



Pennsylvania Pollinator Series



3.2. Pollinator Nesting Habitat

Insects, such as ants, bees, beetles, butterflies, flies, moths and wasps, are the main pollinators in the Northeastern United States. Unlike birds or mammals, most insects conclude parenthood by laying eggs that will hatch larvae like caterpillars and grubs able to forage on their own. Along with ants and numerous species of wasps, many bees need undisturbed habitat where they can nest by burrowing, and insulating or waterproofing tunnels or small cavities. These nests offer both protection for their brood and stored food against elements and predators.



The Leafcutting Bees line their cylindrical burrow nests with sections of leaves .

Bees can be either social or solitary, depending on the level of cooperation between closely related females. Social bees have colonies of hundreds (bumblebees) or tens of thousands (honeybees), and seek to nest in well sheltered underground or aboveground cavities. Feral honeybees may take over hollow tree trunks or other large cavities, while bumblebees prefer smaller cavities, such as mice nests or even bird houses.

Solitary bees, more than 95% of the more than 3,500 native bee species, do not cooperate with each other. They can burrow tunnels in the ground (mining bees), in wood (carpenter bees), and in dead, hollow branches (small carpenter bees, sweat bees), or they can take over existing tunnels made in dead wood by beetle larvae (mason and leafcutter bees).

About 70% of solitary bees nest in the ground, while 30% nest in

wood. Often, a good ground nesting site can be inhabited by thousands of solitary bees year after year. Good nesting sites for a wide variety of native ground-nesting bees can be created by maintaining some bare or sparsely planted ground, which has good sun exposure and drainage. Similar results can be accomplished by allowing the lawn to grow more in a sunny spot with no major foot traffic.

Once such habitat is created by the homeowner, soil cultivation, excessive mulching, or pesticide application should be avoided. Often the sand banks on golf courses represent idyllic nesting habitats for ground-nesting bees. Unfortunately, such nesting sites are usually destroyed because of fear of bee stings, even though these types of bees do not defend their nests.

An infamous wood-nesting bee is the carpenter bee, which tunnels

in structural wood that is exposed to sun. Damage can be mitigated by painting the exposed structural wood, and wherever possible keeping snags (standing trees that are partially or completely dead), or piles of wood in a less frequented corner of the garden.

Other wood-nesting bees reside in previously made tunnels, or nest in plants with hollow or soft pith stems or twigs, e.g. brambles. In both scenarios, the bees need to insulate and partition the tunnels with mud (mason bees) or plant fiber (carpenter bees, leafcutter bees, small carpenter bee).

While mason bees line their tunnels with material quarried from moist soil, leafcutter bees cut small pieces in the foliage of various plant species and use them to partition the nest. Mason and

leafcutter bees are some of most important pollinators, and their tireless work on constructing and provisioning their nest is fascinating to watch.

To encourage mason bees, gardeners can create mud puddles by letting a garden hose or a punctured plastic bottle filled with water trickle over some bare ground. This practice will also provide a source of water and minerals for many other species of bee.

When the size of the garden or liability concerns do not allow the homeowners to keep snags or piles of wood in the garden, they can provide wood-nesting bees and bumblebees with manmade domiciles. Bamboo shoots, dead hollow reed stems, or drilled blocks of wood are excellent nesting habitats for mason and

leafcutter bees. Bumblebees can be attracted to, and housed in shoe-size boxes, but the rate of colonization can be very low. For more information, please read the "Manmade Bee Domicile" section.

Source: Cuppy Ph.D., Hazlitt Alva *Beauties and Wonders of Land and Sea* (Springfield: Mast, Crowell & Kirkpatrick, 1895) 99

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