

**Climate-growth relationships of riparian ash populations across different European climate regions**

M. Colangelo<sup>1</sup>, J. Julio Camarero<sup>1</sup>, A. Rita<sup>2</sup>, O. Pericolo<sup>2</sup>, F. Ripullone<sup>2</sup>, F. Campelo<sup>3</sup>, P.M. Rodríguez-González<sup>4</sup>

<sup>1</sup>*Instituto Pirenaico de Ecología (IPE-CSIC), Avda. Montañana 1005, Zaragoza, Spain*

<sup>2</sup>*School of Agricultural, Forest, Food and Environmental Sciences, Univ. Basilicata, Potenza, Italy*

<sup>3</sup>*CFE – Centre for Functional Ecology – Science for People & the Planet, Department of Life Sciences, University of Coimbra, Calçada Martim de Freitas, 3000-456 Coimbra, Portugal*

<sup>4</sup>*CEF – Forest Research Centre, School of Agriculture, University of Lisbon, Tapada da Ajuda, 1349-017 Lisboa, Portugal*

e-mail for corresponding author: michele.colangelo@unibas.it

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Mediterranean riparian and floodplain forests are wet habitats located within water-limited areas. These forests have shrunk significantly during the 20th century being among the most threatened forest ecosystems because of their extensive conversion into agricultural or urban lands and thus represent a top-priority target for conservation, management and restoration. By the occurrence of more extreme climate events (e.g. dry spells, heat waves), climate change may disrupt the functioning of these forests. Understanding how species will respond to climate is a critical part of efforts to prevent widespread climate-driven detrimental consequences, or to predict distributional, phenological shifts, acclimation, and adaptation.

In the present study, we used a dendrochronological approach for the radial-growth data characterization (tree-ring width) of a relevant riparian tree species widely distributed across the Mediterranean Basin i.e., the narrow-leaved ash (*Fraxinus angustifolia* Vahl.; hereafter ash) to disentangle the functional mechanisms driving the responses of ash to climate in four Mediterranean sites with contrasting climatic conditions. Preliminary results unexpectedly showed that summer months water availability was not the main factor controlling tree growth in the environment where narrow-leaved ash was present. Instead for the study period spring temperature and precipitations was the main factor controlling tree growth. A better knowledge of these long-term dynamics would contribute to refine any management and restoration tools of these riparian forests which are often threatened across the Mediterranean Basin.