Special Issue

Surface Water Responses to Drought: From River Basins to Lakes and Reservoirs

Message from the Guest Editors

This Special Issue addresses the critical role of drought in driving surface water depletion across diverse hydroclimatic regions worldwide. Surface water resources, including snowpacks, glaciers, river systems, wetlands and lakes, form essential components of the hydrological cycle and underpin ecosystem health, socio-economic development, and water security. Although groundwater is hydraulically connected to surface water systems and serves as a vital resource in many arid and semi-arid regions, surface waters typically respond more rapidly and visibly to drought, climate variability, land-use change, and anthropogenic pressures. The pronounced vulnerability of surface water systems to drought, climate change, and pollution highlights the urgent need for advanced monitoring, modeling, and forecasting frameworks capable of supporting adaptive management and resilience planning. Progress in this area directly contributes to the United Nations Sustainable Development Goals, particularly SDG 6 (Clean Water and Sanitation), SDG 11 (Sustainable Cities and Communities), and SDG 13 (Climate Action), by promoting sustainable water management and climate-resilient infrastructure.

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About the Journal

Message from the Editor-in-Chief

Continued developments in instrumentation and modeling have driven atmospheric science to become increasingly more complex with a deeper understanding of concepts, mechanisms, and interactions. This is the field that innovation built and it has led to a better appreciation for the complexity with atmosphere. Human life is intertwined in this complexity as we strive to better understand our atmosphere. Climate change is constantly stretching the limits of our thinking and forcing new ideas and concepts to be played out. Welcome to the Anthropocene!

Editor-in-Chief

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