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Quantifying the response of shrubs and trees to drought as a tool to detect vulnerable forests in Spain

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Climate change is expected to increase the duration and severity of heatwaves and droughts in the Mediterranean region. In this climate change hotspot, drought and heat stress have triggered the occurrence of forest mortality events over the past decades. It is thus important detecting those regions in which drought-induced forest mortality events are occurring to advance in the knowledge of why some species and populations are more vulnerable to heat and drought than others.

If localized on time, these declining forests are valuable natural laboratories to attribute potential factors triggering mortality. However, detecting and identifying drought-impacted forest is challenging because forest mortality events in the Mediterranean region are spatially heterogeneous and have a local extent.

Here I summarize the main findings of several studies performed in forests that have been impacted by drought events over the past years aiming to detect how: *i*) the vitality and growth of shrubs and trees varied between species, and *ii*) between individuals within species. Further, I discuss how these results can help to increase our capacity in detecting forest mortality hotspots.