Assessing Microplastic Pervasiveness in Bark

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A microplastic is a plastic that is the size of 5 millimeters or less. They are pervasive pollutants that are being identified in the environments and organisms throughout the world, however, the majority of studies focus on aquatic environments. There are few studies providing data on microplastic concentrations in terrestrial environments. The purpose of this project is to determine whether microplastics are present on the outside of the tree bark and if so, have they infiltrated the root pores of various trees and made their way into the tree's circulatory system? And, if so, what are the proportions of microplastics on the outside of the bark in comparison to the inside of the bark. I collected bark samples from local trees and snow samples from the base of those trees. I then separated the outer bark from the wood on the inside of the sample and filtered these and the 'snowmelt through a vacuum filtration system to isolate the microplastic contaminants. Microplastics were noted in all of the samples that were collected with a higher amount being noted in the snow samples compared to the bark samples. Similar quantities were noted in the inside and outside of five different tree arks. The inside and outside of the bark samples were not statistically significant implying that the same amount of microplastics was infiltrating the inside of the tree as adhering to the outside of the tree. My microplastic count helped me conclude4 that microplastics are present in both internal and external tree tissue.

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