

Title: Microplastics in the coral ecosystems: A threat which needs more global attention

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Abstract: Microplastics (MPs) are one of the leading pollutants on the earth's surface and are found almost everywhere, including in aquatic environments. Microplastic pollution (MPP) on the oceanic surface is causing widespread concern among scientists and researchers worldwide due to its life-threatening impact on underwater living organisms. Excessive production of MP components and unscientific disposal caused severe issues for the marine ecosystem. Invertebrate corals and coral reefs in tropical and sub-tropical countries have suffered immensely from MP pollution and have shown a gradually decreasing trend of coral reef concentration on the oceanic surface. The bioaccumulation and ingestion of MP debris by the coral polyps have hindered the growth of the corals and forced coral bleaching. Most of the previous studies on MP have focused on the sources and distribution of MP. However, little is known about coral bleaching and its adverse impacts on the coral ecosystem. Therefore, the present review focuses on identifying sources, their global distribution, and the adverse effects of MP on the marine ecosystem, with particular reference to corals and coral reef ecosystems. The current study's findings highlighted that only a few countries and a few researchers worldwide have worked with MP pollution and its life-threatening impact on coral ecosystems. Earlier researchers showed fish communities' vulnerability to MPP in the aquatic environment. Hence, the present work recommends researching MPP and the worldwide threats to coral ecosystems. Apart from this, the production of MP should be minimized after the identification of MP sources, regular monitoring of aquatic ecosystems, recycling of MP elements, and strict government policies to slow down the dreadful impact of MP on coral reef ecosystems and marine environments.

Keywords: Microplastics (MPs), Microplastic pollution (MPP), Coral reefs, Coral bleaching, Marine ecosystem, Bioaccumulation, Global distribution

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