

Plastic Pollution

Key Definitions

Degradable:

Materials that are capable of being broken down (physically or chemically) into smaller parts. This can happen via 4 main mechanisms:

- Sunlight (photolysis)
- Water (hydrolysis)
- Organisms (biodegradation)
- Mechanical abrasion & weathering (waves, wind & sediment).

Biodegradable:

Materials that can be chemically broken down by microorganisms and converted back into their natural monomers e.g. CO₂, biomass, water.

Biobased plastics:

Plastics are either wholly or partially produced from renewable biomass (sugarcane, mushrooms, corn, etc.). Partially biobased means the material also contains parts derived from non-renewable resources.

Plastic Pollution:

Plastic pollution is the accumulation of plastic objects and particles (e.g. plastic bottles, bags, and microbeads) in the Earth's environment that adversely affects wildlife, wildlife habitat, and humans across land, water-ways and oceans

Microplastics:

Extremely small pieces of plastic debris in the environment resulting from the disposal and breakdown of consumer products and industrial waste.

Some Further Reading

- ['Accumulation of microplastic on shorelines worldwide: Sources and sinks' by Browne et al. \(2011\).](#)
- ['What Comes Out in the Wash' by M. Browne, 2015.](#)
- [Why you shouldn't wash your T-shirt after one wear](#)
- [The world's plastic pollution crisis explained](#)
- [Inside the lonely fight against the biggest environmental problem you've never heard of](#)
- [What Comes Out in the Wash, New York Times Opinion piece](#)
- [The Plastic Problem, A PBS Documentary](#)
- [A Plastic Ocean, Documentary \(Official Trailer\)](#)

Check out Episodes #3, #39, #40, and #41 for the full interview where we discuss the impact of plastic pollution and ways we can reduce the impact of plastic on the environment

Key Arguments

Plastics have been found in all areas of the globe from the deepest trenches of the oceans to the snow on the peaks of the highest mountains. The majority of these plastics cannot be biodegraded and thus remain in the environment for years or even centuries.

Many of the studies investigating the degradation of these materials are not environmentally relevant. That is, they are often done in the lab and don't expose the plastics to conditions that naturally exist in the environment. This makes it difficult for us to make accurate predictions about the longevity of these materials.

Everytime we wash our clothes they shed 100s of fibres into the sewage system (1 shirt can release >1900 fibres in a single wash!). These fibres can be made from plant (cotton, linen, rayon), animal (wool, silk) or plastic (polyester, nylon, acrylic) polymers and enter the environment by stormwater and sewage outlet drains.

Mark Browne argues . . .

85% of the human-made material found on the shoreline were microfibers and matched the types of material, such as nylon and acrylic, used in clothing. The presence of such fibers in the environment is particularly problematic not only because they sneak their way into the food chain, but also because they can damage the lungs of humans and animals. It's not just plastics; natural fibers, including those from cotton and flax, can also harm lung function and cause scarring.

What you can do

- QUIT single-use plastics
- Buy clothing made from natural fibers where possible.
- Spread the word; inspire your friends to #saynotoplastic
- Ask local businesses near you to go plastic-free
- Email and complete voice of the customer surveys for big businesses (Woolworths, Coles, ALDI, etc.) asking them to stop using plastics for fresh produce.

Check out this article that gives some handy tips on how to cut down your plastic usage - link to the article [here](#)

Here's a guide to how individuals can tackle plastic pollution - link to the article [here](#)

Here's a guide to reducing plastic pollution - link to article [here](#)

