

Beneficial Insects: Nature's Pest Control

Beneficial insects are good insects that can prevent some insect pests, or bad insects, from harming plants. We can encourage and prepare the conditions for beneficial insect populations. The first step is to identify the beneficial insects.

Lady Beetles (Ladybird Beetles or Ladybugs)

Family: Coccinellidae



Adult.



Larva.

What it looks like: Lady beetles are small, oval, rounded and often brightly colored.

Where it lives: Lady beetles are found on plants that have a lot of aphids. They hibernate as adults, commonly in large groups under leaves and debris. To hibernate means to spend the winter in a dormant state.

Why it is beneficial: Most of this family is predatory as larvae and adults. They eat aphids, scale insects and mealybugs.

Fun fact: A native species is a species that normally lives in a specific habitat or region. One of the native species of Lady beetles is the Two-Spotted Lady Beetle, which is orange-red, with one black spot on each wing cover. A species often seen on houses in the autumn and indoors over winter is the Multicolored Asian Lady Beetle, which varies in color and number of spots.

Ground Beetles

Family: Carabidae



Adult.



Larva.

What it looks like: The family Carabidae (Ground Beetles) has many hundreds of species that vary in size, shape and color. Most of these insects are somewhat flattened, dark brown or black, and shiny.

Where it lives: Ground Beetles may be found under stones, logs, bark, debris or running on the ground. Most of them hide during the day and feed at night.

Why it is beneficial: Nearly all Ground Beetles eat other insects and many are beneficial by feeding on pest insects. There are some that feed on slugs and snails.

Lightning bugs; Fireflies

Family: Lampyridae



Adult.



Larva.

What it looks like: During the early summer the adults fly around in the evenings and are identified by their blinking light.

Why it is beneficial: The larvae feed on various smaller insects, slugs, and snails.

Fun Fact: The Fireflies or Lightning bugs are neither flies nor bugs, but are beetles.

Praying Mantids

Family: Mantidae



Adult.



Egg case.

What it looks like: Adults and the immature, not fully developed, stages of the praying mantis look similar. The mantids wait to ambush their prey with the front legs in an upraised position that gives them their name.

Why it is beneficial: These are highly predatory insects that feeds on a variety of other insects. Praying mantids are cannibalistic and will eat one another. Only a few will survive under home garden conditions.

Fun Fact: Praying mantis egg cases may be found on tree twigs and in fields. Egg cases may be gathered by cutting the twig you find them on, then tying the case to a branch in your garden. The young come tumbling out of their case by the hundreds in the spring.

Lacewings

Families: Chrysopidae and Hemerobiidae



Adult.



Larva with aphids.

What it looks like: Lacewing adults are about $3 \frac{1}{4}$ of an inch or less in length. They have delicate, gauzy, green or brown wings. Some species have jewel-like golden eyes. The larvae are grayish brown, with sharp curved jaws that extend beyond the head.

Why it is beneficial: Larvae crawl along the leaf surface in search of aphids, scales, mealybugs, thrips, mites, and insect eggs. Full-grown larvae can consume over 100 insects a day.

Dragonflies



Adult.

Multiple Families in the Order Odonata



Immature or Nymph.

What it looks like: The adults hunt for insect prey using their large eyes and scoop it up with their spiny legs, all while flying.

Where it lives: Adult dragonflies can be seen actively hunting flying insects, but tend to be more common near water. The immature dragonfly stages (nymphs) live underwater, and feed on whatever they can catch, including aquatic insects and sometimes even small fish.

Why it is beneficial: They eat many small midges, gnats, and mosquitos, but generally not enough to fully control the populations.

Fun Fact: Sometimes larger prey are captured, such as butterflies.

Hover Flies (Syrphid Flies or Flower Flies)



Adult.

Family: Syrphidae



Larva (right) with aphids (left).

What it looks like: Hover Flies may be brightly colored, and may look like wasps and bees hovering over flowers. However, these flies do not sting.

Why it is beneficial: The larvae of most species are predatory. They feed on aphids or the young of termites, ants, or bees.

Fun Fact: Not all Hover Flies are beneficial. The Narcissus Bulb Fly has larvae that damage bulbs of daffodil and related garden flowers.

Antlions (Doodlebugs)

Family: Myrmeliontidae



Adult.



Larva.



Pits made by larvae.

What it looks like: Antlion larvae have long sickle-shaped mouthparts which they use to grab their prey.

Where it lives: Antlions are most common in dry sandy soils.

Why it is beneficial: The larva makes a pit in sandy soil and waits underground at the center. When an ant stumbles in, the ant lion larva flicks sand at it until it slides down the pit into its jaws.

Parasitoid Wasps

Families: Brachonidae, Ichneumonidae, and others



Ichneumon wasp adult.



Braconid wasp pupae on a caterpillar.

Why it is beneficial: Parasitoid wasps typically have a larval stage that feeds on the inside of the host insect, and the larvae slowly eat the host, killing it. Some of the wasps emerge to develop into pupae in the outside of the host, others develop into pupae inside and emerge from the host as adults. A pupa is the stage of development between immature and adult insects.

Fun Fact: There are hundreds of species of parasitoid wasps that can be important in controlling populations of other insects. The most commonly noticed ones are Braconid and Ichneumonid wasps. Many other parasitoid wasp species are much smaller, only a few millimeters long.