

January 30, 2023

RE: SUPPORT for Senate Bill 405

Dear Committee Members,

We are writing to express our strong support for SB 405, which would significantly reduce the flow of microfibers into our environment and ocean.

Scientists have recently estimated that 5.6 million metric tons (MMT) of synthetic microfibers were emitted from washing machines between 1950 and 2016 – approximately half were emitted just during the last decade!¹ While it is well-known that our oceans and waterways receive much of these microfibers (2.9 MMT), the combined emissions to terrestrial environments (2.5 MMT) are almost as large and are projected to increase.¹ It has been estimated that of all microplastic pollution in our ocean, 34.8% is attributable to synthetic textiles from laundering.²

In Oregon, microplastics have been found throughout our inland waterways and coastal ecosystems, and Ocean Conservancy scientists have been involved in studying microfibers firsthand. Ocean Conservancy's Associate Director of Ocean Plastics and Research, Britta Baechler, conducted her Ph.D. research at Portland State University, examining the prevalence of microplastics found in Oregon-harvested Pacific oysters and Pacific razor clams-species that are of commercial, recreational, and cultural importance in the state. Her research found, on average, nearly 11 microplastic particles in each oyster, over 99% of which were microfibers.³ Dr. Baechler's research supports a growing body of evidence that microfibers are the most prevalent type of microplastic found in environmental samples and most commonly consumed by marine fishes, crustaceans, and bivalves – often representing more than 90% of plastics ingested.⁴

We now know that microfibers are consumed by us humans, as they have been found in human placentas, lung tissues, digestive tracts and waste.⁵ Human-consumed seafoods, fruits and vegetables, honey, salt and beverages such as water, milk and beer have all been found to contain microfibers.

¹ Gavingan et al., [Synthetic microfiber emissions to land rival those to waterbodies and are growing](#), PLOS ONE, 2020.

² Boucher, K. and Friot, D. [Primary microplastics in the oceans: a global evaluation of sources](#), IUCN, 2017.

³ Baechler, B.R., et al. [Microplastic concentrations in two Oregon bivalve species: Spatial, temporal, and species variability](#), Limnology and Oceanography Letters, 2019.

⁴ Mizraji et al., [Is the feeding type related with the content of microplastics in intertidal fish gut?](#), Marine Pollution Bulletin, 2017.

⁵ Ramasamy, R et al., [Synthetic textile and microfiber pollution: a review on mitigation strategies](#), Environmental Science and Pollution Research, 2021.

Recent research indicates that human exposure to microfibers may be correlated with adverse health issues including inflammatory bowel disease.⁶

Domestic laundry is one of the major sources of microfiber releases; thus, effective prevention of this form of pollution starts with the washing machine. Fortunately, filtration technology already exists which is capable of effectively capturing nearly 90% of these microfibers before they can escape and become pollution.⁷ These filters have already been built directly into washing machines,⁸ clearly demonstrating that there are no technical limitations to expanding the use of these filters.

Importantly, these filters are incredibly effective at reducing microfiber pollution to the environment. A recent study investigated the impacts at scale of installing filters in just 10% of households in a small community and found an over 40% decrease in microfibers in the final treated effluent.⁹ These filters prevented over 6 grams of microfibers from entering wastewater every week from each participating household- which, if extrapolated over the span of a year, would equal 14 billion microfibers captured. If we were to scale up these results to the city of Los Angeles, with about 3.3 million households and filters installed in every household, we could prevent up to 468 trillion microfibers from entering wastewater every single year.

The science is clear – for the sake of our environment and for our own health, we must take immediate action to address microfiber pollution. That is why we are urging your support of SB 405, which if passed, would significantly reduce microfibers, and in turn, the total amount of microplastics flowing into the environment and reaching our ocean.

Sincerely,



Britta Baechler, Ph.D.
Associate Director, Ocean Plastics Research
Ocean Conservancy



Anja Brandon, Ph.D.
Associate Director, U.S. Plastics Policy
Ocean Conservancy

⁶ Yan et al., [Analysis of Microplastics in Human Feces Reveals a Correlation between Fecal Microplastics and Inflammatory Bowel Disease Status](#). *Ecotoxicology and Public Health*, 2022.

⁷ McIlwraith et al., [Capturing microfibers – marketed technologies reduce microfiber emissions from washing machines](#), *Marine Pollution Bulletin*, 2019.

⁸ Grundig [FiberCatcher®](#)

⁹ Erdle et al., [Washing machine filters reduce microfiber emissions: evidence from a community-scale pilot in Parry Sound, Ontario](#), *Frontiers in Marine Science*, 2021.