

## Plastic Debris Pollution involved in the Ocean Molly Alice Williams\*

Department of Marine Science,  
University of Bangor Egypt.

### Abstract

The pollution problem is growing exponentially due to a combination of increasing consumerism and an increase in the use of plastics in manufacturing the products we use on a daily basis. It is common for these items to be single-use items, which are used only once and then thrown away. Marine debris is most commonly generated from two sources: These include litter left on beaches by beach-goers, debris washed into the ocean by storm water runoff, and litter from beach-goers [1] garbage overflowing from ships, boats, and debris discarded at sea. This includes fishing debris such as plastic strapping from bait boxes, discarded fishing line, and derelict fishing gear.

### Corresponding author:

Ishmael Kosamu

 alicemolly @edu.in

Department of Marine Science, University  
of Bangor Egypt

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### Introduction

The pollution problem is growing exponentially due to a combination of increasing consumerism and an increase in the use of plastics in manufacturing the products we use on a daily basis. It is common for these items to be single-use items, which are used only once and then thrown away. Marine debris is most commonly generated from two sources: These include litter left on beaches by beach-goers, debris washed into the ocean by storm water runoff, and litter from beach-goers [1] garbage overflowing from ships, boats, and debris discarded at sea. This includes fishing debris such as plastic strapping from bait boxes, discarded fishing line, and derelict fishing gear. In the next 50 years, there will be more plastic in the Ocean than fish, according to an estimate of 8 million tonnes of plastic entering the ocean every year. By using plastics excessively and mismanaging waste, we are killing countless marine animals by entanglement and poisoning. Even the seafood we eat is contaminated with chemicals due to our waste addiction and waste management mismanagement. Plastic trash mainly gets to the oceans from land [2]. It is also carried to the sea by major rivers that act as conveyor belts, gathering trash as they move downstream. Once at sea, the plastic trash mostly stays in coastal waters. Nevertheless, once it is transported by ocean currents, plastic waste can end up in all parts of the world. It is gradually broken down into small particles of plastic waste, often roughly the size of a fifth of an inch, by light, wind, and wave action. There are hundreds of microplastics floating through the water

column today, and they are found in every corner of the planet from Mount Everest, the tallest peak, to the Mariana Trench, the deepest trough. It is becoming increasingly difficult to distinguish between pieces of micro plastic [3]. There have also been reports of plastic microfibers floating through the air and in the drinking water system. It is possible for plastic to be dangerous for humans in different ways. Chemicals like lead, cadmium, and mercury pose a direct threat to human health through plastics. The same toxins have also been found in many fish in the ocean, which can be very harmful to humans. Among some plastics there is the substance diethylhexyl phthalate (DEHP), which makes them toxic. In addition, plastics contain other toxins that can cause cancers, birth defects, immune system issues, and developmental problems in children. Other plastics that are toxic include BPA, or bisphenol-A, and phthalates (both of which have been mentioned above). These two issues are of great concern to human health [4]. BPA can be found in many things such as plastic bottles and food packaging materials. Polymer chains of BPA break down over time, and can enter the human body in many ways, including drinking contaminated water and eating fish that is exposed to the broken down toxins [5]. In particular, toxic chemicals such as BPA interfere with human hormones.

### Conclusion

In order to protect yourself from contamination, you should probably avoid having a diet that is mainly composed of fish, since most is probably contaminated. As members of this fragile ecosystem, one of the most effective things we can

do is to be responsible for our garbage. Our goal should be to avoid purchasing plastic-wrapped products whenever possible.

Recycling plastic when we do use it is always a good idea. Consider using paper bags instead of plastic or bringing your own. Make sure you use a reusable water bottle and don't litter.

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