

To the Editor of Science Daily

I read the article you published on January 5, 2011, with great interest. This article, "Oceanic 'Garbage Patch' Not Nearly as Big as Portrayed in Media" has generated a lot of comment within the environmental community and beyond. For this, I am extremely grateful. Although I agree that there has been a lot of misrepresentation in the media of the size and description of a "Garbage Patch", focusing on these parameters alone does not address the real issue. The problem that needs investigation and correction is the significant amount of plastic pollution in our oceans and its adverse effects on marine life and humans. This is an emerging science, and findings surrounding this issue will change rapidly with time as initial results define questions for future researchers to answer.

Much of the work done during the last two decades has been focused on the large pieces of plastic (derelict fishing gear, for example) and the risk those bring to vessels, by entangling propellers, causing significant damage. There are numerous instances of larger pieces of plastic creating entanglement and ingestion issues with marine life, including birds, turtles, and even whales. More recent discussions in the scientific community revolve around the impact of smaller pieces of plastic, termed "micro-plastics", defined as particles less than five millimeters in diameter.

Why are the smaller pieces receiving more attention? They have a greater surface area, which allows them to adsorb more organic materials. The smaller the size of the plastic particle, the smaller the animals are that can ingest them. This is a direct link into the food chain, as larger animals eat smaller, and eventually humans ingest much that is an ocean-based food.

Endocrinologists warn that minute amounts of certain types of chemicals result in human health development issues, such as early onset puberty, or feminization of males, particularly in the very young. Some plasticizers and some organic materials which can adhere to plastics fall into this category of "endocrine disruptors."

This hypothesis is so compelling that in June, 2010, a group of stakeholders convened in Paris, invited by a United Nations organization, GESAMP. GESAMP is part of UNESCO, the United Nations Education, Scientific and Cultural Organization based in Paris, France. GESAMP stands for "Joint Group of Experts on the Scientific Aspects of Marine Environmental Protection". Derived from nearly two decades of concern over the emerging topic of toxicity related to materials associated with plastics, this workshop addressed the topic of the potential transfer of toxins via microplastics in our oceans.

The consensus of participants was that GESAMP will petition UNESCO's Intergovernmental Oceanographic Commission to fund a world-wide assessment of the current scientific information available. The purpose of the assessment will be to identify the presence and role of micro-plastic particles polluting our oceans in order to determine what further research should be done.

For a complete, downloadable copy of the GESAMP report, you may follow this link: http://www.gesamp.org/data/gesamp/files/media/Publications/Reports_and_studies_82/gallery_1510/object_1670_large.pdf

The scope of the problem of plastic marine debris is large, needs further definition, and will continue to evolve as more information is gathered. But there is enough evidence for concern about the health of our children, and of the health of generations to come. With more communication and attention to the real issues, we can make the best choices about treating our human health and our planet properly.

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