

March 17, 2025

Dear Members of the House Committee on Environment and Natural Resources,

My name is Victoria Fulfer and I live in Narragansett. I am a microplastics researcher with Pollution Solutions and Analytics, LLC and a postdoctoral fellow at the University of Rhode Island. I am writing to you today about bill H5492, which is a bill that creates the Microplastics Reduction Act to prohibit the sale or distribution of products containing synthetic polymer micro particles.

I support Bill H5492 because my work as a microplastic scientist has shown that microplastic pollution is a widespread problem here in Rhode Island, one that has been increasing over the most recent decades. For this problem to be reduced, action must be taken at the state government level.

Products containing intentionally added microplastics are polluting our water and environment daily. Intentionally added microplastics, or microbeads, can include exfoliants or scrubbing agents found in hundreds of personal care products, such as soap, facial scrubs, body washes, hand sanitizers, mascara, foundation, face powder, lipstick and lip glosses, and toothpastes. Microbeads are also found in certain brands of cleaning supplies, paint products, and more¹⁻³. These particles are made of synthetic plastic polymers, which are non-biodegradable and can remain in the environment for decades or longer without breaking down. When cosmetics containing microbeads are washed off, the microbeads enter the wastewater stream. Although some microbeads are captured during treatment, many wastewater treatment plants cannot remove microplastics < 0.5 mm in size from water⁴. This leads to their release into aquatic habitats. For example, it is estimated that over 55 million microplastics, including microbeads, are released daily from wastewater treatment plants into San Francisco Bay⁵. Sewage sludge, which can contain these microplastics, is used as fertilizer, further polluting the terrestrial environment⁶.

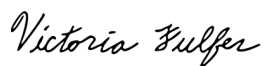
These particles are detrimental to ecosystems and human health. Once in the environment, microplastics can be ingested by fish and other animals, translocate between tissue within their bodies, and continue along the food chain⁷⁻¹⁰. Microplastics can remain in the environment for decades, continually accumulating toxins such as persistent organic pollutants (POPs), like PFAS. These toxins can bioaccumulate within the fish that ingest microbeads, making their way through the food chain and potentially impacting ecosystem and human health^{11,12}. Once microplastics have entered the food chain, they could pose a risk to humans unknowingly ingesting contaminated seafood. Microplastics have been found in the edible tissue of many species caught off the coast of the U.S., including shrimp, herring, salmon, and rockfish¹³. Studies have not only identified microplastics in humans, including kidneys, liver, brain, and placenta, but have also shown negative impacts of microplastics exposure such as oxidative stress and inflammatory response^{14,15}.

This bill would also require the development of a microplastics testing plan. This is incredibly important for the state of Rhode Island to begin working on as soon as possible. Laboratories across the state are now capable of testing for microplastics in seawater, freshwater, soil,

sediment, and more. While there is not one singular method used worldwide for identification of microplastics, methods have become robust enough that this testing is now possible, and more cost-effective than ever. The state of California has developed working groups to help facilitate the state-wide testing for microplastics, and Rhode Island should be doing the same. Without testing, we will not know if the microplastic problem is getting worse, or if implemented solutions are helping to reduce microplastic pollution. Testing would allow the state to know which types of microplastics are most common, which would allow more targeted policies to be put in place.

Microplastic particles are nearly impossible to clean up once they enter into the natural environment, due to their small size. The only way to reduce their prevalence in the environment is to ban them in Rhode Island. We, as the Ocean State, should be leading the way countrywide on the plastic reduction front.

