

# SO, WHAT'S THE PROBLEM?

Take a look - single use items are *all* around us.

When we throw away plastic and other single-use items, such as toothbrushes, tape, plastic bags, water-bottles, utensils, containers, cases, certain toys, and *so much more*, where does it go, and how does it affect us?

## What's the deal with plastics?

Since the large-scale use of plastics first became popular in the 1960's, there has been a rapidly increasing detrimental impact on our environment. The majority of plastics are made out of monomers and polymers. None of these widely-used, extremely common plastics are biodegradable, meaning it can't be decomposed. Instead, these products accumulate in our environment. Over time, plastic breaks down into tiny particles due to environmental factors such as radiation from the sun and ocean waves<sup>1</sup>.

The issue with these micro plastics is that they take decades to break down - and even then, they are still filled with toxins and cause harm within the environment.<sup>2</sup> Ultimately, animals mistaken micro plastics as food. Once eaten, animals cannot digest these plastics, which over time fill their stomachs, and they ultimately starve themselves to death as they can't eat any food.



Microplastics & Fish, National Geographic

## Bioplastics vs. petroleum-based plastics.

Although many products that are marketed in today's stores may say "bioplastic", it doesn't necessarily mean it is any better for the environment. Many of these products are referred to as bioplastics due to the fact that they can degrade (physically break into pieces) rather than decompose (decompose by living organisms).<sup>3</sup>

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<sup>1</sup> *Microplastics*. (n.d.). National Geographic. Retrieved July 31, 2020, from <https://www.nationalgeographic.org/encyclopedia/microplastics/>

<sup>2</sup> *Ibid*

<sup>3</sup> *Bioplastics vs. petroleum-based plastics (D. M. McGuire, Comp.)*. (n.d.). <https://sfyl.ifas.ufl.edu/media/sfylifasufledu/flagler/sea-grant/pdf-files/microplastics/Bioplastics-vs-petroleum-plastic-final.pdf>

## Okay, but how does this affect us?

The utmost issue is that this affects the animals swimming healthily in our oceans. As His All-Holiness Ecumenical Patriarch Bartholomew states, “For human beings to cause species to become extinct and to destroy the biological diversity of God's creation; for human beings to degrade the integrity of the earth by causing changes in its climate, by stripping the earth of its natural forests, or by destroying its wetlands; for human beings to injure other human beings with disease by contaminating the earth's waters, its land, its air, and its life, with poisonous substances – all of these are sins<sup>4</sup>.” Not only is this harm towards God's creation considered a sin, but these harmful effects find their way back to us in the end. Numerous studies have been conducted on marine life and water and discovered that micro plastics have been discovered in tons of types of marine organisms ranging from plankton to whales. Not only this, but micro-plastics have even been traced in commercial seafood, as well as drinking water<sup>5</sup>. While we may not be able to see the issue with our eyes, our bodies are taking it in and slowly being impacted.

## What about recycling?

Now, you may be asking, how about recycling? Can't we just recycle and plastics won't get sent to the ocean? According to a global analysis performed on all mass-produced plastics ever made, only nine percent of plastic gets recycled.<sup>6</sup> Not only this, but specific single-use harmful items cannot be recycled depending on the area you live in. In Connecticut, USA, styrofoam isn't accepted as a recyclable item and has to be thrown away as it is too light for the sorting machines to recognize.<sup>7</sup> Of course, this isn't the case everywhere, but this small setback still causes for extreme harm to the environment.

## What's the issue with Styrofoam™?

Polystyrene foam, or more commonly known as Styrofoam™, may seem lightweight and harmless, but it is in fact just as harmful as other plastics. During processing and development, over 50

