

Where Are the Bees?

(January 2020)

If you think there are fewer bees buzzing around you lately, you are right! The bee population has dropped substantially and the potential impact this may have on our environment is huge. There are several factors contributing to the decline in the bee population. From climate change to parasites to human interference, bees are contending with a lot to keep their numbers up.

While bees are rarely directly affected by climate change in relation to hive success, the impact on their food sources could prove devastating. As temperatures climb globally, many common bee habitats have experienced drought leading to plant loss, or a loss of food for bees. Surviving changes like these means moving to areas where foreign predators and illnesses exist, something bees are not equipped to handle.

Another extremely damaging force working against our bee population is the Varroa mite, which preys on honeybees. This parasitic pest specifically attaches to honeybees because it reproduces in their hives. The Varroa mite is the largest disease source for the honeybee, carrying several extremely harmful illnesses, including varroosis. Left unaddressed, Varroa mites can completely decimate a hive. In addition to carrying several devastating viruses, the Varroa feed off the fat of healthy drone

bees, leaving them weak. In turn, the bees live shorter lives, have difficulty navigating to and from the hive, and may have birth defects in reproduction. As if all this weren't enough to do serious damage, these mites will use any member of the hive for reproduction purposes. When drone bees stop breeding and the mites no longer have access to drone larvae, the Varroa will switch to worker bees and larvae, killing off a large portion of the population and often destroying the hive. This mite originated in Asia but has been introduced to several countries on several continents over the past 60 years, which has had a devastating effect on the global honeybee population.

While several factors have contributed to the shrinking bee population, the human factor may be one of the biggest. While we aren't directly attacking bees, much of what we do has a negative impact on their population. On farms, we use artificial fertilizers and weed killers, and set aside vast amounts of land for a single crop. Natural fertilizers and weeds are common food sources for bees. Single crop farms often leave a bee with severely limited food sources much of the year. We also routinely use pesticides that kill or hurt bees along with the targeted pests. Some researchers even believe that the wireless networks we use everywhere are impacting the honeybee population by interfering with bees' ability to navigate home.

The bee population decline means farmers will have more difficulty producing and sustaining crops. Losing a natural and effective pollinator like bees means we may have to find new places to get our food. We also may have to develop more ways to pollinate plants by hand or with machines to keep them growing without bees.

While these may seem like viable solutions, each time we humans try to step in and fix a problem in nature, we run the risk of creating another one. Our ecosystem is extremely delicate. Whatever steps we take to correct the bee problem should be done with care and caution, lest we feel the sting of more than just bee loss.

Teacher Resources – Vocabulary

Potential Words for Further Study: These words not only help with comprehension of the passage, they also appear more frequently in a wide spectrum of reading, especially in academic text. Therefore, further study of the meaning of these words may be beneficial. The words on this list can be incorporated into subsequent lessons.

Wilson Reading System Vocabulary Level: AB

climate (n) the prevailing or average weather conditions of a place, as determined by the temperature and meteorological changes over a period of years

environment (n) the external surroundings in which a plant or animal lives

Words for Quick Discussion: Consider discussing these words as they are encountered to help students comprehend the passage. A quick discussion in student-friendly language while reading the text is best.

Wilson Reading System Vocabulary Level: B

decimate (v) to destroy or kill a large part of

devastate (v) to lay waste; make desolate; ravage; destroy

drought (n) a prolonged period of dry weather; lack of rain

ecosystem (n) a system made up of a community of animals, plants, and bacteria interrelated together with its physical and chemical environment

synthetic (adj) not real or genuine; artificial

Definition Source: Collins English Dictionary. Retrieved from <https://www.collinsdictionary.com/us/dictionary/english>

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1. Visit the Coh-Metrix Text Easability Assessor website at <http://tea.cohmetrix.com/>. If you do not already have a login and password, create one. It is free and easy to sign up for access to the website.
2. Once you have created an account and sign in, you will be taken to a page with an empty, white text box. Copy and paste the text from this passage into the empty, white text box. Make sure you are only copying and pasting the body of the passage. Do not include the title, date, or any of the resources present in the passage.
3. When you have pasted the passage into the text box, click on the red button beneath the text box that says "Analyze." There will be a short delay and after a few seconds, you will see a bar graph appear to the right of the screen.
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