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Acton WildAware Beacon Article

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Bees are descended from wasps. Most wasps are carnivores; they either prey upon or parasitize other insects or spiders to feed their young. About 125 million years ago, when the first flowering plants evolved, some wasps made a switch from hunting prey to gathering pollen for their brood. They may have been hunting for insects that visited flowers and ate some of the protein rich pollen or drank the nectar along with their prey. Eventually those wasps chose pollen and nectar gathering over hunting and evolved into bees.

According to the USDA, there are 4,000 native bee species in the United States, found across the country in forests, fields, wetland, farm and even urban habitats. Native pollinators, especially bees other than honey bees, have been pollinating North America's flowering plants since long before the arrival of honey bees. European settlers brought hives from Europe and they quickly escaped from domestication. It may be surprising to learn that the honey bee does not know how to pollinate tomato or eggplant flowers. It does very poorly compared to native bees when pollinating many native plants, such as pumpkins, cherries, blueberries, and cranberries.

However, without honey bees many of the fruits and vegetables grown on a large scale that we eat everyday would never exist. By pollinating fruit and vegetable flowers, honey bees help produce vast fields and orchards of apples, oranges, lemons, limes, broccoli, onions, blueberries, cherries, cranberries, cucumbers, cantaloupes, carrots, avocados and almonds. Some large apiaries that produce honey travel long distances to provide honey bees while plants and trees are blooming. For example, in February, beekeepers from around the United States bring more than one million bee colonies to California for pollinating the half million acre almond crop.

Colony Collapse Disorder - Beekeepers first sounded the alarm about disappearing bees in the United States in 2006.

Seemingly healthy bees were simply abandoning their hives, leaving behind the queen, drones and larvae. Researchers are calling the mass disappearance Colony Collapse Disorder(CCD), and attribute it to a combination of factors:

Global warming, which has caused flowers to bloom earlier or later than usual. When pollinators come out of hibernation, the flowers that provide the food they need to start the season have already bloomed.

Some toxic pesticides meant to kill pests can harm the bees needed for pollination.

Many pesticides banned by other countries because they harm bees are still available in the United States.

Habitat loss brought about by development, abandoned farms, growing crops without leaving habitat for wildlife, and growing gardens with flowers that are not friendly to pollinators.

Parasites such as harmful mites.

Colonies reported as being lost due to CCD must have fully met four criteria:

1) Little to no build-up of dead bees in the hive or at the hive entrance 2) Rapid loss of adult honey bee population despite the presence of queen, capped brood (in the hexagonal wax cells of the hive), and food reserves 3) Absence or delayed robbing of the food reserves 4) Loss not attributable to varroa mites or nosema (a midgut disease that causes dysentery).

On May 12, 2016 the U.S. Department of Agriculture's National Agriculture Statistics Service (NASS) released the results of its first ever Honey Bee Colony Loss survey. The survey queried more than 20,000 honey beekeepers about the number of colonies, colonies lost, colonies added, and colonies affected by certain stressors. The survey was developed as part of the "National Strategy to Promote the Health of Honey Bees and Other Pollinators" released during the summer of 2015, and gathered state-level estimates on key pollinator health topics. What most people don't know is that it's not just honey bees that are declining. Some native bees and other pollinators are experiencing population declines and range reductions. Many of the same factors affecting honey bee health are also affecting native bee species' health as well.

We can help by planting gardens to support bees and other pollinators. A suggested resource from the Xerces Society is their book, [Attracting Native Pollinators: Protecting North America's Bees and Butterflies](#). One of the detailed sections of the book, *Creating a Pollinator-Friendly Landscape*, shows how various kinds of land, including urban gardens, suburban parks, and farms, can be enhanced to support diverse pollinator populations. Sample planting designs and illustrated plant lists help to guide selections of the best plants for any region.

Resources:

Xerces Society for Invertebrate Conservation-

<http://www.xerces.org/announcing-the-publication-of-attracting-native-pollinators/>

Hackenberg Apiaries-

<http://hackenbergapiaries.org/index.php?page=hackenberg-apiaries-bee-education>

The Hive Detectives, Loree Griffin Burns

MA Right to Know GMOs USDA Report on the National Stakeholders Conference on Honey Bee Health, October 15–17, 2012-<http://marighttoknow.com/home/savethebees>

<http://www.usda.gov/documents/ReportHoneyBeeHealth.pdf> -

USDA Releases Results of New Survey on Honey Bee Colony Health (May 12, 2016)-

<http://www.usda.gov/nass/PUBS/TODAYRPT/hcny0516.pdf>

A USDA Forest Service and Pollinator Partnership Publication-By Beatriz Moisset, Ph.D. and Stephen Buchmann, Ph.D-

http://www.fs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb5306468.pdf

Paula Goodwin is a member of the Acton Conservation Commission who introduced WildAware with Acton Natural Resource Assistant Bettina Abe. WildAware is a program sponsored by the Town of Acton Natural Resources Department that began in September and will continue through the summer of 2016. The purpose of WildAware is to educate the community about the existence and habits of wild creatures, and the goal is increased community awareness of shared habitats. For information, call 978-929-6634 or send email to nr@acton-ma.gov.