Oceans of Plastic
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Student contributors include: Science: Cameron Snell Design: Tanya Poulter

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Oceans of Plastic

Science: Cameron Snell
Designer: Tanya Poulter
The College at Brockport, State University of New York

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Abstract

The effects of plastic pollution on the oceans as well as its effects on wildlife.
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Science: Cameron Snell
Design: Tanya Poulter

There are more than 5 trillion plastic pieces weighing over 250,000 tons scattered around the oceans right now. Plastics are in every ocean and seas due to their durability and ability to float. Because of these combined abilities plastic can start at one end of the earth and make its way around the planet on ocean currents and tides, only to converge in bays and garbage patches around the world (Figure 1). These have damaging effects on global wildlife and human health around the world.

Figure 1. The locations of the five major global garbage patches.

The impact of plastic pollution through ingestion and entanglement of marine fauna are well documented. It is well known that once one plastic such as straws and plastic bags can be harmful to marine life; however even larger debris such as broken docks and netting can cause health issues by being a transportation of invasive species that can hitch a ride to a new part of the world. Not only is it easy to differentiate between the plastics and natural items, but animals have a harder time with this. Numerous studies have shown that ingested plastic and tar arctic primary culprits of stress and non-natural death for sea turtles. Debris including fishing line, ropes, nets, six pack rings, styrofoam, and plastic bags have been extracted from turtle digestive tracts. This is because plastic in the water strongly resembles the jellyfish, a common prey of turtles (Figure 2).

If we want to continue enjoying the benefits that plastic can bring without compromising the environment and incurring substantial economic losses, we need to align the entire plastics system around a commitment:

- Eliminate the plastic we do not need: the throwaway straws, cutlery, and cups, the unnecessary packaging, and the items that can be replaced with better alternatives
- Innovate so all the plastics we do need is designed to be safely remolded, recycled or composted
- Create less everything we use, making sure the plastic we produce stays in the economy and never becomes waste or pollution.

These steps could change the fate of our oceans, and our lives.