Special Issue

Effects of Abiotic Stress on Tree Physiology and Ecology

Message from the Guest Editors

Climate change, anthropogenic pollution and unsustainable management practices induce abiotic stresses that directly impact tree physiology in natural, urban and agricultural settings. Climate change will result in increased drought, thermal stress, and fire frequency, as well as higher atmospheric carbon dioxide. Native forests increasingly show signs of abiotic stress, while the production of fruit crops such as olive or nuts is imperiled by increased drought and temperature changes during flowering. Phenotyping through the examination of tree physiological responses to these stresses can provide a tool to identify varieties adapted to future growth conditions. An understanding of tree physiological response is vital to the mitigation of climate change and population growth effects on forests and tree crops. This Special Issue examines the impact of abiotic stresses on tree physiology by focusing on gas exchange; chlorophyll fluorescence; remote sensing; hyperspectral monitoring; and metabolomic, antioxidant, epigenetic, genetic and anatomical responses to drought, heat stress, rising [CO2], atmospheric pollutants, salinity, and other abiotic stressors.

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Deadline for manuscript submissions

closed (20 March 2023)

Forests

an Open Access Journal
by MDPI

Impact Factor 2.4
CiteScore 4.4

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