

EGU21-13511

<https://doi.org/10.5194/egusphere-egu21-13511>

EGU General Assembly 2021

© Author(s) 2022. This work is distributed under the Creative Commons Attribution 4.0 License.



Assessment of the climate change-induced impact on forest vegetation in the Mediterranean Basin using an integrated approach

Maria Castellaneta¹, Angelo Rita^{1,2}, Jesus Julio Camarero³, Michele Colangelo^{1,3}, and Francesco Ripullone¹

¹Scuola di Scienze Agrarie, Forestali, Alimentari ed Ambientali, Università degli Studi della Basilicata, Viale dell'Ateneo Lucano 10, 85100 Potenza, Italy

²Dipartimento di Agraria, Università di Napoli Federico II, via Università 100, IT-80055 Portici (Napoli), Italy

³Instituto Pirenaico de Ecología (IPEEC), Avda. Montañana 1005, 50192 Zaragoza, Spain

The recent increase in the frequency and severity of heat waves and droughts has intensified efforts to understand their impact on forest productivity and tree vigor. These climate extreme events are expected to reduce productivity and increase the tree mortality rate, particularly in drought-prone Mediterranean forests. Thus, our goal is to quantify the impacts of hotter droughts on forests vulnerable to drought in the Italian and Iberian peninsulas by using remotely sensed data (NDVI, Normalized Difference Vegetation Index) to track vegetation changes and tree-ring data from forest sites showing dieback to assess tree's growth trends. The survey involved the comparison of stands showing dieback where trees showed growth decline and high defoliation rates (decay) versus stands where trees showed low or no defoliation. Our outcomes will be discussed i) to describe the effects of climate anomalies on forest vulnerability in terms of resistance and resilience, and ii) to evaluate the existence of a correlation between vegetation response and "post-disturbance" recovery.