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editorial

***Carl Nettleton**, Founder, OpenOceans Global*

Together, We Can Tackle Ocean Plastic Pollution

Much work has been underway to address the ocean plastic crisis: dedicated beach cleanups around the world, new laws and regulations to ban single-use plastics, new recycling and river intervention technologies, a possible international treaty, and more. All of this work is important and will ultimately lead to a different kind of plastic culture in the future.

However, even with these efforts, the ocean plastic crisis is accelerating and has already reached epic proportions. According to The Pew Charitable Trusts, 11 million metric tons of plastic reached the ocean in 2020, and that number is expected to nearly triple to 29 million tons by 2040. Reducing global consumer demand and trying to stop the global industrial production of plastic is not enough. It's time to go big.

One percent of plastic pollution (110,000 tons annually) that ends up in the ocean is directly from the U.S. coast, but the global impact of the U.S. is far greater because of plastic waste shipped to other countries and plastic waste generated by U.S. consumer products manufactured overseas that end up polluting the ocean. The goal is to stop at least 11 million metric tons of plastic from reaching the ocean every year. How will we do that?

First, we have to understand how plastic reaches the ocean. Most comes from land, and as much as 80 percent of this reaches the ocean via rivers.

The next question to answer is: what land and what rivers? One study estimates 84 percent of ocean plastic originates from nine countries in Asia and Brazil. Another estimates 70 percent comes from seven countries in Asia, Brazil, Turkey and Nigeria.

Industries use the term "point of contamination" to determine how to keep their processes free from contaminants. Because plastic debris reaches the ocean primarily through rivers, rivers have been identified as the primary point of ocean contamination. Emerging technologies for river intervention in the countries where the vast majority of plastic pollution reaches the ocean could be implemented now, while long-term solutions are also implemented in the ocean plastic pollution supply chain upstream.

Undoubtedly, technology will play a big role. Solutions to skim or filter plastic from rivers are already being used and/or tested. Investment will also have to be made in the basic elements of plastic trash management. We must recycle what we can, which means we need new recycling plants. We also need a disposal strategy for what can't be recycled to protect both human health and the environment.

Current efforts to address the ocean plastic crisis are to be applauded, but they are not enough. Significant investment and a unified global response by governments, multinational corporations, philanthropies and others, with a focus on the highest polluting countries, can begin to mitigate the problem.

To help accomplish this, OpenOceans Global is documenting coastlines pervasively fouled by plastic on its ocean plastic trash map: www.openoceans.org/trash-map. If people around the world can visualize where plastic ends up, they can then find the source and the solutions. OpenOceans Global has also developed an online app, www.openoceans.org/trash-survey, to enable citizen scientists to place plastic-fouled coastlines on the map, including a photograph and information about the source of plastic and what is being done to address it. *Sea Technology* readers are invited to use the app to document plastic-fouled beaches so we can visualize and address the problem.

Each of us can make simple changes, such as eliminating the use of plastic straws, but we all need to get together to go big on ocean plastic prevention before it's too late. **ST**