Predicted shifts in microbial patterns along mountain streams under climate change

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Video Byte

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Abstract

Climate change stands to have a tremendous impact on the world's freshwater ecosystems. To understand how, researchers analyzed 15,289 functional genes related to nutrient cycling and stress processes gathered from biofilm microbes across mountainside streams in Norway, Spain, and China. With increasing elevation, microbial functional diversity tended to decline, and the composition of functional gene assemblages tended to differ more with greater elevational distances. These variations were more drastic as the environmental differences between the lowlands and the peaks increased. The best predictors of these variations appear to be climatic factors, such as temperature during the growing season, and winter precipitation. Including predictors at the local or landscape level could further refine the picture painted by these findings and help Eurasian countries anticipate significant alterations to their stream ecosystems amid a changing climate.