

Wytham Woods 'shields local plants'

October 31 2013



A research plot in Wytham Woods, near Oxford.

A recent study has found that forests with dense canopies, including Oxford's Wytham Woods, can partially shield ground-level plants from the local effects of global warming.

As the planet warms, the general trend is for species adapted to survive at higher temperatures to thrive at the expense of those better-suited to colder climates. But when researchers compared plant species from 29 European and North American forests across the past few decades, they found that thick forests can slow, halt or even reverse this effect.

Wytham Woods was one of the forests where plant life had not responded to rising [average temperatures](#).

'We believe that the effect of the tree canopy is to moderate changes in temperature at the lower levels in the wood – particularly where, as is the case in much of Europe, woods have been becoming a denser and

shadier in recent years,' explains Dr Keith Kirby of Oxford University's Department of Plant Sciences. 'The fact that we didn't see more of a warming response in Wytham is perhaps not surprising since the plots used were mainly from the undisturbed areas of the woods, a lot of which are on the cooler north side of the hill.'

Wytham Woods are one of the most studied areas of woodland in the world, and Dr Kirby and colleagues have been monitoring plots there since 1974. The latest study highlights how important trees are for preserving the local conditions, so it is fortunate that Wytham Woods was not greatly affected by the storm which hit the UK on 27-28 October. However, ash dieback still poses a threat to much of the woods.

'We've found no traces of ash dieback in Wytham so far, but large chunks of the woods are 60-70% ash,' says Dr Kirby. 'If the disease were to spread to the area, we could lose great swathes of the tree cover. There could be benefits for some plants in terms of increased light at ground level but, as this latest study shows, they would no longer have the ash canopy to mitigate the effects of increasing temperatures.'

Wytham Woods have been owned by the University of Oxford since 1942, and they span 415 hectares to the west of Oxford. They played an important role in the latest study, as one of the few sites where plant life did not yet show adaptation to higher temperatures.

The international study was led by Belgian scientists from Ghent University and published in this week's *Proceedings of the National Academy of Sciences*. Dr Keith Kirby contributed data and analysis from the Wytham Woods plots. The study used data from over 1,400 plots from 29 forests across Europe and North America, sampled at intervals between 12-67 years.

More information: www.wytham.ox.ac.uk/

Provided by Oxford University

Citation: Wytham Woods 'shields local plants' (2013, October 31) retrieved 17 April 2024 from <https://phys.org/news/2013-10-wytham-woods-shields-local.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.