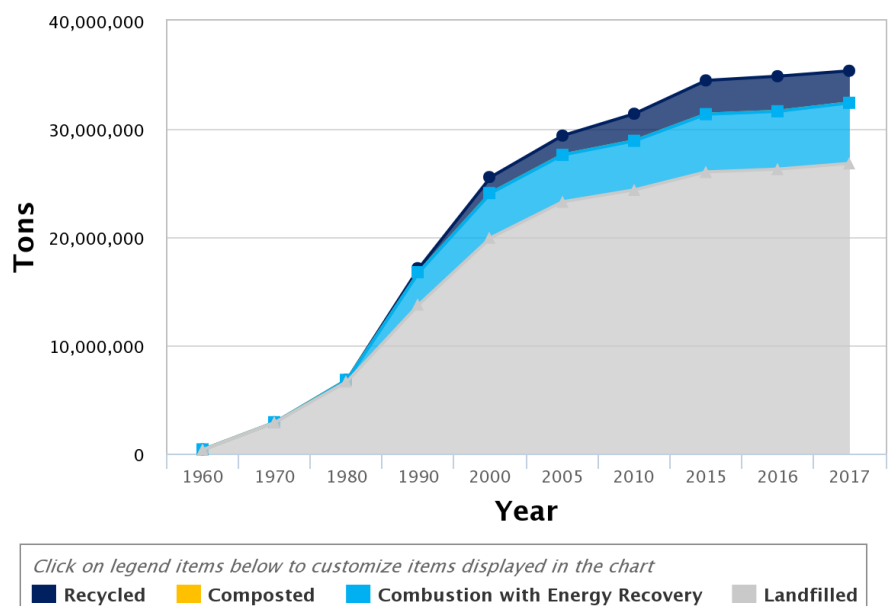
<sup>4</sup> *Ibid*

<sup>5</sup> *Ibid*

<sup>6</sup> Geyer, R., Jambeck, J. R., & Law, K. L. (2017, July 19). *Production, use, and fate of all plastics ever made (Research Report No. 7)*. <https://doi.org/10.1126/sciadv.1700782>

<sup>7</sup> *Can I Recycle It? (n.d.)*. RecycleCT. <http://www.recyclect.com/beyond-the-bin.html#!rc-cpage=200353>

**Plastics Waste Management: 1960–2017**



Source: United States Environmental Protection Agency

chemical byproducts are released into the air, water, and communities surrounding these facilities.<sup>8</sup> Styrene is believed to be a carcinogen (cancer-causing), as it potentially leaches from the Styrofoam™ when heated. Additionally, putting hot foods in Styrofoam™ is just as harmful.

### So how does this stuff get into our oceans?

There are numerous ways in which plastics and other items can find themselves into the ocean. The main ways are as listed:<sup>9</sup>

#### Trash

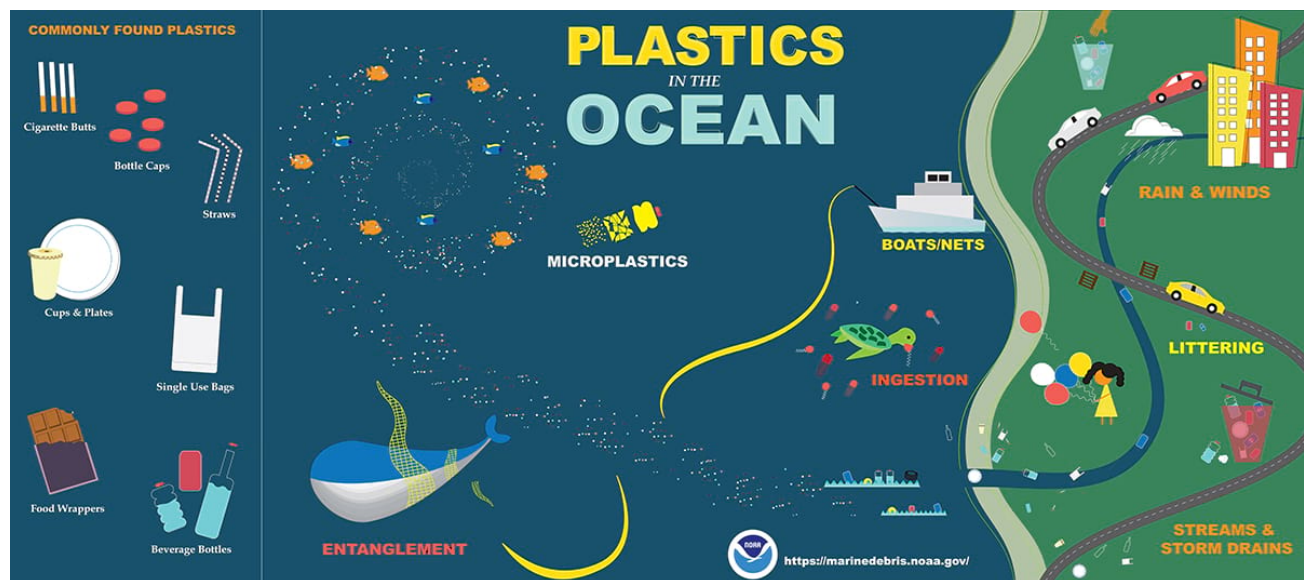
When materials are thrown away, they may often blow away while being transported from one place to another due to their lightweight features.

#### Litter

Rain and winds can gather floating trash which most often eventually finds its way to the ocean.

#### Flushed away

Commonly-used plastic based items such as wipes get flushed down toilets and drains. From there, they can be carried into the ocean or nearby water facilities.



Source: National Oceanic and Atmospheric Administration (NOAA)

<sup>8</sup> Styrofoam™. (n.d.). Children's Environmental Health Network. Retrieved August 3, 2020, from <https://cehn.org/our-work/eco-healthy-child-care/ehcc-faqs/faqs-styrofoamtm/>

<sup>9</sup> A Guide to Plastic in the Ocean. (n.d.). National Oceanic and Atmospheric Administration (NOAA). <https://oceanservice.noaa.gov/hazards/marinedebris/plastics-in-the-ocean.html>