

About Cavity-Nesting Native Bees

What is a Cavity-Nesting Bee?



Of the roughly 430 native bees that have been identified in New York State, there are a group of bees that are known as cavity-nesting bees. These species nest in cavities that can be found in old logs or dried plant stems that have holes in them.



Mason Bee
actual size



Entrance
hole



Cavity-nesting bees come in many different shapes and sizes, so the size of the hole will determine what type of bee will take up residency in their pollinator hotel.

Are Cavity-Nesting Bees Agressive?



Cavity-nesting bees are not aggressive. Unlike bees that live in colonies, like the European honey bee and our own native bumble bee, most are solitary. They do not produce honey or have a large colony to protect. However, if a cavity-nesting bee is provoked, it does possess the ability to sting.

Providing Habitat for Cavity-Nesting Bees



You can help native bees by filling your garden with native plants and by creating pollinator hotels. An important step in helping these essential insects is providing food and habitat space.

Below Is a List of Six Common Cavity-Nesting Bees That Can Befound at the O'Hara Nature Center



Small Carpenter Bees



Masked Bees



Mason Bees



Bellflower Resin Bees



Blue Orchard Bees



Leafcutter Bees



What's Happening Inside My Pollinator Hotel?

Example of repurposed birdhouse as a Pollinator Hotel
Dimensions: W= 5", H= 9", INT= 5 by 5"



Example of a cavity-nesting bee's nest entrance sealed with soil



Example of a cavity-nesting bee searching for the appropriate sized hole



Example of pollen stored as food for the larvae as they develop



Example of newly laid Mason Bee egg in stem cavity



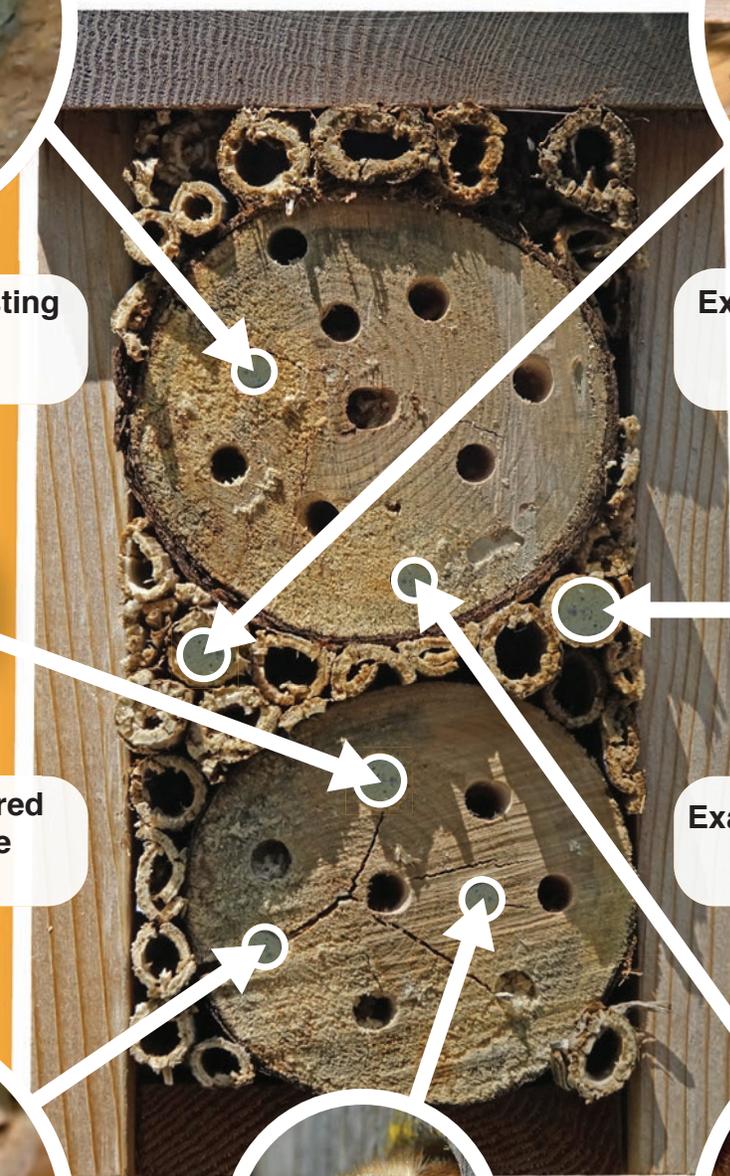
Leafcutter Bee carrying a piece of a leaf to use for nesting material



