

Moths: Pollinators of the Night Shift

by Adria Henderson

For years, the humble moth has existed in the shadows behind the spectacular and well-loved butterfly, forever compared to its beautiful lepidoptera cousin.

Recently, there's been a change in mindset towards these nocturnal flying insects with several articles expounding the virtues of this nighttime pollinator and its importance in the ecology of the backyard garden. As adults, moths are an essential food source for many animal species including birds such as martins, flycatchers, whippoorwills, bats, toads, and other small vertebrates. And moth caterpillars are extremely important as food for most of our baby songbirds including chickadees, nuthatches, bluebirds, and the rose breasted grosbeak. As entomologist Doug Tallamy, author of *Bringing Nature Home* and *Nature's Best Hope* says, "Caterpillars are like the bread of the diet of baby birds. They're a staple."

Moths are not only valued as an essential food source for other species but like bats are nocturnal pollinators. Planting pale or white fragrant flowers, flowers that open late afternoon or night, grow in clusters, provide easy landing platforms, and are ample nectar producers such as morning glory, heliotrope, four o'clocks, monarda, tiarella and oenothera, will attract pollinating moths to your nighttime garden. An interesting factoid: While most pollinators travel about to different gardens, moths may live their entire lives in one garden.

But for all their beneficial garden work, they've been generally considered pests of the night sky, relegated to electric moth zappers engulfing them in shots of flame or sprayed with insecticide as they gather around outdoor light fixtures. Asked in a recent interview if outdoor lighting affects insect populations, Doug Tallamy said, "Yes, particularly moths and those powerful lights that draw them in. The Saturniids [a family of large North American moths including the Luna Moth and Cecropia Moth] that are drawn into the security lights and never leave. A lot of these moths don't eat as a moth and so they emerge as an adult with all the energy they will have. If they spend it all flying around light, then they run out of energy and that's that. It's also a place where the bats come and pick them off. So, these night-time lights are death traps for moths and many other insects. Lastly, you can put motion sensors on your security lights or replace white bulbs with yellow LEDs. White lights draw insects all night long, exhausting them and making them easy prey but yellow bulbs attract few insects. If each of the millions of lights we turn on in this country, mostly out of habit, kill a few insects each night — well, you can do the math."

With the moth's new-found fame, it's not surprising that comparisons with their cousin, the butterfly, would arise. Physically, some differences are readily apparent. In most species of moths, wings are positioned vertically rather than the horizontal positioning of most species of butterflies. At rest, butterflies usually fold their wings back, while moths flatten their wings against their bodies or spread them out horizontally. Although butterflies often appear in spectacular colors, moths are generally not conspicuously colorful, with few exceptions; the luna and hummingbird moths are both beautifully colorful. Note: both luna and hummingbird moths have horizontal wing positions just like butterflies.

Many species of moths and butterflies overwinter in leaf litter such as luna moths, great spangled fritillary butterfly and woolly bear caterpillars (the Isabella tiger moth) another similarity in both the moth and butterfly.

The differences become more apparent when you compare their behavioral traits; moths are nocturnal and butterflies are diurnal, or active during the day. But they do work compatibility within these split shifts, with some minor exceptions. There are some moths active by day, most notably the hummingbird moth. Generally, after dark, moths, and bats, take over the night shift for pollination.

And there's one more tragic similarity between moths and butterflies. Moth populations, just like butterfly populations, have declined approximately 85% since the 1950s due to the use of chemical pesticides and loss of safe habitats. Additionally, a European tachinid fly, (Compsilura concinnata), introduced to control gypsy moth populations also kills the larvae of over 200 other species of moths and butterflies.

So, let's take Doug Tallamy's advice and change those white security lights to yellow bulbs or motion sensors, leave the leaves under trees to preserve moths and butterflies, and plant flowers that attract these amazing nightshift pollinators to our gardens.