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Clever eucalypts remember heatwaves


- Caroline Berdon

[National](#)



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 Some Australian eucalypts are able to pass heat resistance on to their offspring.

Eucalypts are some of the cleverest Australians around. Some have developed thick, tough bark to protect against fire, while their leaves typically hang vertically to avoid the harsh sun.

Now it seems, like us, they remember extreme temperatures. But unlike us, they are able to adapt and prepare their offspring to better cope with heatwaves.

Researchers at Macquarie University have discovered *Eucalyptus grandis* seedlings, commonly known as flooded gum or rose gum, whose parents have experienced more days of extreme heat (15 degrees above average) in the wild, are better able to cope with simulated heatwave conditions.

They do so by making more protective proteins to safeguard their cells from heat stress.

Dr Rachael Gallagher, senior author of the paper published in the journal *Functional Ecology*, says the findings are "very surprising and exciting, especially the strength of the finding.

"We have shown that trees have a molecular memory for extreme heat," she told AAP.

"There was a very clear pattern - the more exposed you were as an adult, the more equipped your seedlings were to cope with extreme heat events."

The flooded gum is a widespread tree species along Australia's east coast and also an important forestry species, grown in timber plantations around the world including in Australia, South Africa and Brazil.

Now Gallagher and her team want to know whether other species of eucalypt - of which there are several hundred in Australia - and other trees can also pass this heat resistance on.

Gallagher says the findings will help show which tree populations may be best to use in bush regeneration projects, the translocation of trees, the greening of urban areas and climate-proofing forestry plantations as temperatures become more extreme.

"This kind of information can show which populations will be most resistant to climate change, which is important from an investment point of view because trees are pretty expensive," she said.

But she stops short of describing trees as resistant to climate change.

"The rapid pace of climate change is rapidly outstripping incremental changes in temperature. It could be that the rate of climate change is just too fast for trees to be able to keep up."

Australian Associated Press



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