

Forests worldwide threatened by drought

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Dr. Sarah Greenwood of the University of Stirling is pictured. Credit: University of Stirling

Forests around the world are at risk of death due to widespread drought, University of Stirling researchers have found.

An analysis, published in the journal *Ecology Letters*, suggests that forests are at risk globally from the increased frequency and severity of droughts.

The study found a similar response in [trees](#) across the world, where death increases consistently with increases in [drought](#) severity.

Dr Sarah Greenwood, Postdoctoral Researcher in Stirling's Faculty of Natural Sciences, said: "We can see that the death of trees caused by drought is consistent across different environments around the world. So, a thirsty tree growing in a tropical forest and one in a temperate forest, such as those we find throughout Europe, will have largely the same response to drought and will inevitably suffer as a result of rising temperatures and changes in [rainfall patterns](#) on Earth."

The biological and environmental scientists did find specific, varying features in different tree types can alter their resistance to drought. Species with denser wood and smaller, thicker leaves tend to fare better during prolonged, unusually-dry periods.

Stirling co-author and Professor of Ecology, Alastair Jump, said: "By pinpointing specific traits in trees that determine how at risk they are from drought, we can better understand global patterns of [tree mortality](#) and how the world's forests are reacting to rising temperatures and reduced rainfall.

"As the temperature of the planet continues to climb, mass tree mortality will hit more forests than ever before. Forests store a substantial amount of the world's carbon and increased tree death will only propel future global warming.

"This has very significant implications for fully understanding the impact of climate change on our planet."

More information: Sarah Greenwood et al, Tree mortality across biomes is promoted by drought intensity, lower wood density and higher specific leaf area, *Ecology Letters* (2017). [DOI: 10.1111/ele.12748](https://doi.org/10.1111/ele.12748)

Provided by University of Stirling

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