

WATERSHED AND CLIMATE SERVICES

MARINE DEBRIS SOLUTIONS IN MARYLAND



Maryland

Wes Moore, Governor

Josh Kurtz, Secretary



Background/Overview

Marine debris is defined by the National Oceanic and Atmospheric Administration (NOAA) 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. Anything man-made, including litter and fishing gear, can become marine debris once lost, discarded, or washed into the aquatic environment. The most common materials that make up marine debris are plastics, glass, metal, paper, cloth, rubber, and wood.

Plastics, Microplastics, & Microfibers

One of the most pervasive is plastic debris, which can come in all shapes and sizes. Plastic does not degrade or break down; it only becomes smaller pieces of plastic. Those that are less than five millimeters in length (or about the size of a sesame seed) are called "microplastics." Microplastics are ingested by animals that we consume as food, including oysters, mussels, and fish.

Another manufactured item found widely in the world's waters are "microfibers." Microfibers are tiny strands of material that are shed during textile production, use, and disposal. In fact, microfibers have become one of the most commonly detected types of microplastic debris. Microplastics and microfibers have been found in headwater streams, rivers, soils, lakes, sediments, ocean water, the deep sea, arctic sea ice, seafood, table salt and, most recently, public drinking water. Such widespread exposure raises concerns about potential effects to wildlife and human health.

Derelict Fishing Gear and Vessels

Discarded or lost fishing gear—such as fishing line and crab pots—as well as abandoned vessels also contribute to marine debris. Animals are harmed by this debris through ingestion or entanglement or when marine debris changes a sensitive ecosystem. Discarded fishing line is especially deadly. Crab pots continue to trap and kill aquatic life (e.g., turtles, crabs, fish) long after they are lost or cut from a buoy. This also reduces the crabs available for commercial harvest.

By the Numbers

5,223

Pounds of litter removed by volunteers from Maryland's shorelines in 2023 - most prominent items were plastic bottles caps, plastic bottles, food wrappers and straws.¹

100%

Percentage of water samples from the Chesapeake Bay that contained microplastics²

94%

Percentage of U.S. drinking water samples found to contain microfibers³

8 Million

Estimated metric tons of plastics that enter the oceans every year⁴

9%

U.S. recycling rate⁵

800

Number of marine animal species affected by marine debris ingestion or entanglement⁶

3.3 Million

Estimated number of Chesapeake Bay blue crabs killed annually in derelict crab pots⁷

156

Average number of plastic water bottles that can be prevented annually by using a reusable water bottle⁸

Solutions Emerging in Maryland

As the problem of marine debris has emerged over recent decades, the State of Maryland and local governments have enacted several significant but, as yet, disconnected policies. Staff within the Chesapeake and Coastal Service of DNR stays informed about the issues, seeks funding opportunities, and coordinates responses on marine debris inquiries for the unit.

State and Local Government Policies and Actions

Polystyrene Food Container Bans: Effective October 1, 2020 a food service business or school may not sell or provide food or beverages in an EPS foodservice product, commonly referred to under the trademark name of Styrofoam.

Balloon Release Ban: Effective October 1, 2021, a person may not knowingly and intentionally release or cause a balloon to be released into the atmosphere, and a person may not organize or participate in a mass balloon release.

Microbead Ban: 2015 Maryland law prohibits plastic microbeads as an ingredient in personal care products in Maryland.

Mid-Atlantic Ocean Action Plan (OAP): Maryland contributed to development of the OAP, one goal of which is “healthy ocean ecosystems.” One action identified to meet this goal is to “develop a regionally appropriate strategy for marine debris reduction.” DNR staff participate in the marine debris working group.

Total Maximum Daily Load (TMDL): The Baltimore Harbor and the Anacostia River have TMDL restrictions for trash. Local jurisdictions are required to remove over 1.6 million pounds of trash from the watersheds annually.

State Highway Administration (SHA) Adopt a Highway Program: Small businesses and other SHA approved organizations may agree to adopt a one-mile stretch of highway to clean at least four times a year.

Keep Maryland Beautiful Grants: Maryland agencies present Keep Maryland Beautiful grants in support of environmental education projects, litter removal, citizen stewardship, and protection of natural resources in urban and rural areas.

Maryland Litter Policy: Misdemeanor. Fines and penalties range from \$1,500 and/or 30 days imprisonment up to \$30,000 and/or (up to) five years imprisonment.

Bag Fees: Washington, D.C. enacted a law charging 5 cents for single use carryout bags which has led to a decline in their use and funds trash traps on the Anacostia river and other projects. Several municipalities in Maryland have enacted similar legislation.



Photo by Conservation & Wildlife Foundation NJ



Photo by Maryland DNR



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