

Science for Environment Policy

Conservation efforts may be paying off for wild plants and insect pollinators

Since the 1990s, rates of biodiversity loss of wild plants and their insect pollinators have slowed down in north-west Europe, according to a recent study. It is likely that conservation activities, such as agri-environmental schemes, have contributed to this improving situation.

The loss of wild species and habitats as a result of [agricultural](#) intensification and habitat destruction has prompted considerable investment in conservation practices, such as paying farmers to promote biodiversity and wildlife in Europe, since 1990.

This study, partly funded by the EU STEP¹ and SCALES² projects, compared a period of rapid land use intensification and natural habitat loss (from 1930 to 1990) with a period of increased conservation investments (from 1990 to 2009). The researchers focused on native species of plants and their pollinators (bumblebees and other bee species, hoverflies and butterflies) in three European countries: Britain, the Netherlands and Belgium. They analysed changes in the number of different species in a given area (the 'species richness') and how the composition of species existing in a particular area (communities) changed over time to become less diverse and more similar, a process known by ecologists as 'biotic homogenisation'.

The results revealed a significant loss of [biodiversity](#) for the studied groups of species and less diversity in species communities in the decades before 1990. However, since 1990, these trends have been slowing and have even been reversed in some cases.

In all three countries, butterfly species richness declined substantially between 1950 and 1989. Over this period, substantial declines in bee richness were also recorded in the Netherlands and Belgium. In Britain, the number of bumblebee species also declined, but there was no significant change found for other bees. However, when the time period was extended back to 1930, declines were evident for both bee groups. The composition of species in bee communities also became more similar in Britain over this period.

Hoverflies, in contrast to bees, showed no significant declines in the number of species detected during the period 1950-1989 in any country. Plants also fared better than bees, with declines in species richness only found at local scales in Britain. In the Netherlands, although increases in species richness of native plants were evident locally, plant communities across the landscape became more similar, suggesting that, unique species were disappearing locally to be replaced with more common and widespread native plants.

The study shows that, after 1990, as investment in conservation efforts increased, many of these declines slowed down and even reversed in some cases. For example, the decline of bumblebee richness slowed in both Britain and the Netherlands and species richness of other bees even increased at local and regional scales in these countries.

The researchers conclude that, while drivers of change, such as climate, may contribute to an increase in species richness in some areas that are relatively species poor, other drivers of decline, such as large-scale land use change leading to habitat loss, has slowed down or nearly stopped. Coupled with policies, such as the control of pesticides and agri-environmental schemes, slowing rates of biodiversity loss and biotic homogenisation suggest that conservation efforts can work. It is therefore crucial to continue with conservation efforts.



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<http://onlinelibrary.wiley.com/doi/10.1111/ele.12121/abstract>

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1. STEP (Status and Trends of European Pollinators) is supported by the European Commission under the Seventh Framework Programme. See: www.step-project.net

2. SCALES (Securing the Conservation of biodiversity across Administrative Levels and spatial, temporal, and Ecological Scales) is supported by the European Commission under the Seventh Framework Programme. See: www.scales-project.net