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Mason Bees

When you think of bees, the first thing that comes to mind are honey bees. While honeybees are very important pollinators for our food crops, they are not the only bees that do that work. In fact, honeybees are from Eastern Europe and not native to America. A very important category of pollinators are our NATIVE BEES. There are three types of native bees. Social bees live in hives. Ground nesting bees lay their eggs in tunnels underground. Cavity nesting bees lay their eggs in hollow plant stems, holes in logs, and other openings.

Mason bees (*Osmia* species) are CAVITY NESTING BEES. There are about 140 mason bee species in the United States. *They do not sting* as they don't have a hive or a queen to protect. One of the hardest working and easily attracted to the garden is *Osmia lignaria*, the orchard mason bee or blue orchard bee. *They are 120 times more effective as pollinators than honey bees!* These solitary bees do not have to carry pollen back to a hive. They do not have pollen baskets on their legs. Instead, they gather pollen on the lower side of their bodies (called the scopia, think of it as the abdomen of the bee). They are very hairy and pack lots and lots of pollen (held together with a bit of nectar) on their scopia. Because they pick up and transfer so much pollen, they are VERY efficient pollinators!

Mason bees are not only great pollinators, they are also really fun to watch. In the process, you will learn a lot about the natural world. Think of them as your very own "pollination pets", a term coined by Christopher O'Toole, author of the excellent guide book [The Blue Orchard Bee](#).

Mason bees are solitary bees (they don't live in hives) and they lay their eggs in holes or tunnels, often those that have been bored out by a beetle or other insect. As homeowners, we can take advantage of this characteristic to invite mason bees to nest in our yards by providing them with clean hollow tubes or stems, properly sited, where they can lay their eggs.

Mason bees emerge from their overwintering tunnels in mid-March through early April in CT. They emerge much earlier than honeybees and can fly in cold weather. They mate immediately and then begin searching for pollen and nectar. The females begin to look for a new place to lay their eggs. Once she finds a proper hollow tube or hole, she will clean it out, then back in, lay an egg, deposit pollen and nectar for food for when the egg hatches, and build a wall of mud to create a brood cell. She then repeats this process about 10 times, creating a cell for each egg.

Egg laying continues in CT through late spring. Female eggs are laid in the back of the nest; male eggs towards the front. When the nest is finished, the female plugs the entrance to the tube with mud and then goes on to find another cavity in which to make another nest.

Inside the nest, the larva hatches and eats all of the pollen and nectar. It then spins a cocoon around itself and enters the pupal stage. By late fall or winter, the pupa matures to an adult and hibernates inside the cocoon until the following spring when the cycle begins again.

You can invite mason bees to nest in your yard by installing mason bee houses. Locate them under the eave of a building or on a wall or fence. Locate the house facing the morning sun and angle them slightly downward to prevent rain from entering the tubes and forming mold. Mount the mason bee house securely using strong strapping. Be sure there is a ready source of mud nearby. Perhaps create a mud puddle below the nest.

Mason bees need lots of pollen and nectar in order to support egg laying. Flowers that bloom in early spring should be planted near the nesting box. Mason bees do not fly great distances to find pollen and nectar. Fruit trees, redbud trees, and the flowers of maple trees are especially valuable, as are early blooming perennials and herbs, native wildflowers, and weeds such as clover and dandelions.

Maintenance of nesting boxes is very important to prevent bee parasites and diseases. Put up fresh nesting boxes or tube bundles in late winter/early spring so that the newly emerged mason bees can find them and lay their eggs. Discard the old tubes after last year's bees have emerged to prevent insects and diseases.

Another alternative is to remove the tubes that have bees in them from the nest block in the fall and store in an unheated garage or storage shed. You can also store them in a refrigerator. They need cold temperatures. If stored in a container, make sure it is open and ventilated, not closed. Clean the nest box very well.

In the late winter/very early spring, put the nest box up again and fill it with clean tubes. Bring out the tubes that have bees in them from the previous year and place them in a germination box- a box that is completely dark inside with a few holes drilled at ground level on the back side. Face the side with the hole towards the new nest box filled with clean tubes. As the bees hatch, they will fly out of the hole and their new home will be nearby.

If you want to make your own nest block, you can use logs or pieces of *untreated* wood and drill holes as nesting chambers. The size of the hole is critical. Holes should be between 3/32 and 3/8 inches in diameter- use the right size drill bit. Holes should be about 3/4" apart. Tunnels should be a minimum of 3" deep and should not be open on the back end. The inside of the holes should not be rough. Use a sharp, brad point drill bit. You can also drill rough holes and then fill them with paper tubes or mason bee straws. Do not reuse wooden nest blocks without cleaning them thoroughly. Once the bees hatch, immediately remove the blocks, clean them out, disinfect them, and add new paper tubes/mason bee straws if you are using them.

For more information on how you can be a mason bee "farmer" there are some excellent books and websites you can explore:

[The Blue Orchard Bee... Taking the Sting out of Beekeeping](#) by Christopher O'Toole

[Attracting Native Pollinators](#) a Xerces Society Guide

<http://www.xerces.org/pollinator-conservation/>

http://www.pollinatorparadise.com/Solitary_Bees/beegarden.htm

<http://www.pollinator.org>

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by helping our pollinators.

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