

Cities could play a key role in pollinator conservation

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Given the pressures that pollinators face in agricultural land, cities could play an important role in conserving pollinators, according to a new study. The research, carried out by scientists at the Universities of Bristol, Edinburgh, Leeds and Reading in collaboration with Cardiff

University and the National Socio-Environmental Synthesis Center (SESYNC), has revealed that gardens and allotments are good for pollinators, and lavender and borage are important garden plants that pollinators use as food sources.

The study, published today in *Nature Ecology and Evolution*, has assessed all major urban land uses for pollinators. While there have been a few small-scale studies on pollinators in some urban land uses, this is the first-time scientists have considered cities in their entirety.

The research found that residential gardens and allotments ([community gardens](#)) are particularly good for pollinators, and lavender, borage, dandelions, thistles, brambles and buttercups are important plant [species](#) for pollinators in [urban areas](#).

The team also designed a new measure of management success, based on community robustness, that considers the stability of whole communities of pollinators, and not just individual species. Robustness is a measure of how a community responds to species loss; robust communities can survive the disappearance of some species but species loss in fragile communities leads to a domino effect of other extinctions.

Dr. Katherine Baldock, NERC Knowledge Exchange Fellow and lead researcher from the School of Biological Sciences and the Cabot Institute at the University of Bristol, said: "By understanding the impact of each urban land use on pollinators, whether it's gardens, allotments, road verges or parks, we can make cities better places for pollinators."

The main recommendations from the study are:

- Public greenspaces should be managed so they benefit pollinators. Parks, road verges and other public greenspaces make up around a third of cities but have fewer pollinator visits

and resources for pollinators than other land uses. The research shows that increasing the numbers of flowers, for example by mowing less often, can help urban pollinators.

- Gardens make up a quarter to a third of the area of UK cities and better [garden](#) management in new developments and existing gardens is likely to benefit pollinator conservation.
- City planners and local councils should increase the number of allotments (community gardens) in towns and cities. Allotments (community gardens) are good for pollinators as well as people and increasing their area even by a small amount could have a large positive effect on pollinators.

Jane Memmott, Professor of Ecology at the University of Bristol and who leads the Urban Pollinators Project, added: "This is the first time a new measure of management success that considers the long-term sustainability of pollinator communities, and not just individual species, has been used in a practical conservation context.

"Rather than simply asking about how management affects the number of pollinator species or their abundance, we also ask how potential strategies affect the ability of [pollinators](#) to cope with species losses associated with environmental change. A good management intervention leads to more sustainable communities."

More information: 'A systems approach reveals urban pollinator hotspots and conservation opportunities' Baldock KCR et al. *Nature Ecology and Evolution*, 2019. DOI: 10.1038/s41559-018-0769-y , www.nature.com/articles/s41559-018-0769-y

Provided by University of Bristol

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