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How trees in Finland throw up their own parasols to keep cool

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A brown bear in a forest in Finland. The researchers combined their field measurements with observations of cloud cover. Photograph: Alamy

As if trees were not amazing enough, it turns out that some of them throw up their own parasols to keep themselves cool on hot days.

For the past seven years Taina Yli-Juuti, from the University of Eastern Finland, and colleagues have been venturing out into boreal forest 125 miles (200km) north of Helsinki and monitoring the chemistry happening above the trees. They found that on warmer days coniferous trees produced more volatile organic compounds – the chemicals that give pine forests their distinctive aroma. Chemical reactions between these compounds produce tiny particles, which act as cloud condensation nuclei – surfaces where water vapour can condense.

The researchers combined their field measurements with observations of cloud cover from Nasa's Aqua satellite and demonstrated an increase in haze above the trees on warmer days. The greater the concentration of cloud droplets, the greater the amount of solar radiation reflected away, resulting in cooler temperatures on the ground. In this case, the tree chemistry was providing nearly 20% of the reflectivity over the forest during summer.

The team's findings, published in Nature Communications, provide the first direct observational evidence of this negative climate feedback mechanism. As our planet continues to warm, Yli-Juuti and colleagues anticipate this effect will become more prevalent in boreal forests around the world.

Source:<https://www.theguardian.com/news/2021/oct/26/how-trees-in-finland-throw-up-their-own-parasols-to-keep-cool>