Distribution and Characteristics of microplastics in different matrices in Jiaozhou Bay, China

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Under the multiple stressors of global climate change and extensive human activities, costal ecosystems are under major threats. Degradation of marine ecosystems will lead to pronounced impacts on their functions. The sustainable development of coastal areas faces serious challenges. Microplastic contamination is a growing threat to marine environment and biota, and represent a great risk for marine ecosystems, society and human health. To help design effective plastic reduction and mitigation strategies, cognition of distribution and characteristics of plastic pollution in multiple matrices are required. We took Jiaozhou Bay as a typical area in coast of China, revealed distribution and characteristics of microplastics in multiple matrices, and the emission characteristics of microplastic sources. An index MCI (microplastic complexity index) was used that is to reflect the contrast of microplastics complexity in different matrices. It can be used for quantitative analysis of microplastic traceability process. and provides new ideas for source apportionment and ecological assessment of microplastics. Quantitative source apportionment is continuing to further promote the accomplishment of goal 14.1 in SDGs and decision support.