Mason Bee emerging from its nest 24-days later



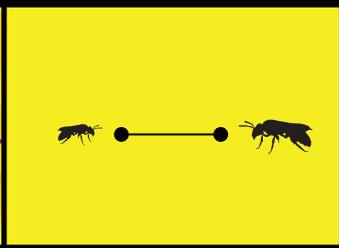
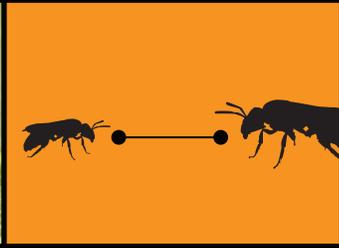
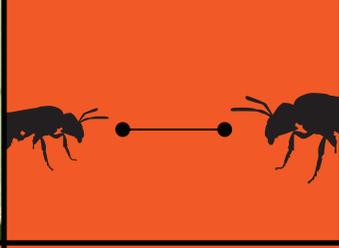
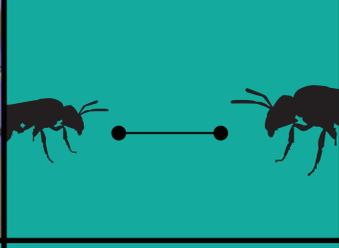
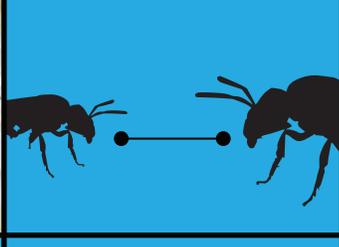
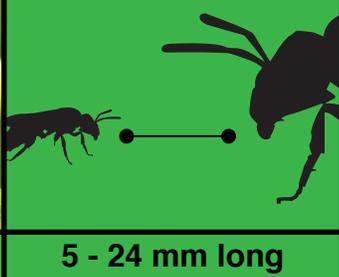
Even though cavity-nesting bees lay their brood in solitary cavities, they can take up residency next to other cavity-nesting bees



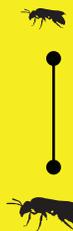
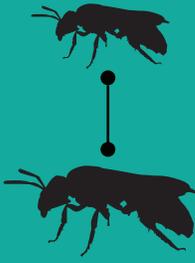
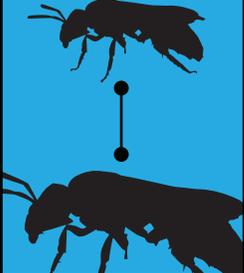
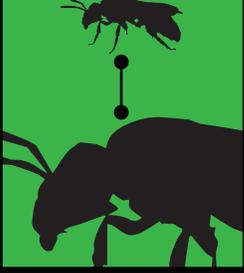
Identification of Common Cavity-Nesting Bees

| Drill Bit Size | Hole Diameter in | Hole Diameter mm | Cavity-Nesting Native Bees Expected | *Actual Size | Bee Identification | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---------------------|---------------------|---|---|---|---|--------|-----|---|---|---|---|--------|-----|---|--------|-----|---|---|---|---|--------|-----|---|--------|-----|---|---|---|---|--------|----|---|--------|---|---|---|---|---|--------|----|---|--------|---|--|---|---|
|  ● | 1/8" | 3 | Small Carpenter Bee (Genus: <i>Ceratina</i>) |  |  | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|  ● | 11/64" | 4.5 | | | |  ● | 13/64" | 5 | Masked Bee (Genus: <i>Hylaeus</i>) |  |  |  ● | 9/32" | 7 |  ● | 7/32" | 5.6 | Mason Bee (<i>Osmia sp.</i>) |  |  |  ● | 3/8" | 9.5 |  ● | 19/64" | 7.5 | Bellflower Resin Bee (<i>Megachile campanulae</i>) |  |  |  ● | 25/64" | 10 |  ● | 23/64" | 9 | Blue Orchard Bee (<i>Osmia lignaria</i>) |  |  |  ● | 7/16" | 11 |  ● | 13/64" | 5 | Leafcutter Bee (<i>Megachile sp.</i>) |  |  |
|  ● | 13/64" | 5 | Masked Bee (Genus: <i>Hylaeus</i>) |  |  | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|  ● | 9/32" | 7 | | | |  ● | 7/32" | 5.6 | Mason Bee (<i>Osmia sp.</i>) |  |  |  ● | 3/8" | 9.5 |  ● | 19/64" | 7.5 | Bellflower Resin Bee (<i>Megachile campanulae</i>) |  |  |  ● | 25/64" | 10 |  ● | 23/64" | 9 | Blue Orchard Bee (<i>Osmia lignaria</i>) |  |  |  ● | 7/16" | 11 |  ● | 13/64" | 5 | Leafcutter Bee (<i>Megachile sp.</i>) |  |  |  ● | 15/16" | 24 | | | | | | |
|  ● | 7/32" | 5.6 | Mason Bee (<i>Osmia sp.</i>) |  |  | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|  ● | 3/8" | 9.5 | | | |  ● | 19/64" | 7.5 | Bellflower Resin Bee (<i>Megachile campanulae</i>) |  |  |  ● | 25/64" | 10 |  ● | 23/64" | 9 | Blue Orchard Bee (<i>Osmia lignaria</i>) |  |  |  ● | 7/16" | 11 |  ● | 13/64" | 5 | Leafcutter Bee (<i>Megachile sp.</i>) |  |  |  ● | 15/16" | 24 | | | | | | | | | | | | | | | |
|  ● | 19/64" | 7.5 | Bellflower Resin Bee (<i>Megachile campanulae</i>) |  |  | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|  ● | 25/64" | 10 | | | |  ● | 23/64" | 9 | Blue Orchard Bee (<i>Osmia lignaria</i>) |  |  |  ● | 7/16" | 11 |  ● | 13/64" | 5 | Leafcutter Bee (<i>Megachile sp.</i>) |  |  |  ● | 15/16" | 24 | | | | | | | | | | | | | | | | | | | | | | | | |
|  ● | 23/64" | 9 | Blue Orchard Bee (<i>Osmia lignaria</i>) |  |  | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|  ● | 7/16" | 11 | | | |  ● | 13/64" | 5 | Leafcutter Bee (<i>Megachile sp.</i>) |  |  |  ● | 15/16" | 24 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|  ● | 13/64" | 5 | Leafcutter Bee (<i>Megachile sp.</i>) |  |  | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|  ● | 15/16" | 24 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

