

## Can Microplastic become a Major Environment Threat: A Review

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### Abstract

Plastic which was manufactured as a form of paint three decades earlier has become an indestructible part of our lifestyle. The aim of the paper is to analyse various research done in micro-plastics and their probable impact in the food chain and also, to identify the research gaps and to suggest an approach for further studies. The paper includes analysis of micro-plastic in marine as well as freshwater environment; identify traces of micro-plastic in alimentary canal or tissues of marine organisms. To identify micro-plastics is a difficult task and hence some common approach is discussed in this paper.

**Keywords-** Micro-Plastic, Marine Litter, Plastic Debris,

### 1.INTRODUCTION

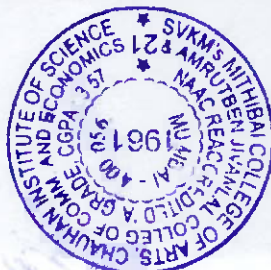
(Eo, S et al., 2018) mentioned in that Plastic is a synthetic organic polymer which is manufactured into a variety of inexpensive and versatile items, and 0.3 billion tons were produced globally as of 2010. Approximately 10 % of worldwide plastic production reaches the marine environment, and 60–80 % of marine debris is composed of plastics. This plastic debris can be broken down to tiny particles smaller than a few millimetres through weathering processes such as physical, chemical, and biological degradation in marine environments. The weathered particles are categorized as “micro-plastics” together with primary plastic particles manufactured at micro size dimensions.

This plastic debris then become part of the marine litter. The amount of anthropogenic litter in aquatic and terrestrial environments has increased dramatically over the last few decades; approximately 60-80% of which is plastic. Mass production of plastics began in the 1950s, and currently exceeds 280 million tonnes globally. It is estimated that 4.8 to 12.7 million metric tons of mismanaged plastic waste enters the oceans from coastal countries each year. (Akdogan et al., 2019). Plastic litter is a global problem that

has a variety of environmental, social, aesthetic and economic impacts. In the marine environment, floating, deposited and beached plastics pose risks to marine wildlife, principally through entanglement and ingestion. (Massos, A. et al., 2017) By investigating floating debris at a large regional scale, using a deployed boom network, this study is one of the first to deliver reliable information on the quantity and quality of floating plastic debris conveyed by rivers in urban areas. (Gasperi, J. et al., 2014)

With similar sizes and appearances to natural food items, these small fragments pose potential risks to many marine organisms including zooplankton and zooplanktivores. Semi-enclosed seas are reported to have high concentrations of micro-plastics. (Di Mauro et al., 2017) The particle size range of 50–300  $\mu$ m, the most abundant among size categories investigated (particularly for paint particles), is equivalent to those of living micro-plankton (20–200  $\mu$ m). Nano-sized to micro-sized plastics can be mistaken as prey by various pelagic and benthic marine organisms including copepods, amphipods, and mussels. It is particularly worth noting that copepods have non-selective feeding for nano-sized to micro-sized particles, and copepodites and nauplii chronically exposed to plastics

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