Special Issue

Climate Change Impacts on Water Resources and Ecosystem Dynamics in Mountainous and Cold-Region Ecosystems

Message from the Guest Editor

Cold-region ecosystems are uniquely adapted to survive where water exists as liquid, snow, or ice, across time scales from daily freeze–thaw to millennia in glaciers and permafrost. Climate change is disrupting these patterns, triggering shifts such as thaw lake formation, ice loss, and ecosystem transitions between terrestrial and aquatic states. Physical disturbances like fire, thermokarst, or avalanches further alter habitats. Water availability and snow cover remain vital for species survival, offering both hydration and protection. Changing atmospheric and hydrological patterns also affect downstream ecosystems by redistributing nutrients, pollutants, and invasive species. These shifts are already impacting local communities in the Arctic and high mountains. Despite limited data, it is urgent to assess these effects and explore adaptive solutions. This Special Issue invites studies on the impacts of climate change on cold-region ecosystems, including seasonal water shifts, glacier and permafrost changes, ecosystem responses, downstream impacts, and strategies to mitigate adverse effects.

Guest Editor

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Message from the Editor-in-Chief

In the context of global changes, the sustainable management of water cycles, going from global and regional water cycles to urban, industrial and agricultural water cycles, plays a very important role on the water resources and on their relationships with food, energy, biodiversity, ecosystem functioning and human health. *Water* invites authors to provide innovative original full articles, critical reviews and timely short communications and to propose special issues devoted to new technological and scientific domains and to interdisciplinary approaches of the water cycles. We ensure a critical review process and a quick turnaround between submission and final decision.

Editor-in-Chief

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