

191-7 - Booth No. 145: MACRO AND MICROPLASTICS AT ROCKY POINT AND CORAL GARDENS BELIZE: SPATIAL DISTRIBUTION AND ABUNDANCE



Tuesday, September 24, 2024



8:00 AM - 5:30 PM



Hall D (Anaheim Convention Center)

Booth No. 145

Abstract

A fast-growing body of research shows that microplastics can now be found everywhere on the planet; in water, air, sediment, and within our own bodies. It seems intuitive, and some studies have shown, that microplastics are more abundant adjacent to urban or high population centers as opposed to non-urban areas. Primary microplastics include tiny particles designed for commercial or cosmetic use and secondary microplastics are derived from the breakdown of macroplastics. Our study aims to characterize the distribution of microplastics adjacent to an obvious repository for macroplastics in a non-populated coastal zone on North Ambergris Caye, Belize and a patch reef system farther from shore in South Ambergris. We investigated microplastic occurrence in sediments onshore at Rocky Point in the macroplastic zone, out into the patch reef zone, and behind the reef crest to see if microplastics were equally distributed from shore to crest or whether microplastics were concentrated near the macroplastic source area. Twenty sediment samples were collected along a ~90 m shoreline-parallel transect of Rocky Point beach at 4.5 m intervals to a depth of approximately 5 cm. A general inventory of macroplastics was recorded, and 24 square meter quadrats were photographed and visually documented for macroplastic characterization along the transect. Sediment samples were also collected along a transect perpendicular to the beach, in water that ranged from ~10 cm to less than 2 m water depth to investigate whether microplastics increased proximal to the macroplastic accumulation zone. We collected water samples with 363 μ m and 180 μ m mesh plankton nets by casting and dragging nets ~6 m lengths between 10 and 20 times and additional 2-minute timed drags by boat, as well as single dip samples for calibration. Macroalgae was also collected from coral rubble at several sites and examined to determine whether algae trap or bind microplastics from the water. Water, macroalgae, and sediment samples were also collected from a reef site ~5 km off southern Ambergris Caye for comparison. The results of microplastic characterization will be described.

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