



Marine Debris

Think there is only litter on highways, sidewalks and school yards? Think again.

Litter also is a significant problem along shorelines, coastal waters, estuaries and oceans throughout the world. This type of litter – called marine debris – happens when we dump materials into waterways or indirectly when materials are washed out to sea via rivers, streams, storm drains and sewage overflows.

Marine debris poses a serious threat to human health and the environment. It has the potential to threaten marine life and damage or destroy the fishing industry in a specific area.

Sources of Marine Debris

There are two types of marine debris. The first is land-based sources including people who litter on the beach and in or near rivers as well as sewer overflows and storm water run-off. Typical debris from these sources includes litter – much of which can be recycled (plastic bottles, aluminum cans, glass bottles, etc.) – as well as medical waste and sewage. Land-based sources account for about 80 percent of the marine debris found on our beaches and in our waters according to the U.S. Environmental Protection Agency (EPA). The second source is from boats. This type of debris includes galley waste and other trash from ships, recreational boaters as well as offshore oil and gas exploration facilities. The overall problem is made worse by two other factors. First, more and more people live or vacation by the water and create more waste. Second, the type of waste we are generating – particularly plastic – is deadly.

South Carolina's coastline extents 187 miles. But if all the bays, inlets and islands are considered, the state's coastline measures 2,876 miles – the 11th longest in the nation.

Plastic debris threatens marine animals.

Clearly, there are many sources and types of marine debris, but plastic is one of the worst. The very properties that make plastics useful (light weight and durable) are at the root of the problems it causes to marine life. Plastic disposed of in the ocean not only lasts for a long time, but it also floats and can be moved by ocean currents for long distances to beaches and biologically productive coastal waters. Plastic contamination of ocean waters is a fairly recent concern – it most likely has grown as a direct result of the enormous growth in plastic production during the past 30 to 50 years.

Every year millions of seabirds, sea turtles, fish and marine mammals become entangled in marine debris or ingest plastic that they have mistaken for food according to the EPA. As many as 30,000 northern fur seals become entangled in abandoned fishing nets each year and either drown or suffocate. Whales mistake plastic bags for squid. Birds mistake plastic for food as well.

What happens? The plastic restricts the animals' movements or kills the animal through starvation, exhaustion or infection from deep wounds caused by the material. The animals may starve to death because the plastic clogs their intestines, preventing them from eating. The toxic substances that are in plastic may cause death or reproductive failure in fish, shellfish and wildlife.

Once the debris reaches the bottom of the ocean – particularly in areas with little current – it may continue to cause environmental problems. When plastic film and other debris settle, it may suffocate immobile plants and animals, producing areas essentially without life. In areas with currents, marine debris can wrap around living coral – smothering the animals and breaking their coralline structures.

Marine debris also impacts fishing and recreational boats by entangling propellers and clogging cooling water intake valves. The repair of boats damaged by marine debris is time consuming and expensive.

Marine debris may harm people, too.

Beach goers may be injured by stepping on broken glass, cans, needles or other litter. Swimmers and divers also may become entangled in fishing line and abandoned netting. Sewage overflows can make it unsafe to swim. The release of toxic substances may make it unsafe to eat the fish in an area.

Just the appearance of marine debris has economic consequences of lost tourism and of government spending tax dollars to remove debris. New Jersey, for example, spends about \$1.5 million annually to clean up its beaches.

There is a worldwide effort not only to clean up marine debris, but also to bring attention to the issue and change the behavior that results in this type of litter. The Ocean Conservancy – with help from the EPA and others – set up the annual International Coastal Cleanup (ICC). The ICC is held on the third Saturday in September every year and is the largest one-day volunteer effort to clean up the marine environment. It's a day at the beach that makes a world of difference.

In 2012 (the latest year figures were available) nearly 600,000 volunteers from about 100 countries removed 9.2 million pounds of trash, litter and debris from nearly 21,000 miles of shoreline according to the Ocean Conservancy. In the United States, nearly 197,000 volunteers cleaned more than 9,500 miles of beaches, streams and riverbanks. These volunteers

removed nearly 3.9 million pounds of marine debris from U.S. waterways.

Volunteers in California, Georgia, North Carolina, Texas and Virginia were among those who removed the most pounds of debris according to the Ocean Conservancy. More than half of the debris was from recreational shoreline activities. This emphasizes the importance of conscientious behavior while enjoying beaches and waterways. The debris included cigarette butts, food wrappers and containers, beverage containers and plastic bags. Particularly dangerous items included syringes, lobster traps, canvas tarps and fishing gear. For more information about the ICC, visit www.signuptocleanup.org.

In South Carolina, the Beach Sweep/River Sweep, which is held annually in conjunction with the ICC, is the state's largest one-day volunteer clean-up event of its kind. For more information on how you can volunteer for the annual Beach Sweep/River Sweep in South Carolina, visit the S.C. Sea Grant Consortium at www.scseagrant.org/Content/?cid=49 or call (843) 727-2078. You can also visit the S.C. Department of Natural Resources at www.dnr.sc.gov/bsrs or call (843) 953-2078.

The problem of marine debris can be solved.

Reducing marine debris means reducing the amount of waste we generate and disposing of it properly. Don't litter. If you see litter, pick it up and recycle. If not, dispose of it properly. Cut the rings of six-pack holders. This lowers the risk of entanglement if the holder makes it out to sea. Participate in local beach, river and coastal clean ups.



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