Marine Life And Plastics: How It Affects The World And Me Personally

We Know Plastic Is Harming Marine Life. What About Us?

Author

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Summary

Each year millions of tons of plastic waste end up in our oceans. This pollution occasionally makes the news through a picture of a bird or turtle in distress from getting caught up in the larger pieces, but what about what is being ingested by sea life? The large pieces of plastic are broken down over time, through exposure to the sun, heat, water, and wind, and become microplastics. These microplastics are mistaken as food and ingested by marine life. (Royte.)

We know this is hurting marine life, but to date, studies show the microplastics are only in the digestive tracts of the marine life, and not making their way into the muscles of the marine life. Because humans generally do not eat the marine life whole, the risk seems right now to be negligible. A recent UN report found that people only consume minute amounts of microplastics. (Royte.)

So what is the concern? As these plastics continue to break down, they will become nanoplastics, which are so small they can move at a cellular level and get into any tissue.

Critique

The author examined in this article whether or not this already is harming, or has that potential, humans via the food chain. Therefore, the demographic she was attempting to reach is anyone who eats seafood or anyone who cares for anyone who eats seafood. It is disheartening that such topics need to presented in a way that plays to egocentricity; in other words, while this author brought this topic into question in a magazine as approachable by lay people as National Geographic, I wish that the simple fact of the harm to sea life was enough to cause humankind to take action. As the author points out, the list of negatively affected marine life is now in the hundreds of species.

The most damning data presented in this article, coming almost as a sidebar to the primary science, is that many of the chemicals used as additives in the manufacture of plastic products

and packaging are known to cause everything from weight gain to congenital disabilities. (Royte.) As the article points out, “A basic tenet of toxicology holds that the dose makes the poison, but many of these chemicals—BPA and its close relatives, for example—appear to impair lab animals at levels some governments consider safe for humans.” (Royte.)

Another stunning revelation in this article is that scientists find microplastics in both wild caught and farmed fish. Of the 114 species found with microplastics in their systems, over half serve as human food product in one way or another. (Royte.)

One weakness in the article is that while the author, and the science she cites, unabashedly leans toward, without solidly presenting, a hypothesis that humans will eventually be negatively affected by plastics and their associated chemicals, the data is inconclusive. Part of the reason for this is that we still do not have a workable methodology for identifying nanoplastics, which are as small as a 100 billionth of a meter in size. Consequently, there is no data on whether or not humans are already ingesting these plastics. Debra Magadini, a scientist working out of Columbia University’s Earth Observatory, says in the article that we will not have more answers for five to ten years. (Royte.) The problem is, without reliable answers, policy changes, both business and government driven, will likely be slow moving.

Even with that weakness, what is known that makes the unspoken hypothesis persuasive is this—

- Microplastics are larger than nanoplastics and cannot pass into organ tissue, but are incredibly harmful to marine life.
- Microplastics will eventually become nanoplastics, which can enter muscle and organ tissue.
- The chemicals included in the manufacture of plastics are known to cause a myriad of health problems, and sometimes in lab animals at a rate lower than the tolerance for human food.

How it affects the world and me personally

Strictly for me, this is terrible news. I love seafood of all kinds, and especially sushi and sashimi. I occasionally fish, for food rather than for sport, and while I’m not by any stretch of the imagination an avid fisherman, I would miss it if we get to the point where a preponderance of the evidence points to fish being more toxic than Monsanto beans or mad cows. I also love viewing and other aquatic life on almost any scale and would miss that aspect of marine life.

The news, unfortunately, for the world is much worse than the news for me. While I enjoy fish, fishing, and observing marine life, 2.5 billion people rely on 100 million tons of fish each year for 20% of their animal protein diet. (Cite.). The vast majority of fisheries are in developing countries, and if that market dries up, the hunger for the people who rely on fishing will be double—they will lose a large part of their diet and a larger part of their income. Finally, while there are no data points for this, it is as real as the data to me; with each species we lose, we become poorer. With each species we are responsible for killing off, we become a little more guilty, first of bad stewardship but eventually of suicide. So my hypothesis to the question the author asks is this—yes, plastics are harming us too, maybe it just has not reached our livers or kidneys yet.

Works Cited:

1. Royte, E. (2018, June). “We Know Plastic Is Harming Marine Life. What About Us?” National Geographic, https://www.nationalgeographic.com/magazine/2018/06/plastic-planet-health-pollution-waste-microplastics/