

## Special Issue

# Drought Impacts on Tree Physiology: Physiological Mechanisms and Adaptive Strategies

### Message from the Guest Editors

Drought stress is a critical environmental challenge that greatly impacts tree physiology, growth, and survival.

This Special Issue explores the multifaceted effects of water deficit across biological scales, from molecular adaptations to whole-plant responses. Contributions will address key aspects such as (1) mechanistic drivers of drought tolerance, including hydraulic safety margins, stomatal control paradigms, and phloem recovery processes; (2) metabolic reconfigurations in carbon partitioning between growth and defense compounds; and (3) multi-omic signatures of drought adaptation (genomic, transcriptomic, proteomic, and metabolomic networks). Also, studies on drought-induced changes in photosynthesis, respiration, and secondary metabolism are encouraged. A central focus will be on adaptive traits and resilience mechanisms, including species-specific tolerance thresholds, phenotypic plasticity, and long-term acclimation. Particular emphasis is put on quantifying resilience thresholds using innovative approaches, such as monitoring (e.g., remote sensing, isotopic tracing), high-res phenotyping (thermal/spectral imaging), and modeling to predict multi-scale drought impacts.

### Guest Editors

Dr. Lin Zhu

Dr. Danbo Pang

Dr. Domingo Sancho-Knapik

### Deadline for manuscript submissions

28 February 2026



## Forests

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### Message from the Editor-in-Chief

*Forests* (ISSN 1999-4907) is an international and cross-disciplinary, scholarly forestry journal. The distinguished editorial board and refereeing process ensures the highest degree of scientific rigor and review of all published articles. Original research articles and timely reviews are released online, with unlimited free access. Our goal is to have *Forests* be recognized as one of the foremost publication outlets for high quality, leading edge research in this broad and diverse field. We therefore invite you to be one of our authors, and in doing so share your important research findings with the global forestry community.

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