



How do micro- and nanoplastics move through soil?

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Plastic waste along a roadside. Discarded plastic bottles and cups will ultimately break down into micro- and nanoplastics and accumulate in the soil. Photo by Markus Flury.

Plastic pollution of soil is a pervasive environmental issue, and concerns have arisen about the negative impacts of plastics, particularly micro- and nanoplastics, to soil. Micro- and nanoplastics can migrate and accumulate in soil, changing the soil's physical, chemical, and biological properties and disturbing soil biota.

A new study in *Vadose Zone Journal* synthesizes the current state of knowledge of subsurface transport of micro- and nanoplastics in soils and provides recommendations for future research directions.

The researchers explain that micro- and nanoplastics can enter soil as either primary or secondary plastic particles. Their transport is affected by colloidal and surface properties, which highly depend on the intrinsic characteristics and subsequent environmental modifications. The researchers also emphasize that future research should focus on environmentally relevant plastics, considering the complexities of irregular shape, polydisperse size, and heterogeneous surface properties as well as the temporal changes of these properties caused by continuous environmental modifications.

Environmental weathering modifies surface and colloid properties of micro- and nanoplastics, leading to a different transport behavior compared with their pristine form. However, little information is available on the transport of environmentally relevant micro- and nanoplastics in soils.

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Yu, Y., & Flury, M. (2021). Current understanding of subsurface transport of micro- and nanoplastics in soil. *Vadose Zone Journal*, 20, e20108.

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