

Plastic waste is a hazard for subalpine lakes too

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Many subalpine lakes may look beautiful and even pristine, but new evidence suggests they may also be contaminated with potentially hazardous plastics. Researchers say those tiny microplastics are likely finding their way into the food web through a wide range of freshwater invertebrates too. Credit: *Current Biology*, Imhof et al.

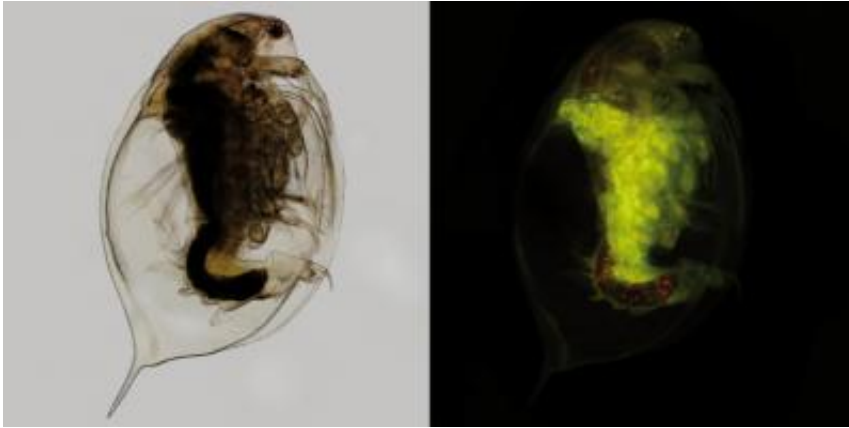
Many subalpine lakes may look beautiful and even pristine, but new evidence suggests they may also be contaminated with potentially hazardous plastics. Researchers say those tiny microplastics are likely finding their way into the food web through a wide range of freshwater invertebrates too.

The findings, based on studies of Italy's Lake Garda and reported on October 7th in *Current Biology*, suggest that the problem of plastic pollution isn't limited to the ocean.

"Next to mechanical impairments of swallowed plastics mistaken as food, many plastic-associated chemicals have been shown to be carcinogenic, endocrine-disrupting, or acutely toxic," said Christian Laforsch of the University of Bayreuth in Germany. "Moreover, the polymers can adsorb toxic hydrophobic organic pollutants and transport these compounds to otherwise less polluted habitats. Along this line, plastic debris can act as vector for alien species and diseases."

The researchers chose Lake Garda as a starting point for investigating [freshwater](#) contamination with micro- and macroplastics because they expected it to be less polluted given its subalpine location. What they found was a surprise: the numbers of [microplastic](#) particles in sediment samples from Lake Garda were similar to those found in studies of marine beach sediments.

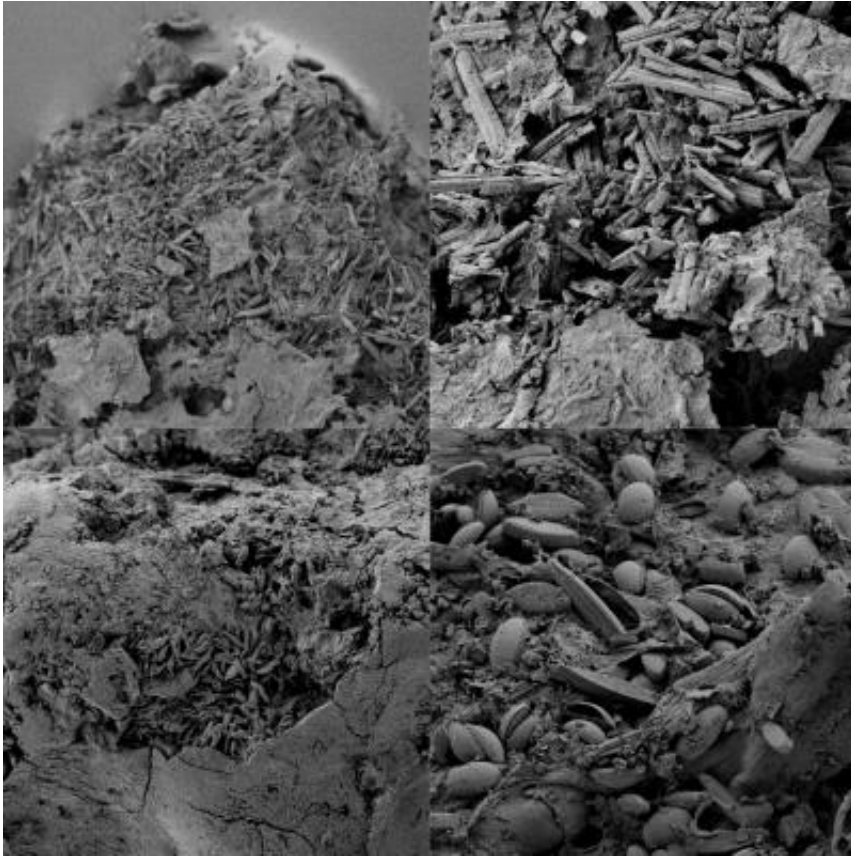
The size ranges of [microplastics](#) found by Laforsch's team suggested that they might find their way into organisms living in the [lake](#). Indeed, the researchers showed that freshwater invertebrates from worms to water fleas will ingest artificially ground fluorescent microplastics in the lab.



This is an image of the freshwater crustacean *D. magna*. Fluorescent overview image showing fluorescent microplastic particles in the digestive tract. Credit: *Current Biology*, Imhof et al.

The findings in Lake Garda come as bad news for lakes generally, with uncertain ecological and economic consequences.

"The mere existence of microplastic particles in a subalpine headwater suggests an even higher relevance of [plastic particles](#) in lowland waters," Laforsch said. He recommends more research and standardized surveillance guidelines to control for microplastic contamination in freshwater ecosystems, as is already required for marine systems.



These are scanning electron microscope images of degraded plastic particles showing examples of surface textures on sampled plastic particles. Credit: *Current Biology*, Imhof et al.

The public can do its part by putting trash where it belongs. The shape and type of plastic particles found in the study indicate that they started as larger pieces of [plastic](#), most likely originating from post-consumer products.

More information: *Current Biology*, Imhof et al.: "Contamination of beach sediments of a subalpine lake with microplastic particles"
[dx.doi.org/10.1016/j.cub.2013.09.001](https://doi.org/10.1016/j.cub.2013.09.001)

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