# Small Plastics Causing a Big Problem: The Prevalence of Micro- and Macro- Plastics on Oahu Beaches

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Plastic pollution is a global issue threatening the health of marine and land ecosystems. Smaller "microplastics" (<5mm) are particularly problematic as they can be consumed by marine creatures as small as plankton and passed up the food chain. Plastics can also act as vectors to transfer pollutants they sorb in the ocean to the animals that consume them because they are hydrophobic. By eating affected animals, humans could be impacted. Studies of microplastics in sediments can help to estimate the prevalence of plastic in our oceans and impact of plastic pollution on a certain area's microbial communities. Here on Oahu, sampling of beach sediments across the island has never been completed in the same time frame using a uniform methodology. This study sampled sediments from four beaches in December of 2017 and eight in January of 2018 and used density separation and manual sorting to separate plastic from natural material. Plastics were then counted and their sizes, colors, and types were recorded to see the effects of photodegradation and the distribution of different plastic types and sizes. Both microplastics (3-5 mm) and macroplastics (=5 mm) were collected, and of the two, macroplastics were more prevalent (944 vs. 2,951). As for the color and type distribution, the most prevalent colors were white and blue (2,524 and 468 respectively), and most plastics were fragments (95%). Overall, 3,895 plastics were found, and the most plastics were found on the East Shore (78.59%) and North Shore (20.98%).♀

**Awards Won:**