

Special Issue

Physiological Responses and Functional Traits of Woody Plants Under Drought and Heat Stresses

Message from the Guest Editors

Characterized by increased water scarcity, drought frequency, and rising temperatures, climate change alters the physiological performance of trees, with profound impacts on both natural and urban ecosystems. Drought and heat stress can impair tree growth, trigger crown defoliation, and eventually result in tree mortality. Crucial factors that enable the survival of woody plants in a challenging environment include soil-to-root conductance, the resistance of water transport to xylem embolism formation, dehydration tolerance, cuticular water losses, and the availability of carbon pools. While some tree species are weakened by environmental stress, others with greater adaptive capacity can thrive, leading to a shift in species composition over time. This Special Issue aims to compile cutting-edge research and comprehensive reviews that explore the physiological, biochemical and morphological characteristics that confer tolerance or, by contrast, vulnerability to heat and drought stress conditions in woody species. Its scope encompasses both pot experiments conducted in controlled and semi-controlled environments and field studies carried out in natural and urban forests.

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