

GARDENING FOR NATIVE BEES



Honeybees are the best-known members of the vast bee family, which includes over 20,000 known species. Less familiar native types, however, play a vital role in our gardens and fill a key niche in healthy ecosystems. **The ongoing building on and paving of meadows, woodlands, and other open spaces is reducing the habitat of native bees and threatening their populations.** With a few simple strategies, gardeners can turn their plots and pots into a link in the chain that protects biodiversity and sustains native bees.

Who Are They?

Unlike honeybees, nearly all of the bees native to the mid-Atlantic region (*and the overwhelming majority of other species*) do not form colonies or hives. They are solitary, with each female building her own nest and laying broods of up to about 10 eggs that she alone cares for. Native bees tend to have short lifespans as flying adults—a few weeks, in many cases—so they do not take time to make honey. The nests are primarily underground in tunnels and burrows, but some types live in holes in logs and stems.

The differences in their behaviors and preferred plants separate native bees into five basic types.

Mason bees, also called orchard bees, have stout, bristly bodies that may be black or metallic blue or green. They get their name from the habit of sealing off the cells where they lay their eggs with a mortar-like application of mud. They lay their eggs in small natural cavities such as woodpecker holes, insect holes, and hollow stems. They also will use nesting cavities made by drilling holes in wooden blocks or formed with cardboard tubes or paper straws. Mason bees are so efficient that one, two, or three females can pollinate a mature apple tree.

Miner bees, or chimney bees, are slender and small with furry, black-and-yellow bodies and long, wasp-like wings. The females dig tunnels in the soil, using the loose earth to build a chimney-like turret. While the bees are solitary in their reproduction and brood care, the nests are often clustered together in close quarters. Miner bees have been known to nest in the same location for many years.

Squash bees, also small with black and yellow markings, are true specialists. In the early morning, the males can be seen darting around cucumber, squash, and gourd flowers, searching for mates. Later in the day you may catch them dozing in the withered flowers. The females forage only on the flowers of cucurbits, carrying the pollen on the hairs of their hind legs. Their nests are vertical tunnels a foot or two deep in the soil.

Sweat bees are typically black or brown, but some types are metallic green or blue, with red, yellow or green markings. They are generalists, pollinating strawberries and blueberries, as well as many types of flowers. Different species are active early and late in the season. They prefer to stay within a quarter-mile of their nests and they live alone. Sweat bees don't tend to be aggressive, but they are attracted to the salt in perspiration.

Bumblebees are the largest native bees, and they also fly the farthest in search of food. Active from spring to fall, they pollinate a wide range of plants and are especially important to legumes. Bumblebees usually nest in the ground or in cavities in trees. Bumblebees are the only native bees that form colonies and work together to produce and raise the next generation.

What Do They Need?

Blooms All Season

Most essential to healthy bee habitat is a variety of plants that ensures a steady supply of nectar and pollen from early spring to fall. Nectar is the main energy source for adult bees. **Pollen, rich in protein, nutrients, and oils, is primarily used by bees to feed their developing larvae.** Solitary females of many native species roll the pollen into nectar-infused balls of "bee bread" and lay a single egg on each ball. Different species produce young at different times, so having flowers blooming all season provides for the needs of the widest range of native bees. **Note that dandelions in your lawn can be a valuable nectar source for the first bees emerging in spring.**



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What Do They Need? cont.

Water Source

Like all other creatures, native bees need a steady supply of water to drink. **They will sip at bird baths, puddles, and drip irrigation hoses.** Even better, you can create a dedicated bee watering station with a saucer filled with marbles, stones or corks on which they can perch. Set it in a sunny spot where the bees can congregate without being disturbed by human traffic. **Replenish daily.**

Safe Shelter

To encourage native ground-dwelling bees to nest, set aside an area of your yard to leave uncultivated and unmanaged. Let the grass or weeds grow without mowing and allow a few tree branches to stay on the ground. For above-ground nesters, you can create artificial nest sites by putting out bundles of hollow stems, such as bamboo poles, or paper drinking straws. Mason bees and other tunnel-building species will nest in blocks of wood drilled with holes.

Protection From Poison

Broad-spectrum pesticides (*formulated to kill a wide range of insects*) are lethal to bees. Many pest sprays sold for garden use are harmful, but the worst may be a class known as “neonicotinoids,” because they leave residues in pollen, which can poison bees for weeks after application. Best strategy: avoid using pesticides of all kinds in your garden and let the natural food chain take care of destructive insects.

What Should You Grow?

While just about any flowering plant will help support native bees, the best choices are native plant species, because they evolved together with the insects in your region. Many native plants that support bees, such as violets (*Viola spp.*), may already be growing in your yard, so all you have to do is let them grow. Here are a few choices for each season.

Early spring: Vernal witchhazel (*Hamamelis vernalis*), pussy willows (*Salix discolor*), liverwort (*Hepatica acutiloba*), rue anemone (*Thalictrum thalictroides*), spring beauties (*Claytonia virginica*) and bloodroot (*Sanguinaria canadensis*).

Late spring: False indigos (*Baptisia spp.*), lupines (*Lupinus spp.*), basswood (*Tilia americana*), serviceberry (*Amelanchier spp.*), eastern redbud (*Cercis canadensis*), and haw- thorns (*Crataegus spp.*).

Summer: Blanketflowers (*Gaillardia spp.*), coneflowers (*Echinacea spp.*), giant blue hyssop (*Agastache foeniculum*) and milkweed (*Asclepias speciosa*) and common milkweed (*A. syriaca*).

Fall: Asters (*Symphotrichum spp.*), perennial sunflowers (*Helianthus spp.*), goldenrods (*Solidago spp.*), and Joe Pye weeds (*Eutrochium spp.*).

You can supplement the native plants in your yard with popular annual flowers, such as bachelor’s button, cosmos, and zinnias. Let herbs including basil, dill, fennel, mint, and lavender bloom in your garden, too.

FAST FACT

More than **90 percent** of bees don’t live in hives. **About 70 percent** of solitary bee species nest underground in tunnels and burrows, while the **remaining 30 percent** nest above ground, in holes in logs and stems.

LEARN MORE

[PHS McLean Library Pollinators Subject Guide](#)

[Penn State Extension: Bees in Pennsylvania: Diversity, Ecology, and Importance](#)

[Xerces Society: Pollinator-Friendly Native Plant Lists By Region](#)

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