

Concerned about the pollination threat?

Native Bees Could Plug the Gap For Disappearing Honey Bees By Jerry Lindhorst

Mother Nature's creatures ranging from songbirds to grizzly bears depend on pollinators. We humans are also included: approximately one in three mouthfuls of food and beverage we eat or drink require the pollinators' services.

Most of us are aware that butterflies and hummingbirds are pollinators, but the real workers are bees, moths, wasps, flies, beetles and even a few bats. These are the productive little critters that move pollen between flowers, enabling them to produce future seeds and fruits. These pollinators are a must for the successful reproduction of approximately 70% of the world's flowering plants.

Much of the U.S.' crop pollination is provided by the European Honey Bee, which is probably the most recognized in the 40,000 bee species worldwide. Many farmers actually purchase the honey bees' services to produce their vegetables and other edible plants. A disastrous problem is that since 1950, there has been a 50% decline in the management of European Honey Bees. It is suspected that the decline is from the overuse of pesticides, habitat loss and disease. If all the pollinators died, only wind-pollinated crops such as corn and wheat would remain.

It is reassuring to know that native bees—we have 400 species in Missouri—are the most important group of pollinators that we have. Unlike honey bees, which form large social units (Confluence member Jim Phillips has successfully nurtured his own hive of honey bees), the majority of our native bees live as solitary individuals. Each female constructs her own nest. She collects nectar and pollen to provision her nest with food for her offspring. The only native bees to form social colonies are bumble bees and a few species of sweat bees.

Our native bees can be an insurance policy against continued honey bee losses. Native bees are also extremely more efficient. As an example, when native bees are present, the production of Sungold cherry tomatoes almost triples. Studies have found it takes 250 to 750 native female bees to pollinate an acre of apples when compared with 10,000 to 25,000 honey bees to accomplish the same feat.

So what can we suburbanite Master Naturalists do to create the necessary habitat sought by native bees? The most effective way is to grow in your yard—as much as possible—native plant species that are good pollen producers. These plants include: Aster, Beardtongue, Beebalm, Blanketflower, Blazing Star, Crownbeard, Culver's root, Englemann's Daisy, False Indigo, Goldenrod, Hawthorn, Ironweed, Milkweed, Mountain Mint, Patridge Pea, Prairie clover, Prairie Clover, Prairie Coneflower, Redbud, Rosenweed, Sneezeweed, Spiderwort, Sunflower, Wild Plum and Wild Rose.

Garden plants are also popular with native bees. They include: Anise Hyssop, Basil, Catmint, Cosmos, Marjoram, Mexican Sunflower, Purple Coneflower, Rosemary and sage.

To attract bees and other insects like butterflies, provide a range of plants that offer a succession of flowers and thus pollen and nectar, through the entire growing season. Flower colors that particularly attractive to native bees are blue, purple, violet, white and yellow. Plant the same species of flowers in clumps. They will attract more individual native bees than plants scattered throughout a habitat patch.

You may also wish to further reproduction of native bees by providing places for them to make their nests. Most native bees—about 70% of the species—nest in the ground and need access to the soil surface to dig their nests. How do you create this opportunity?

- Clear vegetation from small patches of level or sloping ground and gently compact the soil surface. These patches can be a few inches to a few feet across and should be well-drained and in an open sunny place preferably facing south.
- In a sunny, well-drained spot, dig a pit about 2 feet deep and fill it with a mixture of pale-colored, fine-grained sand a loam. Planter boxes filled with sand and loam will also work.

Location of the following constructed nesting sites is important. Put in a place that shelters them from the worst weather, with the entrance holes facing east or southeast. The nests can be any height from the ground, but between 3 and 6 feet is best. Put them on a building, fence, or stake or even in a tree.

- Bee blocks can be made by drilling nesting holes between $3/32$ " and $3/8$ " in diameter, at approximate $3/4$ " centers, into the side of a block of preservative-free lumber. The holes should be smooth inside, and closed at one end. The height of the nest is not critical—8" or more—but the depth of the hole is.
- Gather some logs or old stumps and place them in sunny areas. Those with beetle holes are ideal. Plat a few upright, like dead trees, to help ensure some deadwood habitat stays dry. On the south east side of each log, drill a ring of holes as described above.

Good luck this spring. *My thanks to Jennifer Hopwood of the Xerces Society for providing information and Betsy Betros for the photographs.*