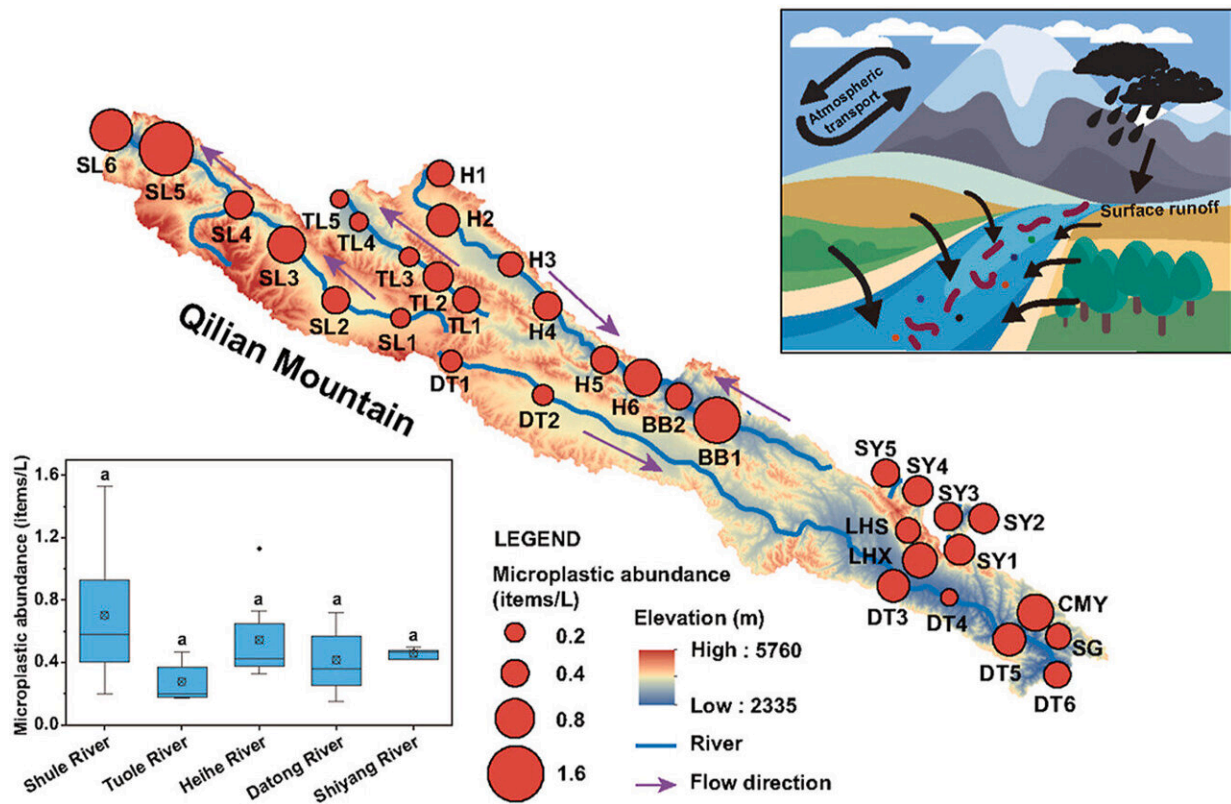


Researchers identify homogenization of microplastics in rivers of Qilian Mountain

June 15 2023, by Liu Jia



Graphical abstract. Credit: *Journal of Environmental Management* (2023). DOI: 10.1016/j.jenvman.2023.118011

The distribution of microplastics is often closely related to human activities. In addition to densely populated areas, remote areas have become the focus of research in recent years. The intensity of human

activities directly affects the abundance of microplastics. However, the ecological risks of microplastics are also closely related to characteristics such as their particle size, shape, and polymer type. Therefore, it is of great importance to evaluate the impact of environmental factors on microplastic characteristics.

Microplastics in the environment are complex particles with varying sizes, shapes, colors, and polymer types, which makes it challenging to generalize the influence of environmental factors on [microplastic](#) characteristics. Studies have adopted the research methods of "microplastic communities" from ecological research to analyze the changing patterns and influencing factors of microplastic characteristics in the environment. This approach is also helpful for understanding the factors affecting the distribution of microplastics in remote environments.

In a recent study published in *Journal of Environmental Management*, a research group led by Prof. Wu Chenxi from the Institute of Hydrobiology (IHB) of the Chinese Academy of Sciences used the research methods of "microplastic communities" to demonstrate the pollution characteristics of microplastics in alpine rivers in Qilian Mountain, China, and has preliminarily identified factors affecting their distribution in [remote areas](#).

By investigating microplastics in the five alpine rivers in Qilian Mountain, the researchers assessed the level of microplastic pollution in Qilian Mountain. They revealed the distribution and driving factors of microplastics in Qilian Mountain rivers based on the analysis of microplastics abundance and characteristics.

Compared with that of the developed areas in China, the abundance of microplastics in the Qilian Mountain rivers was lower. The strict local regulations in the Qilian Mountain Natural Reserve have effectively

controlled the intensity of human activities there, reducing the differences in microplastic abundance.

Based on the analysis of microplastic communities, the researchers showed that the characteristics of microplastics in Qilian Mountain rivers did not exhibit significant differences, and microplastics in the rivers of Qilian Mountain could have a high homology.

The distance-decay relationship analysis also revealed that the factors such as geographical distance, altitude, water environment, or land use had no influence on the distribution of microplastic characteristics in Qilian Mountains rivers. The researchers concluded that atmospheric transport is certainly the most likely source but that would require more event-specific sampling in the future to track this migration pattern of microplastics.

The findings of these study revealed the occurrence of microplastics and their driving factors in the surface water of remote alpine rivers, providing guidance for future monitoring and risk assessment of microplastics in vulnerable and sensitive areas of ecosystems.

More information: Qian Liu et al, Homogenization of microplastics in alpine rivers: Analysis of microplastic abundance and characteristics in rivers of Qilian Mountain, China, *Journal of Environmental Management* (2023). [DOI: 10.1016/j.jenvman.2023.118011](https://doi.org/10.1016/j.jenvman.2023.118011)

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