

Congress of the United States
Washington, DC 20515

June 5, 2019

The President
The White House
Washington, DC 20500

Dear Mr. President:

We are writing to urge you to develop a coordinated interagency research and response plan to address the significant threat that mismanaged plastic waste poses to human health,¹ public budgets, and to the sustainability of our planet and waterways. At a lunch for the bipartisan International Conservation Caucus earlier this year, attended by both Senate and House members, there was unified concern and call to action from both parties in both chambers regarding the global plastic pollution problem.

Since its invention in 1907, plastics have played an important role in our society. Plastics are present in almost every product we rely on and are essential across numerous industries. The durability and long-lasting nature of plastic, which makes it a useful and versatile material in our daily lives, also allows it to persist in landfills and in aquatic environments for decades to centuries, and to bioaccumulate in aquatic food webs that nourish vast populations.

The abundance of natural gas production in the U.S. has reduced the cost of plastic production and expanded its use to nonessential disposable purposes. Waste management infrastructure is not keeping up with the proliferation of products in single-use plastic packaging now offered to consumers. One important contributor to the plastic epidemic is single-use consumer packaging products used conveniently and “on-the-go” that have a lifespan of an hour or less.

Consumption of these packaging products is growing at about 5% per year,² but they are generally unable to be economically recycled because they are dirty, dispersed and mixed plastic materials. In the U.S. in 2018, 0.67 pounds of plastic was wasted per person per day, totaling 39.9 million tons of plastic each year. Unfortunately, the spread of single-use plastic products has led to widespread pollution of plastic in the U.S. and has caused a growing financial burden on state agencies, local governments and taxpayers for remediation. We believe that a robust strategy to limit single-use plastics domestically can reduce plastic pollution in America while serving as an example for other countries to follow.

Many citizens strongly support recycling, but plastics recycling is not a realistic solution to the plastic pollution crisis. Most post-consumer plastics are economically impractical to

¹ Vethaak, A. Dick, and Heather A. Leslie. "Plastic debris is a human health issue." (2016): 6825-6826.

² MarketWatch, Flexible Plastic Packaging Market Industry Growth Analysis & Forecast by 2024, available at <https://www.marketwatch.com/press-release/flexible-plastic-packaging-market-industry-growth-analysis-forecast-by-2024-2019-03-26>

recycle based on market conditions alone. The costs of recycling (trucks, drivers, equipment, and sorting labor) are increasing while low-cost, abundant natural gas and new plastic production expansion is driving the prices of new plastics lower. Mechanical and chemical recycling processes of most plastic waste are economically uncompetitive and impractical at commercial scale. The economic reality is that most waste plastic does not have sufficient value to drive reclaiming it.

Proper waste management infrastructure and practices do their best to keep trash contained and out of oceans and waterways, but at extremely high costs to our state and local governments. Across the U.S., state and local governments spend between \$3.2 and \$7.9 billion annually on plastic bag litter alone.³ Disposing of plastic bag waste in landfills alone can cost states millions of dollars a year, the costs of which fall to the public and taxpayers, diverting valuable resources and funds that could be used for other means.

In developing countries, the plastic pollution problem is compounded by waste that is inadequately disposed or mismanaged at unsecure dump sites. These plastic waste streams are at risk of being carried to coastlines from inland waterways and entering the ocean via wind or tidal activity. Approximately 8.8 million tons of plastic makes its way into the oceans annually, and this number is expected to double by 2030.⁴

Estimates are there are over 268,940 tons of plastic currently floating at sea.⁵ Some of the plastics that enter our rivers and oceans begin as large pieces of litter, such as a plastic bag or bottle, but break down into smaller and smaller pieces by wind and tides, eventually becoming microplastics (<5 mm in diameter) and nanoplastics (scale of a thousandth of a mm).

The behaviors and potential impacts of micro- and nanoplastics that enter the ocean are troubling. These tiny particles of plastic in the aquatic environment can be easily consumed by marine life and penetrate the blood-brain barrier,⁶ thereby accumulating in the organs and tissues⁷ of those organisms that ingested them. The absorption of toxic chemicals from ingested nanoplastics could then be passed onto humans that consume fish or shellfish.⁸ This concern isn't limited to seafood and other sources of wildlife that humans consume. Recent studies have

³ Rebecca Taylor, *It's Not Easy Being Green: Lessons from Disposable Carryout Bag Regulations* (Spring 2017), available at <https://cloudfront.escholarship.org/dist/prd/content/qt2cb9g9z8/qt2cb9g9z8.pdf>

⁴ Jambeck, et. al, "Plastic waste inputs from land into the ocean", (2015), available at <https://jambeck.engr.uga.edu/landplasticinput>

⁵ Eriksen, et. al, "Plastic Pollution in the World's Oceans: More than 5 Trillion Plastic Pieces Weighing over 250,000 Tons Afloat at Sea", (2014), available at <https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0111913>

⁶ Mattsson, Karin et al. "Brain Damage and Behavioural Disorders in Fish Induced by Plastic Nanoparticles Delivered through the Food Chain." *Scientific Reports* 7 (2017): 11452. *PMC*. Web. 2 Nov. 2017.

⁷ Von Moos, Nadia, Patricia Burkhardt-Holm, and Angela Köhler. "Uptake and effects of microplastics on cells and tissue of the blue mussel *Mytilus edulis* L. after an experimental exposure." *Environmental science & technology* 46, no. 20 (2012): 11327-11335.

⁸ Chen, Qiqing, Daqiang Yin, Yunlu Jia, Sabrina Schiwy, Jessica Legradi, Shouye Yang, and Henner Hollert. "Enhanced uptake of BPA in the presence of nanoplastics can lead to neurotoxic effects in adult zebrafish." *Science of the Total Environment* 609 (2017): 1312-1321.

found that 90% of all table salt contains microplastics. The bioaccumulation of chemical toxins from plastics that threaten human health requires an urgent response by the United States.

We believe that a well-coordinated and well-funded interagency research plan, coupled with robust investments in our response programs, is essential to address the domestic and global plastic pollution crisis at both a human health level and at an ocean conservation level. We urge you to consider organizing the National Academy of Sciences, National Institutes of Environmental Health Sciences, Environmental Protection Agency, Centers for Disease Control and Prevention, National Science Foundation, Department of Energy, National Oceanic and Atmospheric Administration and other relevant agencies to allow our nation's top researchers to both strategize about and combat our nation's and the world's plastics pollution problem.

Plastic is a versatile material that provides for a multitude of uses across many industries and aspects of modern society. However, we need to acknowledge and address the 'end of life' challenges that exist with plastic products and packaging, and prioritize the scientific research and actionable information needed to inform policy solutions. We recommend that departments and agencies across the federal government develop a coordinated interagency research and response plan to address this growing problem. By taking immediate action now, the United States can make progress toward mitigating this threat to the health and well-being of all Americans.

Thank you for your consideration of this request.

Respectfully,



Tom Udall
United States Senate



Alan Lowenthal
Member of Congress