

# New evidence shows UK solar parks can provide for bees and butterflies

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Meadow Brown and Gatekeeper butterflies on a U.K. solar park. Credit: Hollie Blaydes/Lancaster University

A new study shows that U.K. solar parks, if managed correctly, can provide vital resources to help stem the decline in the nation's bees and butterflies.

The new research, led by scientists at Lancaster University and in collaboration with the University of Reading, has been [published](#) in the journal *Ecological Solutions and Evidence*. It provides the first peer-reviewed field data of [insect pollinators](#) at solar parks in the U.K., covering 15 sites.

The scientists recorded about 1,400 pollinators across more than 30 species, including nearly 900 butterflies, more than 170 hoverflies, more than 160 [bumble bees](#), as well as moths and honeybees.

The most commonly observed species was the meadow brown butterfly. Bumble bees were observed at two thirds of the solar parks, while the small heath butterfly, a priority biodiversity species, was observed at three of the solar parks.

Their field data, gathered through repeated surveys during the summer of 2021, shows two critical factors are at play in determining whether solar parks can become beneficial to pollinators—the flowering plants available to pollinators within solar farms and the characteristics of the surrounding landscape.

The availability of a greater diversity of flowering [plant species](#) was a key factor in increased pollinator abundance and biodiversity within solar parks. Parks containing a wider variety of flowering plants saw increased numbers of bumblebees, butterflies and hoverflies.

The study also showed the number of flowering plants available is less important to the pollinators than having a variety of flowering species to forage across.

The surrounding landscape was also a critical determining factor. Solar parks managed for biodiversity that are located in disconnected landscapes with fewer features such as hedgerows appear to benefit pollinators the most.

The researchers say this is because those pollinating insects are more reliant on the [food resources](#) on offer in the solar parks than they would be for solar parks located in landscapes containing more food and habitat options.

Hollie Blaydes, of Lancaster University and lead author of the study, said, "Pollinating insects such as bees, butterflies and hoverflies have been in dramatic decline in recent years and there is a need to restore more resources for these species in our landscapes. One potential option is to use sites such as solar parks to help benefit biodiversity—however, until now [empirical evidence](#) has been lacking around how, and which, solar parks might best support pollinators.

"We've shown that through management decisions such as planting a variety of [flowering plants](#), solar parks can support insect pollinators and also those communities can be relatively diverse and abundant—particularly in those landscapes where there are few hedgerows and wildflowers for pollinators to depend on."

Professor Alona Armstrong, also of Lancaster University and Principal Investigator of the study, said, "This is the first time that pollinators have been systematically and repeatedly surveyed on solar parks across the U.K.—building on previous modeling work.

"This adds to the evidence showing that [solar parks](#), while helping to meet the U.K.'s renewable energy goals, and if managed correctly, also have the potential to support insect [biodiversity](#)."

**More information:** H. Blaydes et al, On-site floral resources and surrounding landscape characteristics impact pollinator biodiversity at solar parks, *Ecological Solutions and Evidence* (2024). [DOI: 10.1002/2688-8319.12307](https://doi.org/10.1002/2688-8319.12307)

Provided by Lancaster University

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