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## >> SYNTHESIZE MOUNTAINS OF KNOWLEDGE <<

## Submitted Abstract

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## Abstract

Aquatic alpine biodiversity has received much less attention from laypeople and researchers than its terrestrial counterpart. However, the scientific community strongly calls for research, protection, and restoration to bend the curve of global freshwater biodiversity loss. Therefore, a special focus on the scarcely studied alpine aquatic biodiversity is both timely and necessary. Here we provide a general overview of the main environmental conditions shaping life in these habitats, the resulting distribution patterns, prominent adaptations, and functional traits. We do so for major groups of organisms, from microbes to vertebrates. We address endemism, genetic diversity, and functional redundancy and evaluate resistance in communities, ecosystem function as well as ecosystem services. Finally, we identify the main stressors threatening alpine aquatic biodiversity, discuss how this biodiversity has been and will likely be affected. We conclude with an outlook on needs for future research, conservation, management, and sustainable use of alpine aquatic biodiversity, ecosystems, and their services in a changing world.