

## Bee Nesting Sites



*Take a walk on the wild side in your own bee garden. Photo by Celeste Ets-Hokin.*

It likely doesn't take too much convincing to persuade all of you bee-friendly gardeners to plant lots of colorful flowers that will delight not only the bees from spring through fall, but yourselves as well. What may require more of an adjustment is letting go of that mental image of a perfectly manicured yard, and instead embracing some of your wild side in the creation of a truly bee-friendly garden.

The best bee gardens are in fact a little wild, offering not only a variety of native and other blooming plants, but also nest sites for both ground- and tunnel-nesting bees. Areas of undisturbed, un-mulched ground, replacement of mowed lawns with native grasses, a few piles of fall leaf litter, small stones or clippings at the back of the yard, and old tree snags or stumps left in place, all offer potential nest sites for native bees. Considering that some of our smaller native bees can manage a flight distance of no more than a few hundred yards between their forage and nest sites, it becomes clear that pretty flowers alone does not a bee garden make.



*Both ground and wood nesting bees need nesting opportunities near their forage plants. [Agapostemon texanus](#) at nest entrance (left). Photo by Rollin Coville. Female [leafcutter bee](#) building her nest (right). Photo by Celeste Ets-Hokin*

The easiest and probably most effective thing a backyard gardener can do to provide nesting opportunities, for the roughly 70% of our native bees that nest in the ground, is nothing! In this case a little benign neglect is encouraged, because what our ground-nesting bees need are areas of undisturbed, bare ground. In particular, you want to avoid the syndrome known as “mulch madness”. Mulch is often touted as the best way to control weeds and conserve water, but unfortunately that thick layer of bark also prevents female bees from establishing their ground nests. And it goes without saying that the use of plastic sheeting for weed control will even more dramatically deny these bees access to their nesting substrate.

The limited application of mulch around new plantings isn't a concern, although once established, most native plants shouldn't require its continued use. Many ground-nesting bees, especially those with a short flight distance, will in fact very efficiently establish their nests near the base of favorite forage plants. It is suggested then that 50% or more of your yard be free of mulch to accommodate the real estate needs of our ground nesting bees.



*Ground-nesting bees require some undisturbed bare ground to excavate their nests. Photo by Celeste Ets-Hokin.*

While some ground-nesting species prefer level ground, others like to excavate their nests into the side of a vertical bank. The first year I began my own bee garden, I was compelled at one point mid-summer to dig up a fairly good-sized plant that wasn't thriving. Before I had the opportunity to fill in the hole with dirt or the replace the plant, a ground-nesting leafcutter bee took advantage of the exposed vertical sides of the cavity to begin construction of her tunnel nest. For three or four days I watched her make many trips back and forth to her nest, carrying bits of leaves through the air and then disappearing into the tunnel. Upon my return to the garden a few days later, the entrance to the nest had been sealed with several differently colored leaf pieces. On this day I declared my new bee garden to be an unqualified success!



Completed ground nest of [leafcutter bee](#) (*Megachile perihirta*) in a bee garden in Oakland, California. Photos by Celeste Ets-Hokin

### Nest sites for tunnel- and other cavity-nesting bees

The remaining 30% of North America's native bees nest in wood tunnels or other cavities. In the wild, most tunnel-nesting bees use abandoned beetle burrows in dead tree limbs or stumps; a few species will chew out the soft pith of dried plant stems such as blackberry, or make their nests in the hollow stems of reeds. By merely leaving an old tree stump or snag in place, you can offer nest sites for some of our wood tunnel-nesting bees. These natural sites can be enhanced by drilling a few holes in an old stump or section of a removed stump that you place in your yard.

But don't despair if your garden can't offer much in the way of naturally occurring wood tunnel nesting opportunities. Artificial tunnel nests of various kinds are relatively easy to construct, and can be a fun educational project for you and your children. Artificial tunnel nests can be created by drilling wood blocks, bundling hollow stems or reeds, and in some locations even by fashioning mud bricks. These are some of the simplest, and often the most successful, ways to offer garden nest sites to tunnel-nesting bees



Wooden bee nest block (left) and a nest bundle made from teasel stems (right). Examples of easy to construct artificial tunnel nests for leafcutter and mason bees. Photos by Matthew Shepherd, The Xerces Society.

While pre-fabricated wood block nests are available commercially, the holes are often not deep enough to provide an optimal tunnel depth for many bee species. In constructing your own wood block nests, the most important considerations are the use of un-treated lumber and ensuring that the holes are drilled with appropriate diameter to depth ratios for various wood-nesting bees. For everything you ever wanted to know about tunnel nest construction and maintenance, but were afraid to ask, consult the [Xerces Society's website](#). Xerces has produced a detailed 6-page pamphlet, entitled “Tunnel Nests for Native Bees – Nest Construction and Management”, which is available as a free downloadable PDF.



*Man-made bumble bee nest box. Photo by Matthew Shepherd, The Xerces Society.*

Also available on the Xerces Society website is information on how to create nest boxes for bumble bees, another great project that you can engage in with your children. Bumble bees are cavity nesters, typically founding their nests in abandoned rodent burrows or under grass tussocks. But they are opportunists, on the lookout for a protected, shoe box-sized cavity. Some species will readily take advantage of old bird houses or even junked mattresses.

In the fall, new bumble bee queens begin searching for a suitable place to hibernate for the winter. They usually survive the cold season by burrowing a few inches into the ground or under a pile of leaf litter. So this coming fall consider taking a holiday from raking up all those messy leaves – leave a few piles at the back of your yard as potential overwintering sites for the last royal visitors of what was surely a busy season in your wild bee garden.