



**DETECTION AND QUANTIFICATION OF MICROPLASTICS  
INGESTED BY FISHES IN THE ESTUARY OF ZAPOTE  
GOING TO MANILA BAY**

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### ABSTRACT

Microplastics are described as any plastic with a diameter less than five millimeters. Microplastic debris is a prevalent pollutant present in aquatic systems over the globe. A scope of aquatic organisms has the ability to ingest microplastics, resulting to adverse health effects. This study detected and quantified the presence of microplastics in the estuary of Zapote River going to Manila Bay. Water and fish samples were collected from three stations namely Sinaguayan in Bacoor, mouth of Zapote River and Manila Bay. Fish samples were subjected to gastrointestinal tract extraction; thus observed under a dissecting microscope. Low occurrences of microplastics were observed in both water and fish samples. A total of twenty six microplastics in water and thirty two microplastics in fish samples were detected. Manila Bay was most prevalent in microplastic contamination. It was proven that its surrounding environment is the primary source of contamination due to the presence of single-sachet packs. Furthermore, two-fish species were identified namely, *Oreochromis niloticus* and *Anodontostoma chacunda*. *Oreochromis niloticus* had more microplastics ingested compared to *Anodontostoma chacunda*. Feeding habits of these fish species can be attributed to the ingestion of microplastics. As a result, it is an emerging environmental concern due to the ability of microplastics to affect the trophic level of transfer through bioaccumulation and biomagnification.

Keywords: *Oreochromis niloticus*, *Anodontostoma chacunda*, microplastics



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