

# 'Early birds' adapt to climate change



Great tits are able to change their behaviour from year to year.

**Individual birds can adjust their behaviour to take climate change in their stride, according to a study by scientists from the University of Oxford.**

A study of the great tit (*Parus major*) population in Wytham Woods, near Oxford, has shown that the birds are now laying their eggs, on average, two weeks earlier than half a century ago. The change in their behaviour enables them to make the most of seasonal food: a bonanza of caterpillars that now also occurs around two weeks earlier due to warmer spring temperatures.

'We found that, in this great tit population, female birds are able to adapt their behaviour from year to year to respond to changing environmental conditions,' said Professor Ben Sheldon, of the Edward Grey Institute in Oxford's Department of Zoology, lead author of a report of the research in this week's *Science*. 'In this case, they have been able to keep track with the changes that have happened over recent decades, showing that population responses to climate change can be driven by the adaptability of individuals rather than genetic changes.'

Oxford scientists have been studying the Wytham Woods great tits for more than 60 years. While the data they collected from nearly 10,000 breeding reports shows an overall trend of birds laying eggs earlier in response to warmer spring temperatures, there is surprisingly little variation between individual females as their behaviour closely follows the 'early bird' trend.

Professor Sheldon commented: 'While our study shows how important it is to be able to adjust behaviour from year to year, the lack of variation between individuals in their response to climate change is surprising and contrasts with a recent study of Dutch great tits - which found a much greater variation in flexibility between individual birds. Little is known about the basis of this sort of behavioural adaptability and why it can vary within species. More work is also needed to discover whether the close matching of the changing environment found by the birds in our study is, indeed, unusual.'

Source: University of Oxford

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