

Plastic Bottles and Caps Facts and Figures

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Prevalence

Scientists estimate that 127 billion single-use plastic bottles are used in the United States each year (DSM Environmental/Ocean Conservancy).

Plastic beverage bottles and caps were the third and fourth most common types of trash collected by International Coastal Cleanup® (ICC) volunteers worldwide from 1986-2025. In that time, ICC volunteers removed nearly 27 million plastic bottles and over 20 million caps from beaches and waterways.

Environmental Impact

To date, about 1,300 marine species have been found to ingest plastics (Science).

Plastic beverage bottles can be deadly to marine life. An albatross was found to have been killed by swallowing a plastic bottle (Conservation Letters).

Hard plastics like bottle caps are one of the deadliest plastics when ingested, especially for seabirds (PNAS). Even ingesting one bottle cap is enough to kill a seabird (Wildlife Impact Calculator).

Exposure and Human Health Impacts

Bottled water drinkers are estimated to consume nearly 20x more microplastics per year compared with tap water drinkers (Journal of Hazardous Materials).

One study estimated that, of all the things humans eat and drink, bottled water is the greatest source of microplastics (Journal of Hazardous Materials).

Water from plastic bottles contain microplastics for a variety of reasons: microplastics are shed during the bottling process (Frontiers in Chemistry), from exposure to heat (Water Research), and from the act of simply removing the bottle cap (Nature).

While humans can clear some ingested microplastics from our systems (Current Environmental Health Reports), questions remain about the fate of smaller micro- and nanoplastics that may enter our organs instead (Nature; Microplastics and Nanoplastics).

Plastic products often contain chemical additives, and a recent study looking at over 16,000 such additives found that 25% are chemicals of concern (Nature).

Solutions

Beverage bottles are often made of highly recyclable polyethylene terephthalate (PET) – the most widely recycled plastic in the world (ACO Recycling) – but coloring or some labels can prevent them from being readily recycled (Association of Plastics Recyclers).

State extended producer responsibility (EPR) laws (which make producers responsible for waste management costs of the products they create) that include bottles can require producers to improve bottle design for recyclability.

Bottle deposit systems, also known as bottle bills, are one of the most effective policies to reduce plastic bottle pollution. Nine of the 10 U.S. states with the highest recycling rates have bottle bills (Eunomia Research). In the Netherlands, after expanding its deposit return system to include small bottles and beverage cans, litter covered by this program dropped 79% in only four years (Reloop).

Plastic caps should be screwed back onto the bottle before disposal (Association of Plastics Recyclers). Policies such as bottle cap tethering can help ensure caps are not lost and stay attached for recycling.