

## Meet the Pollinators: The Night Shift

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Daytime pollinators – butterflies, hummingbirds, bees – underpin whole ecosystems with their colorful and sometimes noisy lives. So easy to observe and study, we could almost forget that even in the world of pollinators, when night falls, stars appear.

In the Northeast, the stars of the night stage are mostly moths, with one stunning beetle stealing the midsummer show. Why do we know so little about them? Well, we are usually not out when they are. And except for the big or bright ones -- such as the giant cecropia – largest moth in North

America, the luminescent luna – alluring and palest green, and the puzzling polyphemus – with eyespots on the back of its wings -- they aren't that easy to photograph. Besides, some night pollinators are decidedly not photogenic. They are also silent.

What do they do? The ones that eat, like the swift and agile-flying sphinx moths, visit flowers with deeply hidden nectar sources like tobacco, moonflower, and yucca. Light colored flowers such as evening primrose and datura, and strongly scented flowers such as jasmine and honeysuckle draw them. A moth will settle on a flower while getting nectar, and then carry pollen on its fuzzy chest (ventral thorax) to the next one. On the other hand, some, such as the giant silk moths luna and cecropia, don't eat anything at all, having left mouth parts behind in their final transformation from caterpillars, but will sometimes settle on a flower and carry its pollen to another as they search for mates.

Do you know the midsummer stars? Though several beetles help with pollination after dark, fireflies (*Lampyridae spp.*) steal the show. Orbs of flickering light, appearing and disappearing mysteriously about the yard, are all about attracting mates, but somehow, we can't seem to look away.



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We are just beginning to understand the important work being accomplished by nocturnal pollinators in their complex food web. Research recently conducted at the University College London and at Newcastle University in the UK shows that moths are likely major players in many pollination networks. UCL researchers observed many different types of moths transporting pollen from a diverse range of plant species, including some flowers that are not often visited by bees. Moths work hard, visiting more plants in a shift and traveling longer distances between patches of plants than bees. The one specialist pollination relationship so far discovered is of the yucca – the yucca plant is pollinated solely by the yucca moth, and the yucca moth larvae eat only yucca seeds.

To moths, and all nocturnal creatures, light pollution poses a deadly threat. Moths become disoriented and tend to be drawn more to the light than to their food sources, a fatal attraction. Tragic nights for ones that need moonlight and stars for navigation. For fireflies, artificial light makes it hard, and sometimes impossible, to find the tiny flashing of potential mates.

We look forward to learning ever more about the night shift of pollinators, playing out their important ecosystem pantomime in the dark while we are all tucked up in bed. Meantime, while the stars are out...

PLEASE TURN OFF THE LIGHTS!

*Resources:*

<https://www.fs.usda.gov/wildflowers/pollinators/animals/moths.shtml>

<https://theconversation.com/moths-do-the-pollinator-night-shift-and-they-work-harder-than-daytime-insects-138472>

<https://xerces.org/blog/the-night-shift-moths-as-nocturnal-pollinators>

<https://www.oneearth.org/how-moths-keep-our-world-blooming-pollinating-in-the-night/>

<https://www.gatheringplace.org/horticulturestories/posts/night-pollinators>

<https://gardengentle.com/gardening-for-the-night-shift-attracting-nocturnal-pollinators-and-wildlife>

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