Photo by Naja Bertolt Jensen

Caption: Less dense plastics float, allowing currents and waves to carry them far distances. Heavier pieces can sink deeper, and even lodge themselves on the ocean floor or in coral reefs.