Thank you,



Dr. Victoria Fulfer
Microplastics Scientist
Pollution Solutions and Analytics, LLC

Postdoctoral Fellow
University of Rhode Island

Citations:

1. Guerranti C, Martellini T, Perra G, et al. (2019) Microplastics in cosmetics: Environmental issues and needs for global bans. *Environ. Toxicol. Pharmacol.* 2019 May;68:75–79. 10.1016/j.etap.2019.03.007
2. Faber, M., Marinković, M., de Valk, E., & Waaijers-van der Loop, S. L. (2021). Paints and microplastics. Exploring the possibilities to reduce the use and release of microplastics from paints. Feedback from the paint sector.
3. IE Environmental Protection Agency. (2025). Microbeads. Retrieved from <https://www.epa.ie/our-services/compliance--enforcement/whats-happening/microbeads/>.
4. Martin, C. and Eizhvertina, O. (2014). Quantitative Analysis of Microplastics in WWTP Effluent in the Niagara Region, Technical Report published for Niagara College Environmental Technician—Field and Lab (co-op): Final Term Project, 2014; Niagara College Canada: Niagara-on-the-Lake, Canada.
5. Sutton, R; Lin, D; Sedlak, M; Box, C; Gilbreath, A; Holleman, R; Miller, E; Wong, A; Munno, K; Zhu, X; et al. (2019). Understanding Microplastic Levels, Pathways, and Transport in the San Francisco Bay Region. SFEI Contribution No. 950. San Francisco Bay Regional Monitoring Program for Water Quality: Richmond, CA.
6. Hechmi, S., Bhat, M. A., Kallel, A., Khiari, O., Louati, Z., Khelil, M. N., ... & Jedidi, N. (2024). Soil contamination with microplastics (MPs) from treated wastewater and sewage sludge: risks and sustainable mitigation strategies. *Discover Environment*, 2(1), 95.
7. Batel, A., Linti, F., Scherer, M., Erdinger, L., & Braunbeck, T. (2016). Transfer of benzo [a] pyrene from microplastics to *Artemia nauplii* and further to zebrafish via a trophic food web experiment: CYP1A induction and visual tracking of persistent organic pollutants. *Environmental toxicology and chemistry*, 35(7), 1656-1666.
8. Gray, A. D., & Weinstein, J. E. (2017). Size-and shape-dependent effects of microplastic particles on adult daggerblade grass shrimp (*Palaemonetes pugio*). *Environmental toxicology and chemistry*, 36(11), 3074-3080.

9. Bour, A., Hossain, S., Taylor, M., Sumner, M., & Carney Almroth, B. (2020). Synthetic microfiber and microbead exposure and retention time in model aquatic species under different exposure scenarios. *Frontiers in Environmental Science*, 8, 83.
10. Wang, Y., Baynes, A., Renner, K. O., Zhang, M., Scrimshaw, M. D., & Routledge, E. J. (2022). Uptake, elimination and effects of cosmetic microbeads on the freshwater gastropod *Biomphalaria glabrata*. *Toxics*, 10(2), 87.
11. Wardrop, P. *et al.* (2016). Chemical Pollutants Sorbed to Ingested Microbeads from Personal Care Products Accumulate in Fish. *Environ. Sci. Technol.* 50, 4037–4044.
12. Yu, Y., Ma, R., Qu, H., Zuo, Y., Yu, Z., Hu, G., ... & Yu, G. (2020). Enhanced adsorption of tetrabromobisphenol a (TBBPA) on cosmetic-derived plastic microbeads and combined effects on zebrafish. *Chemosphere*, 248, 126067.
13. Traylor, S. D., Granek, E. F., Duncan, M., & Brander, S. M. (2024). From the ocean to our kitchen table: anthropogenic particles in the edible tissue of US West Coast seafood species. *Frontiers in Toxicology*, 6, 1469995.
14. Hirt N, Body-Malapel M. (2020). Immunotoxicity and intestinal effects of nano- and microplastics: a review of the literature. Part. Fibre Toxicol. 17(1):57. 10.1186/s12989-020-00387-7
15. Landrigan, P. J., Raps, H., Cropper, M., Bald, C., Brunner, M., Canonizado, E. M., ... & Dunlop, S. (2023). The Minderoo-Monaco Commission on plastics and human health. *Annals of Global Health*, 89(1).