

Special Issue

Climate-Ecosystem Feedbacks in Cold and Arid Regions

Message from the Guest Editors

Cold and arid regions—climate change-sensitive ecosystems—are characterized by sophisticated climate-ecosystem feedbacks. Anthropogenic warming triggers permafrost degradation and soil desiccation, altering carbon/oxygen biogeochemical cycles and vegetation functional dynamics; concurrently, vegetation changes mediate surface albedo and modulate local microclimates. Human activities (e.g., fossil-fuel combustion and wildfires) intensify these feedbacks in fragile ecological systems. Understanding this complexity is critical to improving climate model performance and designing science-based adaptive management, underscoring the need for targeted research in these key regions. This Special Issue seeks to deepen understanding of the characteristics, drivers, and ecological-climatic consequences of these feedbacks, filling critical knowledge gaps to enhance climate projections and ecosystem conservation.

Guest Editors

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About the Journal

Message from the Editor-in-Chief

Climate (ISSN 2225-1154) was established in 2013 to provide an openaccess outlet for innovative research, review articles, new direction papers, and communications relevant to all disciplines related to climate at all scales. The journal encourages papers ranging from climate change detection and attribution and Earth system modeling to ecosystem, hydrologic, and socioeconomic impacts and climate mitigation and adaptation measures. The influence of *Climate* is strong and growing.

Editor-in-Chief

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