

# How to create habitat for stem-nesting bees

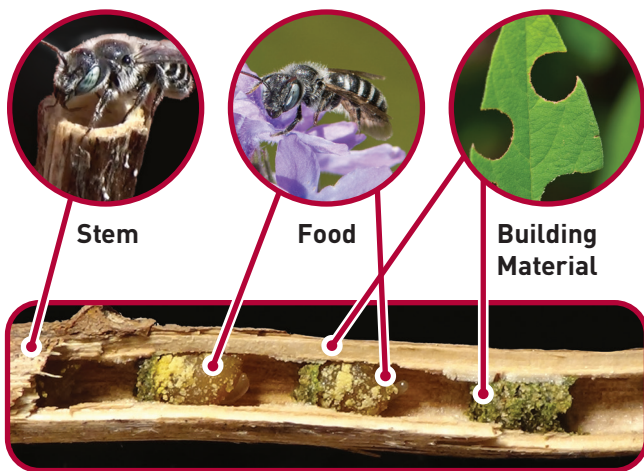
Help wild bees find places to live by providing essential nesting habitat. Around 90 out of 470 bee species in Minnesota nest in cavities made in stems or wood. Removing dead flower stalks is a common gardening practice, but these bees need stems to survive the winter. Bees also need a variety of other resources such as leaves, mud, plant hairs, and resin to build successful nests.

How can you manage stems to provide natural habitat for a wide diversity of stem-nesting bees?

## Steps to create stem-nesting bee habitat

- Provide hollow and pithy stems from flowers and grasses.
- Cut stems in spring.
- Provide a variety of stem heights from 8 to 24+ inches.
- Provide a variety of stem diameters from 1/8 to 5/16 inch.
- Leave stems through summer, winter, and at least the first half of second summer.
- To deter parasites, don't clump or bundle stems.
- Bees will use vertical, horizontal, or angled stems.
- Protect the plants from pesticide exposure.
- Provide diverse plants nearby to provide other nesting needs such as leaves, plant hairs, and resin.
- Provide open water for mud-building bees.

## Nest necessities



## How to Create Habitat for Stem-nesting Bees

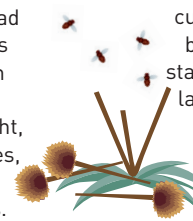


### WINTER

Leave dead flower stalks standing over the winter.

### SPRING

Cut back dead flower stalks leaving stem stubble of varying height, 8 to 24 inches, to provide nest cavities.



Female bees find cut or naturally broken stems, start a nest, and lay eggs on the pollen balls. Larvae eat the pollen.

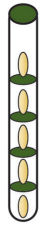


### SUMMER

New growth of the perennial hides the stem stubble.



Bee larvae develop in cut dead stems during the growing season.



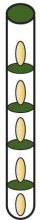
### FALL



### WINTER

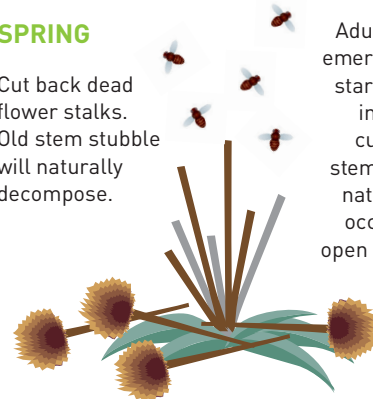


Bees hibernate in stems during the winter.

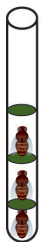


### SPRING

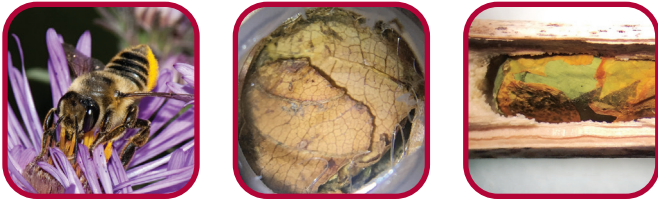
Cut back dead flower stalks. Old stem stubble will naturally decompose.



Adult bees emerge and start nests in newly cut dead stems or in naturally-occurring open stems.



## Some common stem-nesting bees and their nests



Leaf cutter bees (*Megachile*) - whole or chewed leaf plug, use hollow stems or dig into pithy stems.



Resin bees (*Heriades*) - resin plug, use hollow stems.



Mason bees (*Osmia*) - chewed leaf or mud plug, use hollow stems.



Small mason bees (*Hoplitis*) - chewed leaf plug, often pebbles, sometimes dig into pithy stems.



Small carpenter bees (*Ceratina*) - no plug, female guards nest end, usually dig into pithy stems.



Yellow faces bees (*Hylaeus*) - cellophane plug, use hollow stems.

## Plants used for nesting

| Scientific name                    | Common name                   |
|------------------------------------|-------------------------------|
| <i>Agastache</i>                   | hyssop                        |
| <i>Andropogon gerardii</i>         | big blue stem                 |
| <i>Arnoglossum atriplicifolium</i> | pale Indian plantain          |
| <i>Artemisia</i>                   | native sages                  |
| <i>Asclepias incarnata</i>         | swamp milkweed                |
| <i>Baptisia australis</i>          | blue wild indigo              |
| <i>Echinacea</i>                   | cone flowers                  |
| <i>Eupatorium perfoliatum</i>      | common boneset                |
| <i>Cirsium</i>                     | native thistles               |
| <i>Eutrochium</i>                  | Joe Pye weeds                 |
| <i>Helianthus</i>                  | sunflower                     |
| <i>Heliopsis helianthoides</i>     | smooth oxeye, early sunflower |
| <i>Liatis</i>                      | blazing stars                 |
| <i>Monarda fistulosa</i>           | wild bergamot, bee balm       |
| <i>Panicum virgatum</i>            | switchgrass                   |
| <i>Pycnanthemum</i>                | mountain mints                |
| <i>Ratibida pinnata</i>            | pinnate prairie coneflower    |
| <i>Rhus</i>                        | sumacs                        |
| <i>Rosa</i>                        | roses                         |
| <i>Rubus</i>                       | raspberries                   |
| <i>Sambucus</i>                    | elderberry                    |
| <i>Silphium perfoliatum</i>        | cup plant                     |
| <i>Solidago</i>                    | goldenrods                    |
| <i>Sorghastrum nutans</i>          | indiangrass                   |
| <i>Symphotrichum</i>               | asters                        |
| <i>Thalictrum</i>                  | meadow rues                   |
| <i>Vernonia fasciculata</i>        | prairie ironweed              |
| <i>Veronicastrum virginicum</i>    | Culver's root                 |
| <i>Zizia aurea</i>                 | golden Alexander              |

Plants listed are from surveys and observations of authors. Many more plants are likely hosts. Please share your observations of bee nests to help this list grow.

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For more information visit [www.beelab.umn.edu](http://www.beelab.umn.edu)

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