Title:	Distribution and characteristics of microplastics and phthalate esters from a freshwater lake system in Lesser Himalayas
Authors:	Kumar, Ajay (/jspui/browse?type=author&value=Kumar%2C+Ajay) Bhattacharya, Sharmilaa (/jspui/browse?type=author&value=Bhattacharya%2C+Sharmilaa) Behera, Diptimayeea (/jspui/browse?type=author&value=Behera%2C+Diptimayeea) Mishra, Praveen K. (/jspui/browse?type=author&value=Mishra%2C+Praveen+K.) Yadav, Ankit (/jspui/browse?type=author&value=Yadav%2C+Ankit) Anoop, Ambili (/jspui/browse?type=author&value=Anoop%2C+Ambili)
Keywords:	Microplastics Phthalates Lake sediments Aquatic system Indian Himalaya
Issue Date:	2021
Publisher:	Elsevier
Citation:	Chemosphere, 283, 131-132.
Abstract:	The occurrence, distribution, characterization and quantification of microplastics (MPs) and phthalic acid esters (PAEs) from the freshwater aquatic environment are not thoroughly explored in the Indian Himalayas despite concern over their adverse effects on human health and ecosystem. In this study, we have investigated the presence of MPs and PAEs in an aquatic system from Indian subcontinent. The MPs were detected in all water and sediment samples with abundances ranging from 02–64 particles/L and 15–632 particles/kg dw, respectively. The abundance of MPs, dominated by polyethylene and polystyrene, with the majority being fibres and fragments indicated that they were derived from plastic paints, boats or synthetic products. The concentrations of PAEs in the surface sediment samples varied from 06-357 ng/g dw. The most abundant PAEs in the sediments were dibutyl phthalate (DBP) and di(2-ethylhexyl) phthalate (DEHP), since they were present in all the samples collected from the lake basin. The relatively higher abundances of MPs and higher concentrations of PAEs were generally found in the vicinity of areas impacted by anthropogenic activities. A clear correlation between the abundance of microplastics and PAEs concentration was observed suggesting that they are closely attributed to a single source. This study also provides an alternative approach to utilize the chemical additives in plastics as markers to trace the presence and distribution of MPs in the aquatic environment.
Description:	Only IISERM authors are available in the record
URI:	https://www.sciencedirect.com/science/article/pii/S0045653521016040?via%3Dihub (https://www.sciencedirect.com/science/article/pii/S0045653521016040?via%3Dihub) http://hdl.handle.net/123456789/4785 (http://hdl.handle.net/123456789/4785)
Appears in Collections:	Research Articles (/jspui/handle/123456789/9)

Files in This Item:

File	Description	Size	Format

Need To Add…Full Text_PDF (/jspui/bitstream/123456789/4785/1/Need%20To%20Add%e2%80%a6Full%20Text_PDF)	15.36 kB	Unknown	View/Open (/jspui/b

Show full item record (/jspui/handle/123456789/4785?mode=full)

(/jspui/handle/123456789/4785/statistics)