

# Analysis by NGO reveals microplastics in Ganga

## They are a source of marine pollution

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An analysis of the stretches of the river Ganga by a Delhi-based environment NGO, Toxics Link, has revealed pollution by microplastics, defined as synthetic solid particles sized ranging from 1 micrometre to 5 millimetre (mm), which are insoluble in water.

The Ganga flows across five States and has been at the centre of a massive multi-crore undertaking by the Union government, in the form of the National Mission for Clean Ganga, to rid it off contamination.

Microplastics are recognised as a major source of marine pollution. Untreated sewage from many cities along the river's course, industrial waste and religious offerings wrapped in non-degradable plastics pile pollutants into the river as it flows through several densely populated cities. The plastic products and waste materials released or dumped in the river break down and are eventually broken down into microparticles. The river finally transports significantly large quantities downstream into the ocean, which is the ultimate sink of all plastics being used by humans.

"Essentially, all along microplastics are flowing into the river system. It does reflect or suggest a direct linkage between the poor state of both solid and liquid waste management; hence it is critically important to initiate steps to remediate it," Priti Mahesh, chief coor-

dinator at Toxics Link, said in a statement.

The study, 'Quantitative analysis of Microplastics along River Ganga', was based on an analysis of water samples at Haridwar, Kanpur and Varanasi.

The highest concentration of such plastic was found at Varanasi, comprising single-use and secondary plastic products. The water testing was carried out in collaboration with the National Institute of Oceanography (NIO) in Goa. The samples were tested to identify the exact type or resin core and the results show the presence of at least 40 different kinds of polymers as microplastics.

The shapes and nature of the observed resins ranged from fibres to fragments, films and beads. Fragments were the predominant shape in all locations, followed by film and fibre.

Microbeads were observed in Varanasi and Kanpur, while no beads were found in Haridwar. "The most frequent size range observed in all the samples was <300 micrometre," said Dr. Mahua Saha, the lead researcher from NIO.

"We need to address the threat of plastic on aquatic life more realistically and with a futuristic eye. Various stakeholders, including industries, governments and civil society organisations, need to join hands for improving plastic waste management and the reduction in microplastic pollution," said Satish Sinha, associate director at Toxics Link.