Title:	Distribution and quantification of microplastics and phthalates identification in freshwater system in Indian subcontinent
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Abstract:	A little evidence is available about the prevalence and features of microplastics (MPs) and related organic contaminants like phthalates (PAEs). The objective of this research is to investigate the presence of a particular group of pollutants in freshwater environments. Specifically, this study focuses on examining the distribution and concentration levels of microplastics (MPs) and identifying phthalate esters (PAEs) in Sukhna Lake, which is a freshwater urban lake located in North India. The results of the study reveal that MPs were detected in all the water samples, with concentrations ranging from 5 to 75 particles per liter, while sediment samples showed concentrations ranging from 170 to 2320 particles per kilogram. Polyethylene polymers were found to dominate most of the MPs extracted from water and sediment samples along with polypropylene. These polymers were identified in Pellet granule beads and fibers isolated from the samples. The MPs distribution differed throughout the lake, with more being in the area with high tourism and domestic sewage effluents. PAEs identified from the lake sediments were diethyl phthalate (DEP), dibutyl phthalate (DBP) and Bis (2 – ethylhexyl) phthalates. The results of this study stress the need for appropriate waste management practices in the area to lessen the amount of pollutants entering the ecosystem. Additionally, this work advances our knowledge of the potential profiles and sources of MPs and PAEs pollution in freshwater settings and offers important data for upcoming management decisions.
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