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## Moths Work the Pollination Night Shift, Visiting Some Flowers Bees Skip

A new study highlights the importance of moths as nocturnal pollinators in the English countryside



Silver Y Moth (*Autographa gamma*), feeding on fuchsia flowers at night in a garden. (David Tipling / Universal Images Group via Getty Images)

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smithsonianmag.com  
May 15, 2020 7:00AM

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Moths are more important than we think. Bees get most of the credit when it comes to pollination, but [new research](#) in the United Kingdom highlights [moths'](#) key role as nighttime pollinators.

Shrinking wilderness and the proliferation of pesticides have caused many to justifiably worry about the [plight of bees](#), which are conspicuous and rightly appreciated daytime pollinators. But because most moths sip nectar under the cover of darkness, their contributions mostly fly under the radar, and as a result they're studied less and offered fewer protections.

"There's this big misconception that all moths come and eat my clothes. That's not what happens at all," Richard Walton, a biologist at University College London and first author of the new paper, tells Matt McGrath of [BBC News](#). "Some of them happen to be visiting flowers and can be an important part of the pollination process."

Multiple moth species even appear to be responsible for pollinating the rare and captivating ghost orchid, as Douglas Main reported for [National Geographic](#) in 2019.

Moths are underappreciated pollinators, but are their populations also in global decline? The answer isn't clear-cut, but that doesn't mean there isn't cause for concern.

In recent years, studies reporting [huge, global population declines](#) in moths and other wild insects have gained significant attention. But, as science writer Ed Yong points out in a 2019 story for the [Atlantic](#), the truth is likely more complicated than the idea of an "insect apocalypse" suggests. Most research on insect population declines is highly localized, and scientists have long-term data for a limited number of regions. A [recent meta-analysis](#) of 166 surveys of 1,676 sites around the world shows the fate of arthropods overall may not be as dire as previously thought, but it's still not very good. What's undisputed is that insects provide [billions of dollars worth of vital pollination services](#) to human agriculture and that they are under threat in many parts of the world.

To better understand the contributions of night pollinating moths, Walton and his colleagues monitored nine ponds in agricultural fields in Norfolk county in the U.K. from March to October in 2016 and 2017.

Once a month, the researchers surveyed moths at night and bees, hoverflies and butterflies during the day. They swabbed 838 moths, 632 solitary bees, wasps, butterflies and hoverflies, and 1,548 social bees, such as honey and bumble bees, for pollen to figure out which plants the insects visited and how often.

The study found 45.5 percent of the moths were dusted with pollen from 47 different plant species—including seven plants that bees tend to ignore, the researchers report in the journal [Biology Letters](#). The solitary bees, hoverflies, and butterflies visited 45 plant species, and the social bees tallied 46 plant species.

By sheer numbers, the social bees rightly earn their reputation as super pollinators. However, Walton notes in a [statement](#), honey bees, bumble bees and their ilk "preferentially target the most prolific nectar and pollen sources."

Moths' diverse taste in flowers makes them a crucial ecological backup to the pollinators working the daytime shift and suggests that they pick up the slack to support plant species that honey bees skip.

"[Moths'] high diversity and abundance may make them critical to pollination in ways that we still need to understand," says Walton in a statement.

He adds that the study illustrates the "need for them to be included in future agricultural management and conservation strategies to help stem declines, and for more research to understand their unique and vital role as pollinators, including their currently unknown role in crop pollination."

#### About Alex Fox



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