

# Appreciating Flies

by Danae Wolfe

**L**ET'S BE honest. Flies don't exactly have the best reputation in the garden. Some species bite—like horse flies and mosquitoes (yes mosquitoes are flies!)—while others are just a little bit obnoxious—like those pesky house flies that always find their way indoors but can never seem to find their way out. But I invite you to suspend your biases at least temporarily while we take a dive into the world of flies to uncover their importance in our gardens.

## WHAT IS A FLY?

From dragonflies and damselflies to butterflies and mayflies, a great many insects have “fly” in their names. But despite the moniker, these insects are not actually flies.

True flies are in the order Diptera (meaning two-wing) and can be distinguished from other flying insects by a variety of physical characteristics. For starters, while most insects have two pairs of functional flight wings, true flies have only one. A second pair of modified hindwings called halteres serves as a sensory organ that acts as a mini gyroscope and helps flies with impressive aerial acrobatics.

Flies, like bees and butterflies, undergo complete metamorphosis and develop through four life stages—egg, larva, pupa, and adult. Adult flies generally have one pair of antennae and one pair of large, compound eyes. Many species also have three simple eyes, called ocelli, on the top of their head.

Mouthparts vary among species depending on food preference. Many flies



In addition to providing ecological services such as pollination, predation, and decomposition, flies are an important part of many food webs, serving as prey for creatures like this crab spider.

have lapping and sucking mouthparts, while others, like mosquitoes and horse flies, have piercing and sucking mouthparts that help the insects pierce skin when feeding on blood.

## GARDEN FRIEND OR FOE?

So, what good is a fly in the garden? Globally, there are nearly 125,000 species of flies, and they bring many benefits to home landscapes and surrounding habitats including predation, pollination, decomposition, and even parasitism. Additionally, the eggs and larvae of many—including mosquitoes—are important food sources for fish, amphibians, and other wildlife. Below are three types of beneficial flies to be on the lookout for. (See the September/October 2021 issue for an article about hover flies and robber flies.)

## COMMON BENEFICIAL FLIES IN THE GARDEN

### Long-legged Flies (family Dolichopodi-

dae) Easily distinguished from other flies by their long, slender legs, long-legged flies are welcome visitors in the garden due to their predatory behavior. But be careful not to blink or you might miss them as they flit from one leaf to another. Despite their small size, long-legged flies are quite showy. Many species in this family are metallic green, blue, or copper, making the insects glisten in the sunlight like little gems. Long-legged flies are fierce predators, feeding on small insect pests like mosquito larvae, thrips, aphids, mites, and springtails.

### Blow Flies (family Calliphoridae)

Blow flies are often called filth flies due to their food preferences, which include dead and decaying organic matter and dog waste. But take a closer look. Blow flies not only pollinate flowers as they forage for nectar as adults, but they also play a role in decomposition, which is an important part of the Earth's

## Resource

**Garden Allies: The Insects, Birds & Other Animals that Keep Your Garden Beautiful and Thriving** by Frédérique Lavoipierre. Timber Press, 2021.



Long-legged flies are so named for their long, stiltlike legs. These small flies prey on many pest arthropods in the garden, including mosquitoes, thrips, aphids, and mites.

carbon cycle. The flies lay eggs in animal carcasses, which then hatch into larvae (also called maggots), that feed on the carcasses before pupating and completing their life cycle. Blow flies are often the first insects to visit newly dead animals, kickstarting their decomposition; other insects and organisms appear later to continue breaking down the organic matter. This process helps recycle nutrients back into the environment in an ongoing balance of energy exchange.

**Tachinid Flies** (family Tachinidae) Larvae of most tachinid flies are parasitoids (insects whose larvae live as parasites that eventually kill their host), with many being endoparasites (parasites that live in the internal organs or tissues of their host). Unlike a parasite, a parasitoid always kills its host. Tachinid

flies attack the larvae of many types of pests, including cabbage worms, corn ear worms, Japanese beetles, Colorado potato beetles, cucumber beetles, and spongy moths, to name just a few. These flies lay eggs on a host insect or on a leaf which is then consumed by the host. When the eggs hatch, larvae burrow into the host and begin feeding. Eventually, the tachinid larvae pupate and emerge from the host as adult flies. Though their hosts meet a gruesome end, tachinid flies provide important pest control for many garden and agricultural pests.

### SHOO FLIES

Despite their ecological services, there may still be times when preventing flies from visiting in and around the home and garden is needed. Mosquitoes, for ex-

ample, are the deadliest animal on Earth due to their ability to vector disease—but keep in mind that only a small fraction of mosquito species are capable of vectoring disease to humans, and many are important food sources for wildlife.

Avoid devices like insect zappers, which attract and kill insects non-discriminately, including precious beneficial bugs like bees and butterflies. It's best to employ proactive preventative measures instead.

Most unwanted flies can be deterred through simple measures like keeping the garden free of standing water and waste. Ridding your landscape of standing, stagnant water will prevent mosquitoes—which are aquatic in their larval form—from finding suitable breeding sites. Refresh bird baths and butterfly puddlers regularly and remedy any drainage issues in the yard that could attract these biting insects.

For flies attracted to waste, be sure to securely cover garbage pails. If you keep a compost pile, bury your wet or green ingredients (like food scraps) with brown ingredients (like dry leaves) to prevent flies from being attracted to rotting food. And never compost meat scraps, which can attract flies and rodents, smell bad, and possibly harbor bacteria like *E. coli*, *listeria*, and *salmonella*. If you have a dog, it's also a good idea to pick up and properly dispose of dog waste, which will ensure you're not attracting pests—and also keeping you on good terms with your neighbors!

### A FINAL WORD

Many insects seem pesky, but I encourage you to reconsider the many nuanced roles that these creatures play in the larger environment. Every living thing eats and is eaten by something else, whether in life or in death. And many creatures offer additional ecosystem services that are not easily replaced in their absence. Only when we truly understand the value of creatures and their roles in the world can we garden in balance with nature. 🍷

*Danae Wolfe is a photographer and conservation educator based in Wooster, Ohio. She manages Chasing Bugs (www.chasingbugs.com), a platform that promotes insect and spider stewardship and conservation.*



Above, left: Often called filth flies, blow flies aid in the decomposition of dead and decaying organic matter. Above, right: Unlike most species of tachinid flies, which are covered in coarse, bristly hairs, *Gymnosoma* species have few bristles. These flies lay their eggs on stink bug eggs and nymphs, helping keep these garden and agricultural pests in check.