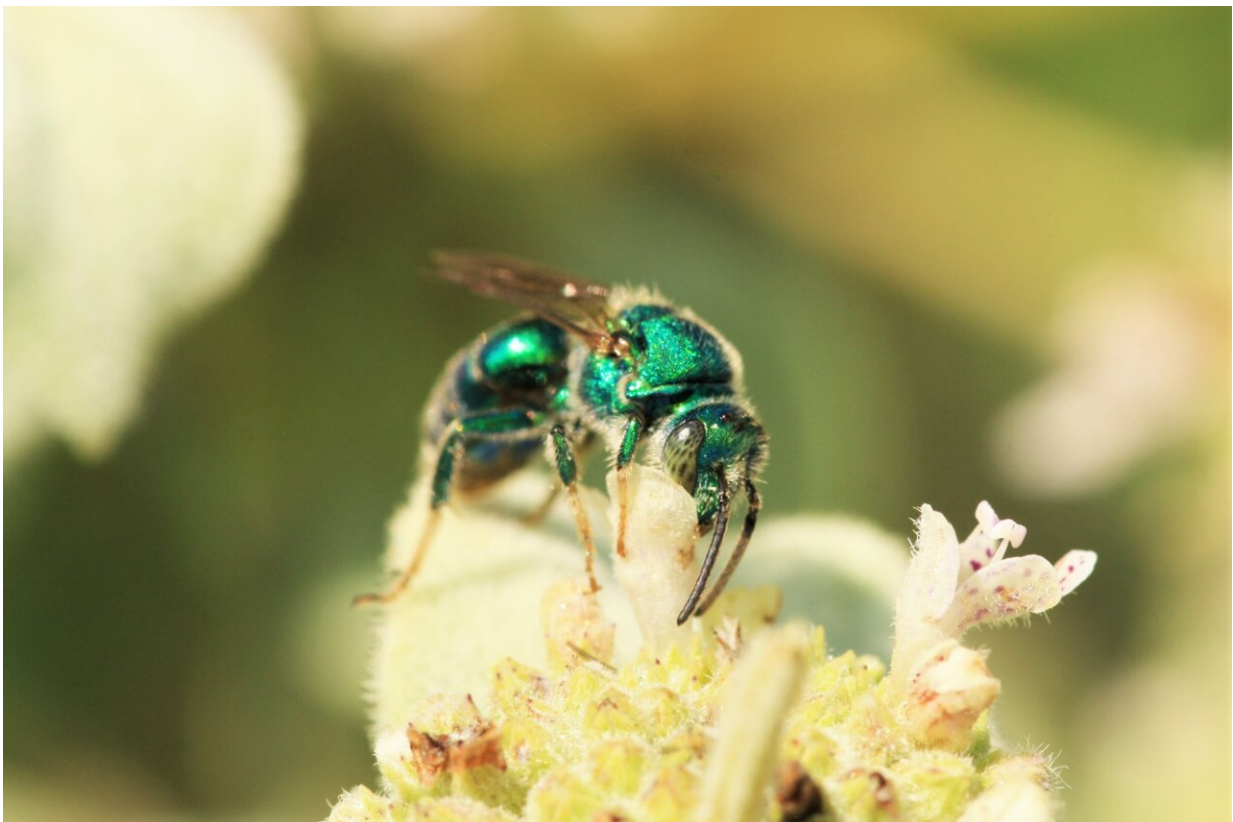


Providing blooms all season long may be key to attracting pollinators, no matter what landscape is near your garden

September 4 2024



Augochloropsis metallica visiting *Pycnanthemum muticum* (mountain mint) in one of the research gardens. Credit: Laura Russo, CC-BY 4.0 (<https://creativecommons.org/licenses/by/4.0/>)

A diverse and abundant flower planting that provides flowers in bloom all season may be more important to bees and other pollinators than whatever is surrounding the flower garden, according to a study [published](#) September 4, 2024 in *PLoS ONE* by Devon Eldridge from the University of Tennessee, US, and colleagues.

As we learn more about how critical pollinators (native and non-native [bees](#), butterflies, and other insects) are to our [food supply](#) and ecosystem, many people are planting pollinator-attractive flower gardens to help sustain these important and threatened creatures. Eldridge and co-authors investigated whether and how the context of these gardens (e.g. the surrounding local context and broader land-use factors) might impact the attractiveness of flower gardens for different bee species.

The authors worked with four types of [garden](#): three planted solely with plants from just one family—Asteraceae (daisies), Fabaceae (legumes), or Lamiaceae (mints)—and one garden composed of a mixture of plants from all three families.

They replicated all four garden types at five different sites representing a variety of surrounding land use: urban garden, forage grassland, mixed agriculture, forest, and organic farm. From July 13–August 17, 2020, they then sampled bee species in the garden plots as well as conducted local surveys within a 50 m radius of each garden on a weekly basis.

The authors collected 1,186 bees across 44 different bee species during 20.83 hours of sampling in the garden plots. When surveying the local areas surrounding the garden test plots, the authors collected 2,917 bees representing 52 different species over 16.67 total hours. The mixed agriculture garden site had the highest bee abundance among the specific garden surveys, while the area surrounding the urban garden site had the highest abundance among the surrounding local area surveys.

Individual plants' floral display (the number of flowers available on a plant) and the diversity of flowers in the wider local area did not affect bee abundance or species richness within the garden plots. Although there was a positive association between developed land use in a 2 km radius and bee abundance in the gardens, the effect was small. The largest determinants of bee community composition and [species richness](#) in the gardens were floral display size and variation in the garden plant species in bloom.

The authors note that all of their garden sites were located within "patchy," heterogeneous landscapes, and that gardens surrounded by habitats with more extreme and/or different land-use might show different results. Nevertheless, these results suggest that landowners have the power to promote local pollinator communities by conserving existing natural patches and/or planting more flowers, especially groups of flowers to provide blooms all season long—no matter what environment their garden may be situated near.

The authors add, "We often wonder how the area surrounding our gardens affects the pollinators visiting our flowers. In our study, we found that the number and types of flowers in the garden itself mattered more to pollinator abundance and diversity than the surrounding local or landscape context."

More information: Devon S. Eldridge et al, Do local and landscape context affect the attractiveness of flower gardens to bees? *PLoS ONE* (2024). [DOI: 10.1371/journal.pone.0309000](https://doi.org/10.1371/journal.pone.0309000)

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Citation: Providing blooms all season long may be key to attracting pollinators, no matter what

landscape is near your garden (2024, September 4) retrieved 5 September 2024 from <https://phys.org/news/2024-09-blooms-season-key-pollinators-landscape.html>

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