Identification of Common Cavity-Nesting Bees

| Photo | Size | Preferred Materials | Additional Information |
|---|---|---|---|
|  |  | <p>Pre-drilled wood blocks, small hollow twigs, and stems</p> | <p>Small carpenter bees are important pollinators of plants. Due to their size, they can enter small-mouthed flowers unreachable by larger bees.</p> |
| <p>Small Carpenter Bees</p> | <p>3 - 4.5 mm long</p> | | |
|  |  | <p>Reed grasses, pre-drilled wood blocks and hollow twigs, and hollow stems from sunflower (<i>Helianthus</i>), Joe Pye weed (<i>Eutrochium purpureum</i>), and goldenrod (<i>Solidago</i>)</p> | <p>The Masked Bees' bodies are almost entirely black except for pale patches on their heads and legs. These bees are sparsely covered in hairs, giving them a wasp-like appearance.</p> |
| <p>Masked Bees</p> | <p>5 - 7 mm long</p> | | |
|  |  | <p>Pre-drilled wood blocks, hollow twigs, and hollow stems from sunflower (<i>Helianthus</i>), Joe Pye weed (<i>Eutrochium purpureum</i>), and goldenrod (<i>Solidago</i>)</p> | <p>When building their nests, Mason Bees use clay to make partitions and to seal the entrance. This unique mud-building behavior leads to their common designation as "masons".</p> |
| <p>Mason Bees</p> | <p>5.6 - 9.5 mm long</p> | | |
|  |  | <p>Pre-drilled wood blocks, small to large hollow twigs and stems</p> | <p>The Bellflower Resin Bees collect sticky plant and tree resins, which they use to seal the egg chambers of their nests. These native bees construct nests in hollow plant stems or in tunnels left in wood.</p> |
| <p>Bellflower Resin Bees</p> | <p>7.5 - 10 mm long</p> | | |
|  |  | <p>Pre-drilled wood blocks, small to large hollow twigs and stems</p> | <p>Blue Orchard Bee season is early spring. Once they emerge, they promptly mate, search for empty holes that are the right size and go to work stocking their nests. A favorite food for their brood is fruit tree pollen.</p> |
| <p>Blue Orchard Bees</p> | <p>8.5 - 13 mm long</p> | | |
|  |  | <p>Pre-drilled wood blocks, small to large hollow twigs and stems</p> | <p>Leafcutter Bees get their name from the female's behavior of cutting out round pieces of leaves, which they use to line their nests. They nest in preexisting holes in wood created by other animals.</p> |
| <p>Leafcutter Bees</p> | <p>5 - 24 mm long</p> | | |

Identification of Common Cavity-Nesting Bees

| <u>Bee Identification</u> | <u>Hole Diameter</u> in mm | | <u>*Actual Size</u> | <u>Wood Nesting Example</u> | <u>Hollow Stem Nesting Example</u> | <u>Plant Stem Materials</u> |
|---|-------------------------------|-----|---|--|---|---|
|  Small Carpenter Bees | 1/8" | 3 |  |  |  | Goldenrod Sunflowers Reed grass Joe Pye Weed Milk Weed |
| | 11/64" | 4.5 | | | | |
|  Masked Bees | 13/64" | 5 |  |  |  | Goldenrod Sunflowers Reed grass Joe Pye Weed Milk Weed |
| | 9/32" | 7 | | | | |
|  Mason Bees | 7/32" | 5.6 |  |  |  | Goldenrod Sunflowers Reed grass Joe Pye Weed Milk Weed |
| | 3/8" | 9.5 | | | | |
|  Bellflower Resin Bees | 19/64" | 7.5 |  |  |  | Joe Pye Weed Japanese Knotweed Bamboo Shoots |
| | 25/64" | 10 | | | | |
|  Blue Orchard Bees | 21/64" | 8.5 |  |  |  | Joe Pye Weed Japanese Knotweed Bamboo Shoots |
| | 33/64" | 13 | | | | |
|  Leafcutter Bees | 13/64" | 5 |  |  |  | Joe Pye Weed Japanese Knotweed Bamboo Shoots |
| | 15/16" | 24 | | | | |