

Diversity in UK gardens aiding fight to save threatened bumblebees, study suggests

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Attached is an image of a 'garden bumblebee' (*Bombus hortorum*) hovering by a foxglove. Credit: Dr Mick Hanley/Plymouth University

The global diversity of plants being cultivated by Britain's gardeners is

playing a key role in the fight to save the nation's threatened bumblebees, new research has revealed.

Ecologists at Plymouth University, in a study published this week, have shown the most common species of bumblebee are not fussy about a plant's origin when searching for nectar and pollen among the nation's urban gardens.

But other species – and, in particular, long-tongued bees – do concentrate their feeding upon plants from the UK and Europe, for which they have developed a preference evolved over many millennia.

Dr Mick Hanley, Lecturer in Ecology at Plymouth University, said the study showed the continued importance of promoting diversity and encouraging gardeners to cast their net wide when choosing what to cultivate.

"Urban gardens are increasingly recognised for their potential to maintain or even enhance biodiversity," Dr Hanley said. "In particular, the presence of large densities and varieties of [flowering plants](#) supports a number of pollinating insects whose range and abundance has declined as a consequence of agricultural intensification and habitat loss. By growing a variety of plants from around the world, gardeners ensure that a range of food sources is available for many different pollinators. But until now we have had very little idea about how the origins of [garden plants](#) actually affect their use by our native pollinators."

The study, in the forthcoming April issue of the journal *Annals of Botany* (published by Oxford University Press), set out to examine whether bumblebees preferentially visited plants with which they share a common biogeographical heritage, with researchers conducting summer-long surveys along a typical residential street.

It showed that rather than discriminating between Palaearctic (a range extending across Europe, north Africa and northern Asia) and non-Palaearctic garden plants, bees simply visited plants in proportion to flower availability. Indeed, of the six most commonly visited garden plants, only one – Foxglove – was a British native and only three of Palaearctic origin.

Among individual species, however, there were distinct preferences, with the long-tongued 'garden bumblebee' (*Bombus hortorum*) showing a strong preference for 'native' Palaearctic-origin garden plants, choosing them for 78% of its flower visits. Meanwhile, the UK's most common species – the 'buff-tailed bumblebee' (*Bombus terrestris*) – favoured non-Palaearctic garden plants over species with which it shares a common evolutionary heritage.

Dr Hanley added: "As a general rule, bees will go wherever there are flowers available. However, if native plants were to disappear completely from our towns and cities, the long-term survival of some of our common pollinators – like the 'garden bumblebee' – could be in jeopardy. In addition to growing truly native plants like foxgloves, where possible, gardeners can help [native pollinators](#) by setting aside a small area to allow native brambles, vetches, dead nettles, and clovers to grow. But as long as some native species are available in nearby allotments, parks, or other green spaces, a combination of commonly-grown garden plants from all around the globe will help support our urban bumblebees for future generations."

More information: aob.oxfordjournals.org/content/3/15/aob.mcu006.full

Provided by University of Plymouth

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