

*Information below is adapted from the Maine NRCS 'Structures for Wildlife Job Sheet'.*

Native bees are important pollinators both in agriculture and in the natural world. Their pollination in agriculture provides key economic benefit to farmers and food for consumption. In the natural world, their pollination services provide food for wildlife in the form of berries and fruit. Many key, wildlife friendly trees and shrubs, are pollinated by native bees.

The following is printed with permission by The Xerces Society for Invertebrate Conservation, <http://www.xerces.org/>. The information below is adapted from *Nests for Native Bees*, written by Matthew Shepherd.

Native bees are a vital part of our environment. They ensure healthy wildflower communities and harvests of fruit and vegetables. Bees are suffering from the fragmentation and loss of their habitat and extensive use of pesticides.

Although flowers that provide nectar and pollen are important for bees, a lack of nesting sites is probably a greater threat to native bees than a lack of flowers. Unlike butterflies and other pollinator insects, bees make nests in which they create brood cells for their offspring. In many modern landscapes, a desire for neatness has usually resulted in the removal of bare or semi-bare ground, dead trees, and untidy corners of rough grass—all important nesting sites for bees.

The good news is that there are several easy ways in which bee nesting sites can be made. Providing suitable nest sites is a simple thing that we all can do to improve our gardens, farms, parks, and wild areas for these important insects.

#### Nesting sites for solitary wood-nesting bees

The great majority of bees nest on their own, many in abandoned beetle tunnels in wood. With wood nests, providing a range of hole sizes between 3/32" and 3/8" (2.5 mm to 10 mm) in diameter will support a wide range of bee species.

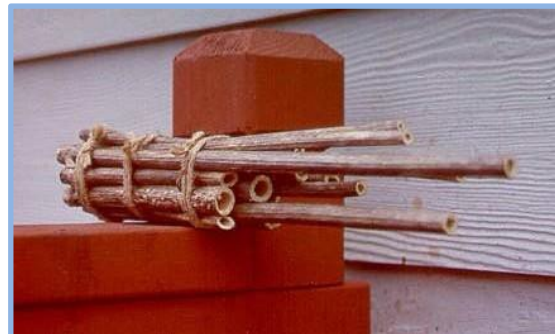
#### Nesting blocks

Bee blocks can be made by drilling nesting holes between 3/32" and 3/8" in diameter, at approximate 3/4" centers, into the side of a block of preservative-free lumber. The holes need to be smooth inside, as deep as possible, and closed at one end. The length of the lumber is not critical—8" or more is good—but the lumber should be at least 4" deep. This block can be fixed firmly to a stake, fence, or building, or placed in a tree.



#### Twig bundle

Some plants, like teasel and bamboo, have naturally hollow stems. Cut the stems into 6" to 8" lengths. Be careful to cut the stems close to a stem node to create a tube with one end open and the other closed. Take fifteen to twenty stem pieces of a variety of internal diameters and tie them into bundles with the closed ends of the stems together. Fix each bundle to a stake, fence, or tree with the stems horizontal to the ground.



## 649 – Structures for Wildlife Implementation Requirements

### Logs and snags

Get some logs or old stumps and place them in sunny areas. Those with beetle tunnels are ideal. Plant a few upright, like dead trees, to ensure some deadwood habitat stays dry. On the southeast side of each log, drill a range of holes. Make the interior of the holes as smooth as possible. Bees don't like rough holes and may avoid them.

### Where to place bee blocks and other tunnel nests

Location of the nesting sites is important. All of these types of tunnel nests should be placed so that the open holes face towards the east or southeast and the morning sun. Most solitary bees cannot heat themselves efficiently, and need the sunshine, especially in the morning, to provide enough warmth so they can become active. Place the nests between two and six feet above the ground, and fix them firmly so they don't shake in the wind.

### Nesting sites for solitary ground-nesting bees

The majority of our native bees build their nests underground. These are harder to provide nest sites for, as we do not fully understand the specific ground conditions needed by each species. However, maximizing areas of untilled ground and improving access to the soil surface may help considerably.

### Semi-bare ground

To provide potential nesting sites for these ground nesting bees, simply clear away patches of vegetation and/or the thatch from a small patch of level or sloping ground, preferably with a south or southeast aspect. Ground-nesting bees need access to the soil surface and typically prefer well drained areas in an open, sunny place. Different ground conditions—from vertical banks to flat ground—will draw different bee species, so create nesting patches in different areas if you can.

### Bumble bee nests

Unlike the nests built for solitary bees—who can be very particular about hole diameters—there are no strict size requirements for bumble bee nests. After emerging from hibernation, a bumble bee queen will hunt for a dry, warm cavity in which to start her colony. Any cavity large enough for a small colony (for example, a 6 to 8 inch cube) will be OK. In natural conditions, most bumble bees nest in abandoned mouse holes in the ground or under grass.

*Bumble bee nests do not need to be double-chambered.*

*A single chamber with bedding*



A simple wooden box, with internal dimensions of about 7" by 7" by 7", made from preservative-free lumber will work. Drill a few ventilation holes near the top (covered with door screen to deter ants) and some drainage holes in the bottom. Make an entrance tunnel from 3/4" plastic pipe, marked on the outside with a contrasting color, and fill the box with soft bedding material, such as upholsterer's cotton or short lengths of unraveled, soft string. The box must be weather tight; if the nest gets damp, the larvae may become too cold, and mold and fungus will grow.

## 649 – Structures for Wildlife Implementation Requirements

### Where to put your bee nests

For bumble bee boxes, choose an undisturbed site, in partial or full shade, where there is no risk of flooding. The box should be on or just under the ground. If you bury it, extend the entrance tube with an old garden hose so it gently slopes up to the surface. Put your nesting box out when you first notice bumble bees in the spring, or when the first willows and other flowers are blooming, and be patient. There is no guarantee that bees will use your box. Only about one in four boxes get occupied. If it has no inhabitants by late July, put the nesting box into storage until next spring. Since bees need nectar and pollen to supply the brood cells of their offspring, all nesting sites should be among or close to suitable foraging plants. If they have both nesting sites and foraging areas close together, it is more likely that they will occupy the nests.



*Photo by Matthew Shepherd,  
Xerces Society for Invertebrate Conservation*

### Additional Notes: