

The Impact of Man-made Debris in our Aquatic Environments

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Aquatic ecosystems are under considerable pressure from human activities. In fact, marine debris has become one of the most pervasive problems plaguing the world's oceans and waterways. The National Oceanic and Atmospheric Administration (NOAA) defines marine debris as any persistent solid material that is manufactured or processed and directly or indirectly, intentionally or unintentionally, disposed of or abandoned into the marine environment.

Over the last 50 years, the manufacture of highly durable, buoyant synthetic items has increased exponentially, and these cast offs have entered our waterways. These are everyday items such as cigarette filters, food containers, plastic bottles and cans, grocery bags, etc. In fact, there is an area in the Pacific Ocean, known as the "Great Pacific Garbage Patch" that is made up of accumulated debris. This patch is characterized by high concentrations of suspended plastics and other debris that have been trapped by the currents of the North Pacific Ocean. The patch covers an area roughly twice the size of the state of Texas, and extends 100 feet below the surface in some places.

And all of this debris can be traced to one source. People.

"...at a critical decision point, someone, somewhere, mishandled it, either thoughtlessly or deliberately." – The Ocean Conservancy

While marine debris is typically classified as coming from either land or ocean/waterway-based sources, the mishandling of items on land causes the bulk of the problems. Debris enters creeks and rivers through storm drains and sewers, and makes its way to the ocean, often ending up many hundreds of miles away from its origin. The source of this land-based debris includes improper disposal of trash, debris from lawns and pavement that is washed into storm drains, and sewage overflows.

Other than the obvious aesthetic issues presented by marine debris, it also poses a significant threat to ocean ecosystems, wildlife, and human health and safety. Abandoned nets, plastic tarps, fishing gear, and other debris can crush sensitive coral reefs and sea grass beds. Debris such as plastic bags, rope, and netting can entangle, injure, or drown wildlife. This same type of debris can also be mistaken for food and ingested by wildlife. According to NOAA, marine debris threatens over 265 different species of marine and coastal wildlife through entanglement, smothering, or interference with digestive systems. Trash that enters our waterways can also lead to human health risks. Debris can end up as

hazards on our beaches in the form of pieces of glass or metal, or needles and other biohazardous waste that are potential vectors for disease.

So what is the answer to the issue of all the debris clogging our nation's waterways? While the removal of existing debris is an important first step, it's only a temporary fix. The only way to have a lasting impact on reducing marine debris is through prevention, or changing behaviors that result in debris entering our waterways. This can be done through two approaches, the proper disposal and reduction of wastes.

Making sure we dispose of our waste appropriately can make a huge difference. The vast majority of aquatic litter comes from items we can easily carry until we find a trash or recycling station. Items such as food wrappers, bottles, cans, plastic bags, and cigarette butts make up more than 80% of the litter that finds its way into our waters.

Another way you can help reduce marine debris is to reduce the amount of waste that you produce. Consider using reusable items rather than disposable ones. For example, use a lunchbox and pack your lunch in reusable containers instead of using disposable paper and plastic bags. Make sure to recycle, and purchase items that are produced from recycled materials. Instead of purchasing individual bottles of water, buy a reusable water container. Purchase reusable cloth bags instead of getting new plastic bags every time you go to the store. You can also set a good example for others by getting involved in cleanups in your area, and encourage others to be better stewards of our aquatic environment. Small changes like these are easy for everyone to do, and would significantly help through the reduction of waste that eventually finds its way into our waters.

For more information on marine debris, visit www.MarineDebris.noaa.gov