

EXPLORING THE BIODIVERSITY BENEFITS OF BETTER-CONNECTED WOODLANDS

Research summary

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Exploring the biodiversity benefits of better-connected woodlands – Research Summary

Researchers from the University of York and the UK Centre for Ecology & Hydrology collaborated together to understand the benefits for biodiversity of creating more joined-up woodlands.

Woodland creation and restoration are crucial for nature recovery and for achieving net-zero carbon emission goals. Woodland cover in the UK is low (covering only about 13% of land), and there is often an assumption that habitat creation to improve connectivity between woodland patches is beneficial. We set out to test this assumption for a wide range of different groups of species, and across the entire UK (England, Wales, Scotland and Northern Ireland).

Methods:

We examined information from 15 groups of invertebrate species (including insects, such as butterflies, moths and beetles, as well as other invertebrates such as spiders, centipedes and snails). In total we examined 823 species that are associated with woodlands.

We analysed citizen science records of these species from 1990 onwards, which provided us with information on where the species occur in the UK. We also mapped woodland cover across the UK and calculated the connectivity between all the different woodland patches. We used this information to determine how connectivity affects the occurrence of species in woodlands.

Main findings:

1. Better woodland connectivity is beneficial for most of the invertebrate groups that we studied, although the benefits varied considerably among the different species

2. There are benefits for biodiversity of improving woodland connectivity over and above the benefits of creating more woodlands

3. The biodiversity benefits of improving woodland connectivity are greatest in landscapes with low woodland cover

Creating more joined-up woodlands would have a positive impact for nearly half (48%) of the woodland-associated species and would have no negative effects on most of the other species. Our findings illustrate how important it is to consider where woodlands are created, and to improve their connectivity, as well as increasing the amount of woodland cover.

Our results can be used to guide the selection of locations to create new woodlands which deliver the greatest benefits for woodland species. Our findings emphasise the biodiversity gains from increasing woodland cover and connectivity and could be used in the targeting of locations and landscapes for woodland restoration that maximise the biodiversity benefits.

To explore these findings in more detail, a [pre-print of the future publication](#) is available, and the full dataset will be made available once the research has been published.