

## To Bee or Not to Bee

By Susan Camp

A Facebook friend posted a picture of herself dressed in her Christmas present— beekeeper’s gear. She sadly lost three hives a few ago, but is determined to try again. My husband, Jim, has expressed interest in beekeeping. Beekeeping is expensive and requires patience and fearlessness. Then there is the sense of loss if the bees don’t survive.

As gardeners and farmers know, bees, along with flies and some other insects, birds, and animals, perform the invaluable service of pollinating our plants, enabling them to set fruit. Honey bees are the only bees used to pollinate commercial farming crops, and only honey bees (*Apis mellifera*) produce sufficient honey, wax, and other substances marketed as food, cosmetics, and health care products. Honey bees were introduced to the Americas by early European colonists. Unlike most native species, honey bees are social insects, living together in colonies or hives.

During the winter of 2006-2007, farmers across the United States reported an unusual phenomenon, later termed Colony Collapse Disorder (CCD), in which hives were abandoned by worker bees, leaving the queen with sufficient food and nurse bees to care for her and a few remaining immature bees. Without worker bees, a hive will die. There was grave concern about the future of honey bees and the farming industry’s dependence on them to pollinate crops. The number of hives lost has decreased by half since 2007, according to 2014-2015 reports, but CCD remains a concern, as a specific cause has not been identified. Neonicotinoid crop pesticides are identified as a possible cause of CCD, as are the varroa mite, Israeli Acute Paralysis virus, and *Nosema*, a parasite that infects the gut. Stress and inadequate food also are cited as possible causes of CCD. The EPA publication “Colony Collapse Disorder” and the USDA Agricultural Research Service (ARS) publication “Honey Bee Health and Colony Collapse Disorder” provide detailed information on CCD.

Where does that leave the home flower or vegetable gardener who isn’t trying to pollinate a commercial crop? Are we totally dependent on honey bees, and do we or a nearby neighbor need to keep bees so that our plants will be pollinated? The answer is “no”, particularly if we plant native plants in our gardens. Over 4000 species of native bees live in North America, and with good garden planning and appropriate plant selection, we can encourage several species to set up housekeeping in and around our gardens.

The important components of native bee habitats are nesting space and materials and native plants that provide nectar and pollen to meet the bees’ high energy needs. Certain flower characteristics are crucial. Flowers should be brightly colored (blue or yellow flowers are preferred), with a sweet or minty fragrance, and plenty of nectar. In addition, flowers must be open during the daytime, be symmetrical or tubular, and have space for a bee to land. Lists of species-specific native plants are found online in the Bryn Mawr College and Rutgers University

pamphlet “Native Bee Benefits.” The Virginia Cooperative Extension (VCE) publication 3104-1541 “Gardening for Bees in Hampton Roads” includes native and exotic trees, shrubs, flowers, and herbs that will provide food for bees.

Native bee nests vary by species. Most native bees lead solitary lives in dead tree trunks, beetle burrows, abandoned rodent nests, or excavations in bare ground or the wood siding on your house. You can provide nesting areas by leaving old logs or stumps in place and drilling holes at intervals. Dry, well-drained, south facing patches cleared of vegetation will provide habitat for ground bees. The Audubon International fact sheet “Bee Conservation” and the pamphlet “Native Bee Benefits” provide specific details for building bee boxes and nesting blocks.

Who are these native bees we are trying to attract? Next week we will explore several species of native bees and some native plants that will provide them with nectar and pollen.