

Marine Environmental Problem: Marine Debris

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What is Marine Debris?

Marine Debris is solid material that doesn't necessarily belong in the ocean itself. Marine debris is defined as any persistent solid material (plastic bags, bottles and cans, cigarette filters, bottle caps, and lids) that is manufactured or processed and directly or indirectly, intentionally or unintentionally, disposed of or abandoned into the marine environment or the Great Lakes, anything man made left behind is marine debris(NOAA). It is a global issue, but it is preventable.



Where Does It Collect?

Items begin to cluster in the ocean, and eventually land on beaches. While the debris is clustering, Many types of animals, like seals, sea turtles, birds, fish, and crabs, can be wounded, strangled, or unable to swim if they consume or become entangled in marine debris(US EPA). These marine animals are suffocated and even starve if consumed. Birds have been known for eating small plastics that look like fish eggs, and sea turtles are also known for consuming whole plastic bags because they look like jellyfish. Majority of the debris is littered into the ocean while some enters through landmarks. One major danger is that this debris doesn't stay still or sink to the bottom of the ocean, most of the material floats and flows with the water currents.



How Much Is Out There And What Types Are The Greatest Threats.

There is currently an average of 6.5 million tons of plastic in the ocean, which is 60%-80% of the debris at sea. There are hundreds of sunken ships, foam cups and such material, and rubber such as tires and boots. There is also a distinct amount of disposable syringes, diapers, condoms, and even tampons. There are metals that include oil drums, bottle caps, and aerosol containers. There is ceramics, wood, cardboard, fishing lines, and gear. The list goes on and on.

How Does It Affect Marine Species And Human Health

Human health and safety is threatened by contact with pathogen-contaminated debris from medical waste and sewage, by injuries from pieces of glass or metal lying on beaches or the ocean floor, by entanglement in lines or netting during scuba diving, and indirectly by damaging and otherwise disabling vessels – e.g., by punctures, propeller and rudder entanglement, blocked intakes – and thus stranding the occupants(SEAWEB).

marine debris is negatively involved with a wide spectrum of marine species the primary concern is on impacts – typically entanglement or ingestion – to those threatened with extinction. Lost and discarded fishing gear, for example, presents a continuous entanglement threat to such endangered species as the North Atlantic right whale and the Hawaiian monk seal, and to most of the world's sea turtle species. Sea turtles can also die after ingesting even very small amounts of debris, either starving by digestive tract blockage or through the effects of gut ulceration or perforation from sharp objects. At least 111 seabird species – almost one-third of the world's total – are now known to ingest marine debris; effects can include reduced body weight, clogged gizzards, increased risk of disease, and death(SEAWEB).

Marine debris is a threat to mankind, it kills marine life and damages or alters habitats, reduces navigation safety, and can have substantial economic impacts on local communities.



What Can People And Industries Do To Alleviate The Problem

To decrease the problem, we have to clean up as much as we possibly can and Industries need to create new measures to decrease the amount of waste they expel into the ocean.



We as individuals can help by buying reusable products, keeping cigarette butts off the streets and beaches, have proper disposal of fishing lines, nets, and hooks, keep storm drains as clean as possible (CCC) and take part in community cleanup near you.

Industries need to recycle more; because of recycling, plastic waste decreases in weight by almost a fifth of the initial weight. With recycling, we can reduce the amount of plastics in water and possibly delay for more to get in through streams(US EPA).

What Can Be Better Regulated To Alleviate The Problem

There are acts and laws in place currently with helping the effort to decrease marine debris such as The Marine Plastic Pollution Research and Control Act (MPPRCA) which states that the NOAA is to study the adverse effects of improper disposal of plastics and how it affects the environment. The Marine Debris Research, Prevention, and Reduction Act (MDRPRA) which was passed to establish programs within the NOAA and the United States Coast Guard (USCG) to help identify, determine, assess, reduce, and prevent marine debris and its impacts on the marine environment and navigation safety.

These laws are doing a great job at trying to prevent and dispose of marine debris, but it is not enough. We need more; although we are recycling more and increasing awareness, there is still 6.5 million tons of plastics and it is slowly increasing. A new Act should be made. An Act that involves incentive. Possibly pay for removal of marine debris or even cut taxes for those who put a faithful effort towards cleaning the oceans and our beaches. We could possibly make new machines that could process marine debris while out in the ocean, or even make a device that could just lift up debris from the ocean.

Where Has ORP Conducted Marine Debris Research

ORP has recently been to the North Atlantic Sargasso Sea Gyre. There, ORP was conducting research on micro plastics in the ocean with the use of a Manta Net. A Manta Net is designed to determine the amount of micro plastics in the water. They found that lots of plastic had made its way into the water due to poor management and awareness. They travelled 2500 miles similar to Washington D.C. to Kansas (East to West) and Detroit to Jacksonville (North to South) for their plastic survey in the Mid-Atlantic.



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