

Lovely Lepidoptera

Pollinating Butterflies and Moths



What are Lepidoptera?

Moths and butterflies belong to the same biological group, Lepidoptera. Globally 180,000 species of Lepidoptera have been described, but considering we discover many new species each year, it's estimated that global species are closer to 300,000 to 500,000. The vast majority of these are moths, as scientists estimate there are ten times more moth species than butterfly species.



A white-lined sphinx moth



What is their life cycle?

Moths and butterflies follow the general life cycle of egg to caterpillar to pupa to adult. For some species, such as the migratory monarch butterfly, these stages can all take place within a few weeks. Some species typically remain in their cocoon (moths) or chrysalis (butterflies) for the whole winter before emerging as adults in the spring. Other species spend the winter as adults, producing alcohol to use like antifreeze and huddling into old trees and other hidden nooks to keep warm.

What are the differences between moths and butterflies?

Although we think of moths and butterflies as distinct animal groupings, the truth is a bit more complicated. In general, butterflies fly during the day and moths fly at night. However, some moths are more closely related to butterflies than to other moths and even fly during the day like butterflies, which makes telling them apart even more difficult. In North America, the easiest way to identify a moth versus a butterfly is by the shape and style of their antennae. Butterflies have clubbed antennae in North America, and moths here have feathered or comb-like antennae.



EPRI would like to acknowledge the support of Pollinator Partnership for developing the Lovely Lepidoptera fact sheet.

Learn more at www.pollinator.org and www.epri.com/pollinators

How do butterflies and moths pollinate?

Unlike bees, Lepidoptera do not typically seek out pollen and do not have any specialized physical features designed for pollination. While feeding on nectar, butterflies and moths will unwittingly pick up pollen on their legs, proboscis, or bodies and transfer it from flower to flower, aiding in the pollination process. Although butterflies and moths are not efficient pollinators, the sheer number of flowers they can visit helps them be effective pollinators, and some plants rely on them exclusively to reproduce.

Did you know? There are also many moths whose adult phases don't actually have mouth parts—which means that they don't eat, and hence don't visit flowers, thus aren't considered pollinators.

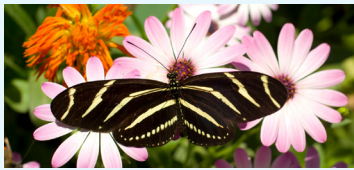


Hummingbird clearwing moths are day fliers

Butterfly pollination

Butterflies are diurnal (day-flying) and attracted to feeding on brightly-colored flowers with large heads which act as landing pads for them.

Butterflies are highly attracted to color and scent, and as a trend, butterfly flowers are smaller yet clustered, copious nectar producers, and conspicuously colored.



A zebra longwing butterfly

Moth pollination

Although some moths take flight during the day, by and large moths are nocturnal pollinators attracted to those flowers that open at dusk or at night.

Flowers pollinated by moths are typically very fragrant and lighter in color. These traits allow these flowers to attract moths at night, as the lighter-colored flowers are better at reflecting moonlight.



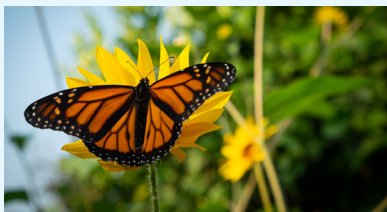
An armyworm moth. (Photo by Univ. Arkansas CCBY 2.0)

FUN FACTS!

1 Moths have an awesome sense of smell—being night fliers, their sense of smell helps with communication, connection, and predatory avoidance. Females release complex behavior-changing chemicals called “pheromones” that males follow, and once they're close enough, males also release their own pheromones to help court the females.

2 The Yucca moth, found across North America, is the only pollinator of a long-lived grassland perennial called soapweed—the two are in a co-dependent relationship—the plant needs the moth and the moth needs the plant.

3 The longest recorded flight of a monarch butterfly was one tagged in eastern Canada and recovered in central Mexico, an approximate distance of 2,690 miles!



The world-famous monarch butterfly



A Yucca moth (left) and its host, the Yucca (right)

4 Butterflies are not a nectar-limited species, meaning it isn't just flowers we should focus on to help their populations. Butterflies also feed on mineral rich soil, tide pools, animal droppings, and urine to gain nutrition.

5 Monarch and other emetic butterflies store chemicals in their bodies that make predators vomit. This helps protect them from getting eaten! Butterflies who do not store these chemicals are non-emetic and use other types of protection to avoid predators.