

Plastic pollution is an emerging contaminate and is increasingly accumulating in ecosystems throughout the world. This material is known to harm organisms from lower trophic levels, i.e. worms, to higher trophic levels i.e. orcas. Microplastics are defined as manufactured polymers or degraded plastic that are less than 5 mm in length. Previous findings imply that microplastics tend to increase in proximity to urban areas. In the summer of 2024, a team of fifteen students from the University of Washington Tacoma analyzed sediments provided by research partners from the Department of Ecology's Marine Sediment Monitoring Team to determine microplastic presence and concentration in the bed sediment of Bellingham Bay, an urban bay in north Puget Sound. In the lab, sediments were processed through a series of sieving, density separation, and wet peroxide oxidation. Samples were analyzed using a dissecting microscope, sorted, and placed into a vial recording the type of plastic (pellet, fiber, and film) and color. We concluded that 92.1% of total plastics were fibers, while 7.9% were either films or pellets. The microplastics were mostly clear (67.7%), we also found microplastics of many varying colors. An abundance of microplastics were towards the middle of the bay rather than near the coast, hypothesizing that water movement near land had higher energy than in the middle of the bay allowing for the microplastic to settle to the bottom. With an increase of microplastic exposure to marine life, we can predict future potential health risks concerning accumulating microplastic concentrations inside our bodies.