Plastic waste is climbing up the marine food chain

File photo of an event to raise awareness about micro pollution. | Photo Credit: Alexander Nolte

A new study of the faeces of captive seals has shown that microplastics can travel high up the food chain and affect even the large predators of the oceans.

Microplastics are ingested directly by the zooplankton -- the lowest link in the food chain. The zooplankton is eaten by fish; and the microplastic finally reaches the seal, which consumes the fish.

Plastic pieces that are less than 5mm in length are called microplastics. They can be formed by fragmentation of large plastic waste material. Microfibres from washing of textiles, microbeads used in cosmetics, and even paint from land run-offs can dump microplastics in the ocean.

Various studies have shown that once ingested, microplastics can settle in the stomach and lead to reduction in feeding capacity of organisms. They can also be detrimental to the intestinal function and reproductive system.

The new study published in *Environmental Pollution* showed the transfer of microplastics across different levels in the food chain.

The researchers studied the microplastics in the digestive tract of Atlantic mackerel and later examined the faeces of captive grey seals that feed on the fish. They found that approximately half of the faeces samples and a third of the fish samples contained different types of microplastics. They also tested the pool water to make sure that the plastic in the seal poop was not caused by any other sources.

A total of 12 different polymers were found from the fish and seal, ranging from 0.5 to 6 mm in length. Ethylene propylene(used in paints, coatings, inks) was the most frequently found polymer followed by polypropylene(in bags and textiles).

“Our finding that microplastics can be passed from fish to marine top predators is something we’ve long thought was the case but, until now, lacked the evidence to back our theory up. We have shown that trophic transfer is an indirect, yet potentially major, route of microplastic ingestion for these predators,” says Sarah Nelms first author of the paper from a Plymouth Marine Laboratory in a release.

The report says that further work needs to be carried out to understand the impact of microplastic pollution on human health as many seafood like shell fish are consumed as whole by humans and its effect is still unknown.

Govt. to commission survey on air pollution sources

Sanjay Gubbi, in his book ‘Second Nature – Saving Tiger Landscapes in the Twenty-First Century’ chronicles court battles, Chief Ministerial meetings and other everyday challenges of conservation

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