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Insect Pollinators Initiative

Investigating the impact of habitat structure on queen and worker bumblebees in the field

Led by Dr Claire Carvell, NERC Centre for Ecology and Hydrology
ccar@ceh.ac.uk

For the first time researchers are going to use a new high-tech approach to unravel fundamental aspects of the ecology of bumblebees and so help us understand why these essential pollinators are declining. Bumblebees are wild bees that live in colonies of at most a few hundred workers and a single queen. We know they need safe nesting sites and lots of flowers. But we don't know how the distribution of nesting and foraging habitats across a landscape, or habitat structure, affects in detail how nest-searching queens or foraging workers use these habitats. The researchers will analyse DNA from live wild bees to estimate how far queens fly to start new nests and how far workers fly to forage. All of this information will be fed into a computer and mapped out using details of the landscape collected during fieldwork alongside aerial scans of the area. The study will focus on five different species including the rare *Bombus ruderatus*, a UK Biodiversity Action Plan species. Because the English study landscape contains wildflower strips sown alongside fields especially to attract pollinators, the research will help farmers and conservationists decide how such schemes can be made as effective as possible.

This project is in partnership with Professor Andrew Bourke at the University of East Anglia and Dr Bill Jordan at the Institute of Zoology, Zoological Society of London.