



Native Bees: Honey Bee Pollinator Partners

by Sussex County Master Gardener Jessica R. Clark

This two-part series will explore why we need honey bees and native bees, some similarities and differences between them, and simple ways we can protect bees in our own backyards.

A world without pollinators would be a world without apples, watermelons, blueberries, strawberries, chocolate, almonds, melons, peaches, pumpkins, tomatoes, and many flowers and other crops.

Pollinators visit flowers in their search for nectar and pollen. During a flower visit, a female pollinator will collect



Master Gardener Photo

Honeybee

Many plants cannot reproduce without pollen carried to them by foraging pollinators. Without pollination, the plants would not set fruit or seed, the primary means of reproduction for many plant species.

protein-rich pollen as the principal ingredient of food caches that feed her developing offspring. While foraging, she may accidentally brush against the flower's reproductive parts, unknowingly depositing pollen from a different flower. The plant then uses the pollen to produce a fruit or seed.

Honey Bees VS Native Bees

Similarities and the differences between them.

When most people hear "bee" they automatically think of the honey bee - a bee that is not native to North America. Colonists brought honey bees from Europe beginning in the 1620s as a source of wax and sugar.

Honey bees are vital to agriculture and the economy. Since the advent of modern agriculture in the 1930s, boxing up honey bees and moving them around the country to pollinate crops, contributes to more than \$15 billion of crop production annually.

Bumble bees (which are native) are also commercially valuable native pollinators of crops. According to a 2015 analysis by the International Union for Conservation of Nature (IUCN Bumble Bee Specialist Group), 28 percent of North America's 47 bumble bee species face

Honey Bees and Native Bees are in Peril

Bees and other animal pollinators face many challenges in the modern world. Habitat loss, disease, parasites, pesticides, environmental contaminants and climate change have all contributed to the decline of many pollinator species.

According to Laura Tangley, author of *The Truth About Honey Bees* published in July 2021, honey beekeepers lose more than 40 percent of their colonies each year. Honey bees experience a phenomenon called colony collapse disorder that occurs when the majority of worker bees in a colony disappear, leaving behind a queen, plenty of food and a few nurse bees to care for the remaining immature bees and the queen. The reasons for the disappearance of these worker bees continue to be studied and may include the causes listed in the preceding paragraph.

The term “native bee” refers to any of a large and diverse

group of wild bees indigenous to North America. According to the Xerces Society, an insect conservation group, North America is home to more than 4,000 species of native bees.



Master Gardener Photo

Bumblebee

They range in size from 1/4 to 1 inch, and come in a variety of colors - often with stripes of red, white, orange, or yellow. Their names often reflect their nest building behaviors: plasterer bees, leaf cutter bees, mason bees, digger bees, and carpenter bees.

Scientists know little about the population status of native bees, but the data they do have indicate that many species are in decline for the same reasons as honey bees. Competition with honey bees may also play a role. In a 2017 report in *Conservation Letters*, researchers calculated that within a three month period, honey bees in a typical 40-hive apiary collect the

some level of extinction risk.

Honey bees and bumble bees are “social” bees; they live in colonies and divide the work of building the nests, caring for the offspring, and foraging for pollen and nectar. Honey bees live in hives. Bumble bees nest in dry, dark cavities or underground in abandoned rodent holes, under sheds, and in compost heaps. Above ground, some bumble bees make nests in thick grass, in bird boxes, lofts, and in trees.

Honey bees make large amounts of honey so the entire colony can survive the winter. Bumble bees make a small amount of honey, just enough to feed the colony for a few days during bad weather. Bumble bees share the work and have overlapping generations throughout the spring, summer, and fall.



equivalent amount of pollen and nectar as 4 million solitary wild bees. Native bees who nest near honey bees often suffer a high incidence of illnesses that are spread by honey bees, including deformed wing virus and the parasite *Crithidia bombi*.

Native Bees – Important Pollinators

With the decline in honey bee populations, native bees are stepping in as important pollinators. Native bees collect pollen from flowering plants to feed their offspring and in doing so, pollinate the plants they visit. They also pollinate trees and wildflowers, which in turn provide food for wildlife and habitat for other beneficial animals.

Like honey bees, native bees feed on nectar while gathering pollen to take back to their nests as food for their young. In the process of gathering pollen, native bees pollinate flowers, often doing a better job than honey bees on certain crops such as apples, berries, alfalfa, and almonds. In areas where cool temperatures limit honey bee activity during the spring blooming of fruit trees, native mason bees do the job, because they are better adapted to cool weather. While honey bees are still very important pollinators, native bees can provide “pollination insurance” during times when honey bees are not available.

Part 2 of series Part 2 of this series will describe some native bees common to Delaware and ways we can protect these important creatures in our own backyard.

For questions on this subject or any gardening topic call the Master Gardener Helpline: In New Castle County, (302) 831-8862; in Kent County, (302) 730-4000; and in Sussex County, (302) 856-2585 x 535. The Master Gardeners monitor the Helpline in the winter but it may take a few days to get back to you.

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Author



Master Gardener
Jessica R. Clark

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