



## A REVIEW

# Microplastics and biodiversity: A comprehensive analysis of their ecological impact

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**Abstract :** Microplastics, defined as plastic particles less than 5mm in diameter, have become a pervasive environmental contaminant with significant repercussions for biodiversity and ecosystem health. This review examines the impact of microplastics across marine, freshwater, and terrestrial ecosystems, highlighting their effects on animals, plants, and other forms of biodiversity. The ingestion of microplastics by a diverse range of organisms, from plankton to terrestrial wildlife, poses physical and chemical threats, including digestive blockages, toxicity from adsorbed pollutants, and altered behavior. Microplastics also impact soil structure, water retention, and microbial communities, affecting plant growth and soil fertility. Furthermore, the review explores the complex interactions and cascading effects of microplastic pollution, emphasizing the need for comprehensive remediation strategies and regulatory policies to mitigate their environmental impact.

**Key Words :** Microplastics, Biodiversity, Environmental pollution, Ecosystem health, Remediation strategies

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