

Microplastics in oceans increase as U.N. signs ocean treaty

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The worldwide production of plastic has increased rapidly over the past two decades, and there are now an estimated 82 to 358 trillion plastic particles floating in the top 12 inches of the world's oceans, or an estimated average of 21,000 pieces of ocean plastic for each one of the 8 billion people on earth.

Researchers found that the amount of plastic in the world's oceans began to skyrocket around 2005, reflecting the exponential increase in plastic production, with the amount doubling about every 6 years. The increase in ocean plastic reflects the increase of plastic found on the world's beaches. The worldwide production of plastic is now 1 trillion pounds a year, with production predicted to more than triple by 2050.

Less than 10% of the plastic ever produced has been recycled, with the remaining 90% ending up in landfills, incinerated or washed directly into rivers and ocean. These plastics eventually break down into smaller and smaller particles, called microplastics.

These tiny plastic particles are eaten by microscopic marine animals called zooplankton, and fish larvae consume these plastic particles when they eat the zooplankton. Microplastics have been found in shellfish, such as clams, crabs and mussels.

Some seabirds are suffering from the effects of consuming plastic particles, with birds and their chicks starving to death due to the amount of plastic in their stomachs, which they mistake for food while foraging. Plastics are not just in the oceans, but are polluting every biome on earth. Plastic particles have been found near the summit of Mt. Everest, in mountain streams far from civilization, in the soil, and in the deepest ocean trenches.

Microscopic particles of plastic, known as nanoplastics, are small enough to penetrate human cells, and have been found in human lung tissue, the bloodstream, the GI tract, placentas and in infant's first feces.

Negotiators at the United Nations are working on a legally binding global plastics treaty by 2024, which would regulate all aspects of the lifecycle of plastics, including the types of chemicals used in plastics, and whether they can be easily recycled. In the meantime, people can help by reducing their use of "single-use" plastics; by limiting or refusing to purchase any products packaged in plastic that is thrown away after just one use.

The only types of plastics that have any market for recycling are labeled #1 and #2. Most other types of plastic are either incinerated, dumped in a landfill or ultimately end up in the ocean.

New Ocean Treaty Signed by Almost 200 Countries at U.N. Headquarters in New York

In what has been called "the biggest conservation agreement in the history of the world", in early March, almost 200 countries signed a legally binding agreement at the United Nations to protect the world's oceans. The "High Seas Treaty" aims to protect 30% of the world's oceans by 2030.

The agreement protects biodiversity in international ocean waters, which cover around 40% of the earth's surface. The high seas have suffered years of overexploitation from rampant overfishing, mining, and chemical and plastic pollution. The treaty will create a framework to manage conservation of ocean life and establish marine protected areas.

These protections will also help to protect coastal biodiversity and economies. Nations typically control the ocean waters and sea floor within 200 nautical miles of their shorelines, but the remaining international waters, or "high seas", consist of almost two-thirds of the world's oceans, and are not under the jurisdiction of any government. Just over 1% of these waters are currently protected.

The world's oceans are home to 94% of the planet's wildlife, absorb about 25% of human-generated carbon emissions, produce 50% of the oxygen in the atmosphere, and absorb about 90% of the atmosphere's excess heat.