



NATIVE AND SOLITARY BEES IN VIRGINIA

Eric Day, Entomologist, Virginia Tech

Although honey bees are well known for pollination and honey production, other bees at times impact humans in various ways. These native bees range from beneficial to annoying, sometimes at the same time. Native bees are important pollinators for fruit and vegetables.

CARPENTER BEES are large bees, resembling bumblebees. They are heavy-bodied and metallic blue-black with green or purplish highlights. The bodies are covered with bright yellow or orange hair and are about 1 inch long. Abdomens are shiny black. Scientific name: Hymenoptera: Anthophoridae, *Xylocopa virginica*.



Carpenter bee and entrance hole. (Image Citation: Johnny N. Dell, Bugwood.org)

Life Cycle: These insects build their nests in wood siding, the ends of logs used in modern log houses, or other areas where bare wood is exposed. The males and females cut a one-half inch circular hole into the wood, then create a tunnel parallel to the surface of the wood. Within the tunnel the female stores food and lays eggs. The developing carpenter bee larvae are in individual cells in the tunnel. There is usually only one generation per year.

Control: Spraying the entrance hole with an aerosol insecticide and plugging it with wood putty to prevent adults from returning can achieve control of these insects. Traps are also available for this bee.

BUMBLE BEES are large, hairy bees that are 3/4 to 1 1/2 inches long and are generally black and yellow in color. Scientific name: Hymenoptera: Apidae, *Bombus spp.* Current 14 species are found in Virginia. Their somewhat clumsy nature as well as buzzing sound in flight is the source of their name.



Bumble Bee (Whitney Cranshaw, Bugwood.org)

Habitat: Often encountered foraging at flowers. Some species choose nesting places around people's houses. Wooden storage sheds and small barns. Bumble bees can use old nests made by small rodents.

Life Cycle: Bumble bees are beneficial insects, performing pollinating services for such crops as tomato, red clover, and blueberries. Many species collect and carry pollen on their hind legs to bring it back to the hive.

Control is usually not recommended. But if desired, it would be best to find and destroy the nest. Individual bumble bees that get into the house can be controlled with an aerosol insecticide.

ANDRENID BEES: One of the first bees in the spring is often this ground nesting bee. Also known as mining bees, they will nest in the ground sometimes in large numbers. Although solitary, they nest near other Andrenid bees when they find suitable soil. They swarm over the soil and fly up when people approach the nests, but since they rarely sting this is more of a bluff. Additionally they are only out for a few weeks per year, when the female makes and provisions an underground cell for the developing bee. The rest of the time is spent as immature bees in cells made and provisioned with pollen.



Andrenid Bee: Joseph Berger, Bugwood.org

Andrenid bees (Hymenoptera: Andrenidae) are small to moderate size and are similar to honey bees except darker. They are considered beneficial pollinators of crops and fruit trees and should only be controlled as a last resort. Since they do not like to nest in wet soil, simply irrigating their nesting sites during the short flight activity time will discourage them.

LEAFCUTTER BEES are small solitary bees that cut small holes in leaves and use pieces of leaf to fill a nesting area for the immature bees. They are often encountered in door and window frames and are sometimes a nuisance.



Image of cut leaves: Whitney Cranshaw, Colorado State University, Bugwood.org. **Image of leaf damage:** Joseph Berger, Bugwood.org

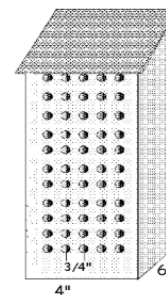
Adults are beneficial pollinators that resemble small honey bees but are darker. If objectionable the nest can be cleaned out and discarded. Hymenoptera: Megachilidae.

SWEAT BEES are noted for their bright metallic color and the collection sweat for the salt. They can sting, but are otherwise beneficial pollinators. Hymenoptera: Halictidae.



Image of sweat bee visiting a flower: David Cappaert, Michigan State University, Bugwood.org

ORCHARD MASON BEES are an underused pollinator for home gardens and orchards.



Bee Image: Jack Dykinga, USDA Agricultural Research Service, Bugwood.org. **Bee House,** Stephen Bambara, Extension Entomologist, NC State.

Orchard mason bees are extremely efficient pollinators and an individual mason bee can visit up to 60,000 flowers in its lifetime. They are also very docile and rarely sting making them suitable for urban situations. Naturally low numbers can be increased with nesting structures. Bee houses can be purchased, but making a structure for this bee is easy. Select a block of untreated wood that measures 12 inches, by 4 inches, by 6 inches. On the 4 inch side, drill holes that are 5 and 1/2 inches deep with a 5/16 drill-bit. It is very important that this diameter is used, as other sized holes are not used by the mason bee. Drill the holes about 3/4 inch apart in rows. To keep woodpeckers from eating the bees in the winter place a section of 1/2 inch hardware cloth about 1 inch away from the entrance to holes. Attach the hardware cloth to one side and curve it around to the other side so that it sticks out in front of the bee house. Check for holes capped with mud to confirm that the bees are using them.