

Plastic Foam Needs 'To Go'

How Takeout Containers – and Other Types of Plastic Foam – Hurt Our Oceans and Our Health

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Plastic foam, formally called expanded polystyrene and sometimes referred to as Styrofoam, is everywhere – from takeout containers to delivery packages.

It is fashioned into cups, clamshell food containers, packing peanuts, coolers, and even floating docks, but the material's widespread use comes at a steep cost to the environment, wildlife, and human health.

Plastic foam is both lightweight and brittle. Because it is so light, when plastic foam breaks apart, those tiny pieces can easily be carried

far and wide by wind and water, making it one of the most abundant types of plastic pollution found in U.S. rivers, lakes, and marine environments. Plastic foam affects a wide variety of ocean wildlife, including sea turtles, seals, and shorebirds, and poses significant health threats for people. Made from fossil fuels and toxic chemicals, plastic foam production exacerbates health risks to the communities that live on the fenceline of production plants and contributes to climate change.

Plastic foam is all around us and, increasingly, part of us. Oceana assessed years of research on the pervasiveness and impacts of plastic foam and other types of polystyrene, which will worsen over time unless governments and companies take action to reduce its production and use.



Oceans and Wildlife at Risk

Plastic foam is prolific in the marine environment and was one of the first known cases of plastic pollution in the ocean. Plastic foam harms many marine animals, mainly through ingestion. Threatened and endangered sea turtles, protected marine mammals (including porpoise, elephant seals, and Steller sea lions), shorebirds, mud worms, crabs, mussels, and barnacles have all eaten plastic foam. Animals that consume larger pieces of plastic foam face a risk of intestinal blockage, injury, or death. For example, off Florida's Atlantic coastline, scientists found threatened and endangered sea turtles ingested polystyrene and other plastics shortly after hatching, and half of those turtles died. In a range of studies, wildlife exposed to polystyrene microplastics in lab settings faced complications, including harmful impacts to reproduction, growth, movement, and health. Seabirds are also vulnerable to polystyrene pollution because floating microplastics can look like fish eggs and other preferred prey. Even when plastic foam is not fatal, it is one more stressor for ocean wildlife that is already feeling the effects of climate change, loss of habitat, overfishing, and pollution.

Dangers to Human Health

Chemicals: Approximately 16,000 chemicals are used to make plastic. The plastics industry does not disclose all of the chemicals used to make plastic foam, so the public is kept in the dark about some of the risks posed by the production and use of this material. However, several studies reveal links between the known chemicals in plastic foam and harmful health consequences.

Plastic foam's main building block, styrene, is toxic to the central nervous system and is now "reasonably anticipated to be a human carcinogen" by the U.S. National Institutes of Health. Styrene can easily leach into food and beverages, especially at high temperatures or when the contents are high in fat. Chemicals leached from foam are linked to developmental and reproductive problems, which may contribute to breast and prostate cancer risks. Faced with evidence of polystyrene's harmful effects, the American Academy of Pediatrics recommends that parents avoid plastic products made of polystyrene, which includes plastic foam.

Microplastics: When expanded polystyrene foam and other types of polystyrene break up into smaller pieces, they turn into microplastics and nanoplastics. Plastic foam products also shed microplastics which could contaminate food and drinks stored in them. Medical researchers are producing a growing body of evidence about the chemicals

in plastic foam and their effects on human health, but microplastic particles — including polystyrene — have only recently been found in our bodies. Polystyrene microplastics and nanoplastics have been found in many parts of the human body, including the brain, blood, lungs, kidneys, and reproductive systems. Because research is in early stages, health risks associated with these microplastics are less understood, but their detection in so many parts of the human body is troubling.



Quick Foam Facts

- More than 8 million metric tons of plastic foam are produced globally every year.
- Plastic foam fragments, cups, and plates are among the top 10 most littered items found across the U.S.
- Worldwide plastic foam production emitted an estimated 48 million metric tons of greenhouse gases in 2019, nearly equal to the emissions of 13 coal-fired power plants.
- Plastic foam was one of the first types of plastic discovered in the ocean in 1971.
- Only 1% or less of plastic foam waste is recycled each year in the U.S.
- National polling released in 2025 found that 78% of registered U.S. voters support national policies to reduce single-use plastic foam.

Foam Production Hazards

The production of plastic foam poses environmental and health problems. Its creation depends on the extraction of fossil fuels, whether from drilling operations on land or in the oceans, including by hydraulic fracturing. Production plants send hazardous emissions of chemicals, including styrene, benzene, and ethylbenzene, into the air, threatening the health of the people who live nearby or those who work inside the facilities.

Plastic foam production also contributes to climate change. In 2019, global plastic foam production created an estimated 48 million metric tons of greenhouse gas emissions, the equivalent emissions of almost 13 coal-fired power plants.

The False Promise of Plastic Foam Recycling

Plastic foam is rarely recycled. In fact, 1% or less of plastic foam waste is recycled in the United States each year. Hardly any U.S. communities collect single-use plastic foam as part of curbside recycling programs. Its bulkiness makes it economically impractical to transport to recycling plants, and plastic foam foodware is often too contaminated with food to be recycled. Recycling plastic foam costs more than making the material from scratch, further contributing to its abysmally low recycling rate.

Turning the Tide on Foam

There is good news. State and local governments across the United States are taking action to tackle plastic foam. As of the end of 2024, 12 states and more than 250 counties and cities had passed policies to curb single-use plastic foam — and the evidence shows that these policies are working.

After Washington, D.C. passed a single-use plastic foam ban in 2014, the Anacostia River that runs through the city saw a 50% reduction in plastic foam pollution following the first year the law was implemented. After five years, foam pollution fell by 88%. Similarly, Maryland's Baltimore Inner Harbor saw an 80% reduction in foam pollution collected by a trash interceptor, following a statewide single-use foam foodware ban. After Charleston, South Carolina banned foam takeout boxes in 2018, the city saw a 20% decrease in this type of trash during beach clean-ups the following year.



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Key Takeaways

Single-use plastic foam is not just unnecessary, virtually unrecyclable, and wasteful — its presence in so many aspects of our lives is toxic to our health and oceans, and its continued use comes at a cost. Plastic-related chemical exposures alone are estimated to cost hundreds of billions of health care dollars each year.

A material that harms people and wildlife, accelerates climate change, pollutes the air, and fills the oceans with trash should be phased out. Companies and governments have the chance to make the right choice for our health, our communities, and our oceans by curbing the production and use of single-use plastic foam and moving to reusable and refillable alternatives.

Oceana recommends that

Governments:

- Phase out the sale and distribution of single-use plastic foam — including foodware, packing peanuts, and foam coolers — at the local, state, and national level;
- Encourage reusable and refillable systems in place of single-use packaging and products.

Companies:

- Stop producing and using single-use plastic foam;
- Give customers choices that are free of plastic foam.

#PlasticFreeSeas

For Oceana's full report and references, please visit: usa.oceana.org/PlasticFoam

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