

## GARDENING WITH WILDLIFE

### A “Bee & Bee” for Cavity Nesters

by Nancy Lawson

When a plant stem drooped over Heather Holm’s front steps, she broke it off to preserve easy passage into her house. Little did she know that such a small act would soon provide tiny wild neighbors with access to their own homes too.

Her revelation came later that spring when she returned to the steps. “I was doing what we do in our gardens, sitting quietly and observing,” recalls the Minnesota-based pollinator conservationist and author. “And because I had broken off the stem three weeks before, I watched a small carpenter bee go down the stem.”

Holm was familiar with old scientific papers that briefly described cavity-nesting bees using broken bramble stems, but details were scant, with little mention of bee nests in other plants. “So the light bulb went on—like, ‘Oh my goodness, we could really encourage people to do this simple thing of making these opportunistic cuts and then provide nesting cavities.’”

That was a dozen years ago, when Holm was writing her first book, *Pollinators of Native Plants*. Since then, she’s not only documented countless such interactions herself but inspired habitat gardeners all over North America to do the same. Filling her Facebook group are images of bees descending into cut stems of queen of the prairie in Michigan, wild bergamot in Kansas, switchgrass in Virginia, goldenrod in Ontario, roses in Illinois, dog fennel in North Carolina, and many other plants and places beyond.

Of the 4,000 or so native bee species in the U.S. and Canada, the majority are ground-nesters. But an estimated 30 percent use cavities, usually in logs, stumps, or stems. Most stem-nesters are small carpenter bees in the *Ceratina* genus, though small mason bees in the *Hoplitis* genus and masked bees in the *Hylaeus* genus also use stems. Unlike large carpenter bees, these relatively



A male carpenter bee (*Ceratina* sp.) perches on a stem nest.

tiny species can’t excavate their own holes; they require premade openings. In the wild, hungry mammals like rabbits are happy to oblige, munching on

raspberries and roses in winter. In gardens, humans can use their pruners to give bees a big assist, too.

#### BEE-CENTRIC PRUNING

Though introduced honeybees still dominate the press, their lifestyles are nothing like that of native bees, which don’t live in hives, are mostly solitary, and rarely sting. Providing nesting sites for these lesser known pollinators is easy; you don’t need a beekeeper suit or any special equipment. Ground nesters need bare soil, and stem nesters need fibrous, somewhat decay-resistant stems. Holm and researchers at the Xerces Society are studying which plant genera bees use most readily. So far, sturdy, narrow-stemmed goldenrods (*Solidago* spp.), beeбалms (*Monarda* spp.), and asters are among the popular choices.

Spent stalks with seedheads have high winter value for birds, but they’re not helpful to bees until they’re cut—a practice best left to the early days of next season. “A really basic recommenda-



A female carpenter bee has carved the pith this bush honeysuckle (*Diervilla lonicera*) stem.



**Left:** A mason bee (*Osmia* sp.) forages for pollen and nectar. **Right:** A female sweat bee (*Augochlora* sp.) creates a nest in a piece of wood.

tion is as soon as you see a bee flying in the spring, whether it’s a bumblebee or whatever kind of bee,” says Holm, “that’s your time to cut your plants back.”

Often, bee larvae at the top of a stem nest get parasitized, Holm notes, but trimming stems down to 12 to 24 inches ensures the nest cavity is long enough for more protected brood cells. Once female bees gain entry to a stem, some carve out soft pith with their mandibles. *Ceratina* bees reuse pith shavings, mixing them with saliva to wall off brood cells, which each hold a single egg and pollen ball that will sustain larvae until they begin pupating. Small resin bees in the *Heriades* genus line nests and build walls with pine sap, as do some bees in the *Megachile* genus. The choice of home-building material isn’t accidental: researchers have found antimicrobial properties in resins as well as in leaves collected by other cavity nesters.

Bees generally follow a 12-month trajectory from the time eggs hatch in spring or summer to the time they emerge the following warm season as adults. Once you’ve cut stalks to invite stem-nesting bees, you need to leave them up for another year to allow completion of their life cycles. But even in a visible space, fresh growth quickly obscures standing stem stubble from view.

#### **FOR BEES, DEAD WOOD IS GOOD**

Only a small number of cavity-nesting

species use stem stubble; many more nest in wood, mostly looking for existing holes such as those made by beetles. These bees are often larger than honeybees, says Holm—and include pure green sweat bees (*Augochlora*) and mason bees (*Osmia*), who cut leaf pieces and masticate them into a “little pesto” to fashion nest walls. A 10-inch-diameter log allows sufficient length for these horizontal nesters, though Holm once saw a leafcutter bee (*Megachile*)—named



**Leaf cutter bees (*Megachile* sp.) seal the entrance of their nests with leaves.**

for their penchant for lining cavities with leaf pieces and flower petals—use the end of a firewood-sized log too.

Underneath logs, Holm has found nests of common two-spotted bumblebees and black and gold bumblebees, and she’s watched queen rusty patched bumblebees investigating logs. “There is a lot that we don’t know about where each bumblebee species nests, and it could be that they don’t necessarily have a preference,” she says, “but logs do seem to play a role in a lot of final destinations where a nest occurs.”

In the garden, decaying wood adds sculptural beauty as well as bee habitat. Stumps and logs can hold birdbaths and flower pots or take center stage in a flower patch, inviting beautiful turkey tail fungi. Short standing dead trees (known as snags) are natural trellises, and logs define edges between gardens and pathways. Other than abundant native blooms and a pesticide-free garden, you don’t need much else, except maybe a camera to help you learn more about the amazing creatures visiting your cozy Bee & Bee—and perhaps make a discovery of your own. ■

*Nancy Lawson is an author, naturalist, and founder of the Humane Gardener initiative (www.humanegardener.com). She lives in Howard County, Maryland.*