

# Identifying Microplastics in the Pacific Northwest

Authors: **Preston Smith**, Julie Masura\*

Plastic usage is now an everyday part of life, and its usage is hugely prevalent around the world. With constant usage of plastics, microplastics are formed, microplastics are polymers less than 5 mm in length. With microplastics being so prevalent within the environment, they are now found in water, soil sediments, beaches and virtually everywhere around the world. This is problematic due to microplastic toxicity to many different organisms. This research is aimed to determine, how much microplastic pollution is in the Pacific Northwest, and what types of microplastics are commonly found in it. This research creates awareness of microplastics within the environment, and the potential detrimental effects that microplastics can cause. Samples were taken directly from 12 locations throughout the Pacific Northwest and were processed in lab through a combination of isolation techniques to progressively break down organic materials and further segregate microplastics. Brightfield microscopy was used to analyze the samples and sorted them based on material type, color, and size. Fibers were found to be the most common type of microplastic at 75% of the total microplastics collected, followed by fragments with 17% total. The average length of all microplastics collected was 2.51 mm, and white microplastics were found to be the most common color of microplastic. This research serves as a gauge to see how prevalent microplastics are within the Pacific Northwest's waterways. This will be used to inform new guidelines on the use of plastic in the Pacific Northwest.