

# OUR NATIVE POLLINATORS

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When we think about bees, we typically think of honey bees or bumble bees. These two bees actually represent only a very small fraction of the diversity of bees in the world. In California, we have about 1,600 species of native bees. Some are social but most are solitary, including leaf-cutter bees, sweat bees, digger bees, mining bees, mason bees, and carpenter bees.

Honey bees are native to Europe and are the only bees that create large perennial colonies. Only the native bumble bees create colonies but theirs are annual. Most native bees are solitary nesters and do not store honey, but simply provide food for their own brood.

Native bees can be as tiny as a pinhead, like some species of sweat bees, or as large as a man's thumb such as the carpenter bees. Some native bees are specialist pollinators. Others have very short flight periods that are perfectly timed to "their" native plants. Bees are vegetarians; they feed on nectar, their source of carbohydrates for energy, and pollen, which provides the protein needed for raising larvae. Female honey and bumble bees visit flowers to collect pollen—carrying it, mixed with nectar, in a special pollen sac called a *corbicula*. Males don't collect pollen but both sexes sip nectar for energy.

## How to tell the difference:



**HONEY BEES:** Robust and hairy, with a 'friendly' look. Abdomens are striped in yellow and black; Faces and thorax are yellow and hairy. A European import.



**BUMBLE BEES:** Large bees, about 1" in body length. Always hairy, black and yellow, some species with orange. They carry dry pollen in a *corbicula* on their hind legs. They are the first bees in early spring and the last bees still flying in fall.



**CARPENTER BEES:** Very large bees, 1/2 – 1-1/2" in body length. Black and somewhat hairy with a shiny, smooth, black abdomen, and dark wings. Males are territorial and will buzz humans but rarely sting.



**SWEAT BEES:** Sometimes tiny, often with a beautiful metallic sheen; Some are attracted to human sweat from which they get salts.



**COMMON LEAF-CUTTER BEES:** Gray and white striped abdomens. They cut little circles of leaves or petals to build their brood cells.



**ORCHARD MASON BEES:** Smooth and dark, with a metallic sheen. They will use nesting blocks with small holes in them or small bamboo canes, sealing the individual nesting tubes with mud.

**WASPS:** Streamlined and smooth, with a 'meaner' look, no hairs on the body. Sort of striped with more varied patterns on body armor. Wasps are carnivorous but visit flowers in search of prey, distributing pollen as they go.



## Other Pollinators

There are a lot of bee mimics among flies, moths, and beetles that display the color and behavior patterns of honey bees and bumble bees so they can avoid predation.

syrphid fly



### Flies

These are important pollinators. Many are bee mimics. Most have smooth abdomens, often striped in yellow and black; some mimic Bumble bees, and are hairy. Many adults pollinate as they feed on nectar. Unlike bees, they hover and dart around flowers.

**SYRPHID, HOVER OR FLOWER FLIES:** Small to medium sized bee mimics often seen around flowers. Many species have larvae that consume aphids and other soft-bodied small insects.

bee fly



**TACHINID FLIES:** About the size of a house fly but much more hairy, and may have very heavy bristles at the tip of the abdomen. The adults pollinate while feeding on nectar.

**BEE FLIES:** These are bee mimics and important pollinators of wildflowers in spring. While hovering over flowers, adult bee flies feed on nectar through a long projecting proboscis.

**BLACK SOLDIER FLIES:** Adults are large, somewhat flattened, and resemble a wasp, sitting with wings folded over their back. The adults do not feed but are found around flowers. The larvae prey on other fly larvae and live in decomposing organic matter.

## Beetles

Beetles were among the first creatures on earth to visit flowers. They pollinate as they feed on pollen and nectar but they are messy and accidental pollinators without any affinity to a particular species, and sometimes they damage the flowers parts.

**LADYBIRD BEETLES:** ‘Ladybug’ is an incorrect term—they are beetles, not bugs! Both the adults and their larvae prey on soft-bodied insects like aphids, making them great to have around the garden even if they aren’t pollinating anything.

## Butterflies and Moths

Butterflies and Moths are not as important for pollination as the bees, but it’s always lovely to see these jewels on the wing. There are always exceptions but most butterflies fly during the day and visit brightly colored flowers. Moths fly at dusk and at night and visit white or pale yellow flowers, making them a key pollinator of night-blooming flowers.

## Hummingbirds

Bright, tubular flowers like those on penstemon and California fuchsia will attract hummingbirds. Males are known to protect rich habitats. Both sexes will repeatedly visit known nectar sources, known as traplining. Hummingbirds also forage for many tiny insects and spiders.