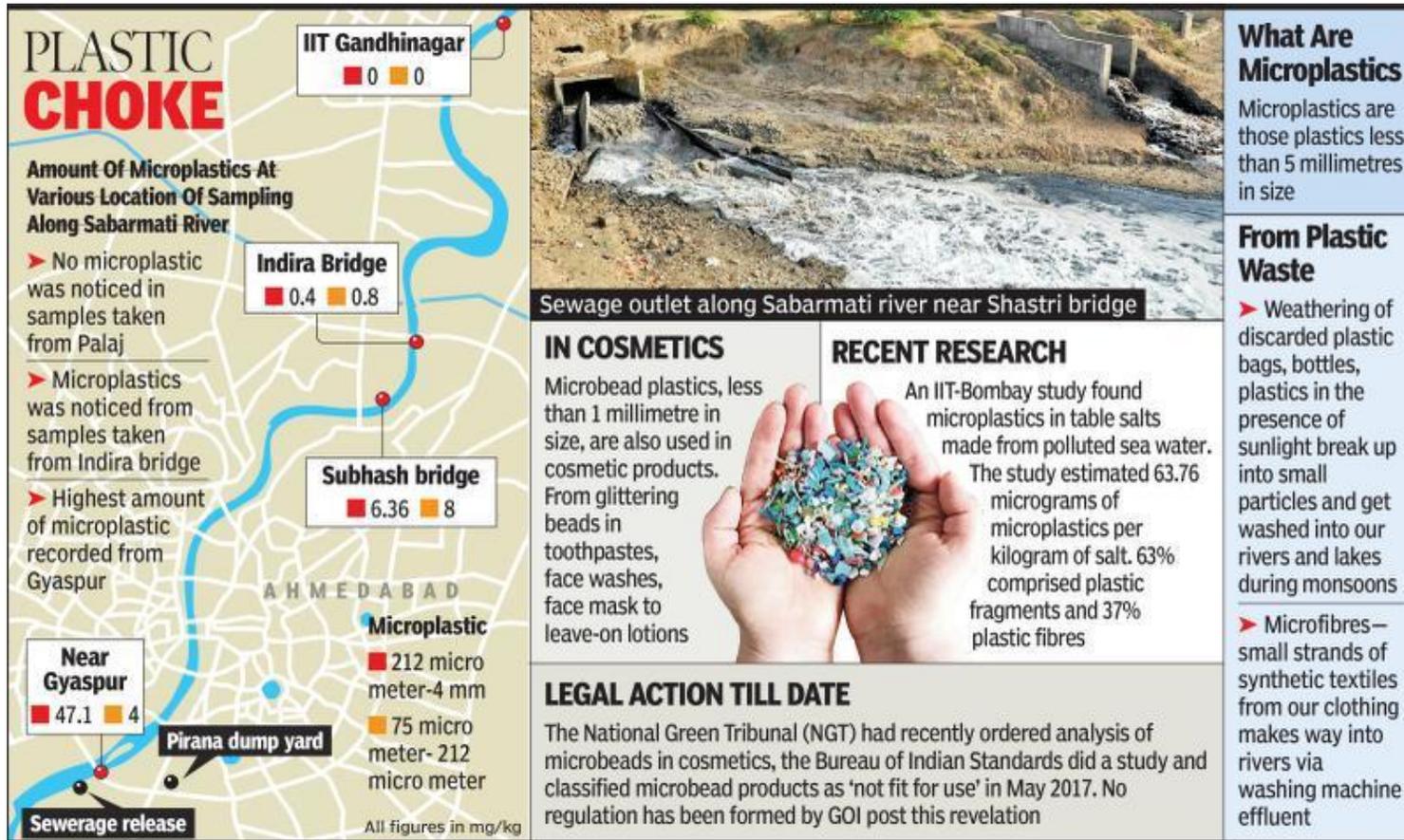


Invisible microplastics polluting Sabarmati

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AHMEDABAD: Here is a bigger demon that is contaminating our river waters. These are microplastics and they have been detected in the Sabarmati river. Not visible to the naked eye, these toxic particles are yet to be acknowledged in our river pollution mitigation policies.



These plastic particles are so small that they pass through waste treatment plants and now threaten to pollute Gujarat's surface river water drinking sources.

In this first-ever study in the state conducted by Discipline of Earth Sciences of IIT-Gandhinagar on microplastics in the riverine systems, researchers isolated two groups of microplastic — small and large with size ranging 75 micrometres (μm) to 212 μm and 212 μm to 4 millimetres (mm), respectively — from the Sabarmati river sediments. A micrometre is a millionth of a meter.

The most startling fact was that microplastics begin showing up in the Sabarmati waters when they pass through Ahmedabad city, the highest amount of microplastic was detected when the river passed the Pirana dump and sewerage discharge point near it. The team found 47.1 milligrams of microplastics of large category and 4 grams consisting small group of microplastic at

Pirana-Gyaspur banks. The findings have been presented at the sixth international symposium on advances in civil and environmental engineering practices for sustainable development' in Sri Lanka.

Professor Manish Kumar of IIT-Gn's Earth Sciences Discipline led as principal investigator in the microplastic study which was funded by the Asia Pacific Network (APN). He says that common sources of microplastics present in a given urban setup like Ahmedabad are improper waste disposal, insufficient waste management, urban runoffs and washing machine effluent.

A US-based research has found that a single polyester fleece jacket can release more than 1,900 plastic fibres per wash. Plastic microbeads are used in toothpastes, shampoos and shower gels.

Larger plastic debris that degrades into smaller and smaller pieces while exposed to sun also adds to microplastic generation. He further adds, "As microplastics are almost impossible to get removed by primary or secondary treatment plants owing to their small size and buoyancy, they become critical from the safe water supply perspective."

The study reported that the downstream sampling point of Sabarmati river in Ahmedabad near Pirana dumping site adds a huge quantity of microplastics through runoff especially during wet weather.

The research was led by Prof Kumar and his students Arbind Kumar Patel, Anant Agarwal, Bhagwana Ram and Rahul Upadhyay. The first detection of microplastics in Gujarat was measured in Alang-Sosiya ship-breaking yard.