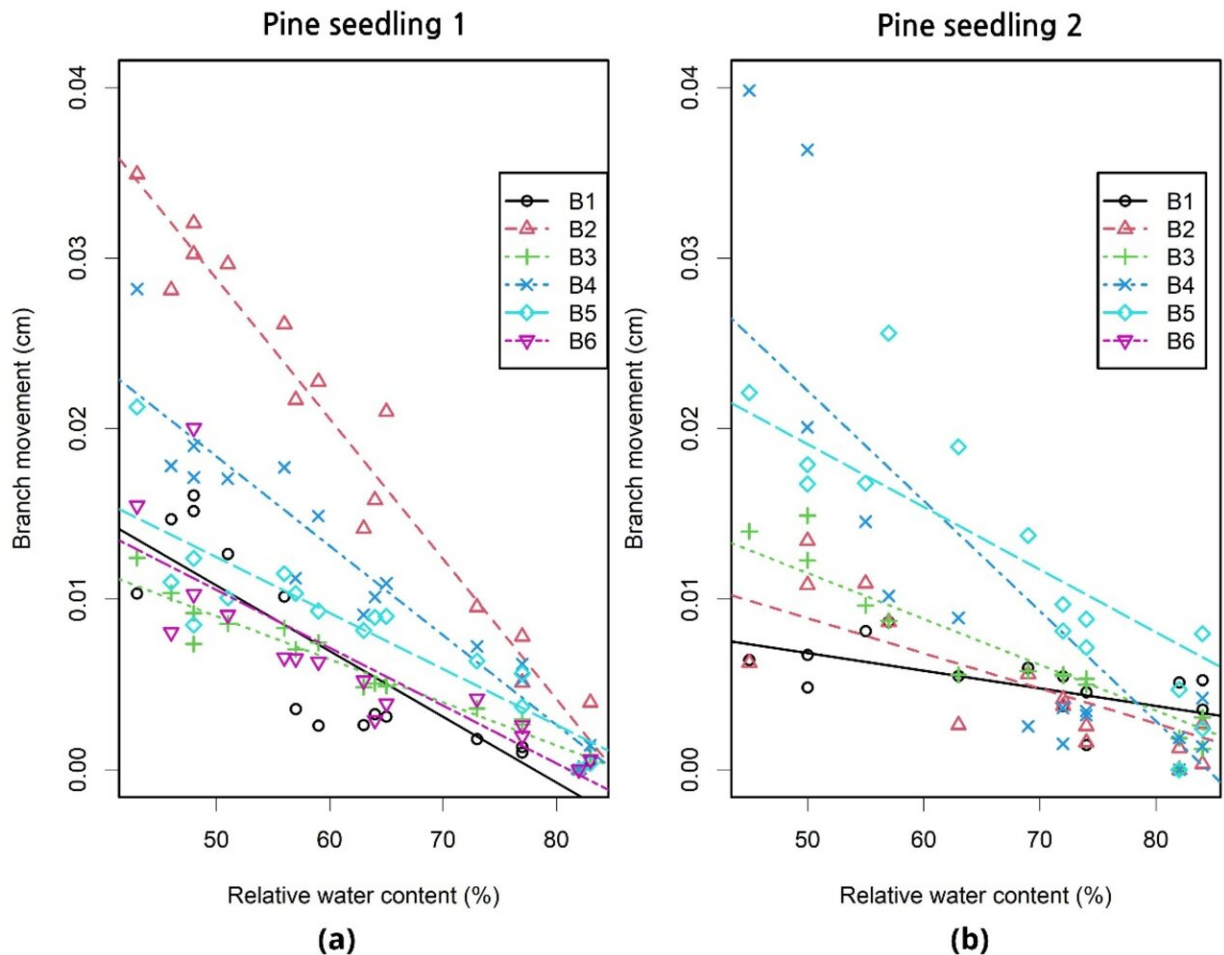


Water makes tree branches droop at night

May 12 2022



Relationship between relative water content (%) and branch movement (cm) for each branch in (a) Pine seedling 1 and (b) Pine seedling 2. Each line represents a regression line between branch movement and relative water content. The different symbols denote different branches. Credit: *Forests* (2022). DOI: 10.3390/f13050728

A new study using a time-series of terrestrial laser scanning measurements shows that changes in the water status of leaves and branches causes branches to move downward at night, up to 20 cm depending on the tree species. Leaves and branches replenish their water storage during the night, increasing their weight and causing them to droop down. Terrestrial laser scanning is a remote sensing technique that can produce a 3D representation of the surroundings with millimeter accuracy. With repeated measurements, it is possible to study small structural changes in the environment, such as the movement of branches.

"By monitoring the movement of tree branches, we can gain insight into how water moves inside the tree. Climate change reduces the availability of water and increases drought stress, so it is important to understand the movement of water in trees in order to understand changes in forest health," Postdoctoral Researcher and the lead author of the article Samuli Junttila from the University of Eastern Finland says.

In the laboratory, the researchers found that tree branch position followed changes in tree water status also over a longer time period. These findings, published in *Forests*, also have practical applications. For example, laser scanning could be used to monitor plant water status in a greenhouse to automate watering regimes and save valuable resources.

More information: Samuli Junttila et al, Tree Water Status Affects Tree Branch Position, *Forests* (2022). [DOI: 10.3390/f13050728](https://doi.org/10.3390/f13050728)

Provided by University of Eastern Finland

Citation: Water makes tree branches droop at night (2022, May 12) retrieved 15 May 2024 from <https://phys.org/news/2022-05-tree-droop-night.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.