

Plastic Facts

Plastic pollution is becoming a very serious problem for us and for the whole world. It is used in massive quantities, and it doesn't degrade into natural materials. For those of us in coastal towns, its affect on both the ocean and our health is significant.

Many forms of plastic – especially plastic bags and polystyrene containers – end up in the ocean either whole or broken down into tiny particles called microplastics (fibers, films, fragments, microbeads) ranging from a quarter of an inch to microscopic.

Plastics in the ocean

- At the bottom of the ocean food chain, microplastics are mistaken for plankton.
- Plankton-eating animals ingest them, and larger animals ingest these, concentrating the plastic and associated contaminants and contaminants all the way up the food chain.
- Example: Mussels ingest them in tremendous quantities, but excrete them only slowly.
- We're at the top of the food chain, and though little evidence has yet been developed on the effects of ingested microplastics on humans, there are clear grounds for concern.
- Larger plastic pieces are mistaken for food, eaten, and eventually kill the animal or bird.
- Whales that take in huge quantities of plankton are now ingesting microplastics.
- Plastic bags look like jellyfish, sea animals eat them and die from strangling or digestive blockage

Plastic poisons

- * Microplastics absorb toxins from the environment and can release them if ingested
- Plastic contains endocrine disrupting chemicals, like phthalates and bisphenols (BPA and its alternatives), which can cause cancerous tumors, birth defects, and other developmental disorders.
- Polystyrene (aka styrofoam) contains styrene: it is listed as a probably carcinogen, and it leaches into food and drink when exposed to heat, acidity, or fat (e.g., hot coffee, packaged meat or fish).
- Inks used on plastic bags sometimes contain lead and other toxins

Plastic bag consumption: numbers

- Estimated number of plastic bags used each year, world-wide 4 trillion
- Number of plastic shopping bags used each year, in the US alone 14 billion
- Percentage of plastic bags returned for recycling 1%
- Annual cost to US retailers for giving away "free" bags \$4 billion
- Barrels of oil required for US annual plastic bag consumption 12 million

Plastics in the ocean: numbers

- Percentage of land litter made of plastic ending in the ocean 10
- Percentage of ocean litter made of plastic 80
- Percentage of plastic ocean litter coming from land 80
- Annual addition of plastics to the ocean >800 tons
- Average number of pieces of plastic in each square mile of ocean 46,000
- Time for plastics to completely break down in the ocean (estimate 1) 50 - 500 years
- Time for plastics to completely break down in the ocean (estimate 2) 450 years - never
- Number of marine animals killed each year due to plastic bags 100,000
- Estimated ratio of plastics to fish by 2025 (by weight) 1 to 3
- * Estimated ratio of plastics to fish by 2050 (by weight) more than 1 to 1