

EXTENDED INFORMATIONAL READING COMPREHENSION: THE BUZZ ABOUT BEEKEEPING



Read the passage about beekeeping, and then answer the questions that follow.

- 1 Humans have been practicing *apiculture*, or beekeeping, for thousands of years. In fact, the first records of beekeeping are from ancient Egypt around 5,000 years ago. The benefits of beekeeping are well established. But its full effects are a bit more complicated.

WHAT IS BEEKEEPING?

- 2 Modern beekeepers typically use hive boxes to raise colonies of honey bees. The hive box has one compartment where the queen bee lays eggs. It has a separate section where worker bees fill honeycombs with honey. The box is built on a stand to keep it off the ground and protected from predators.
- 3 The hardworking honey bees spend the spring and summer collecting nectar and pollen. They bring it back to the boxes to feed the colony. They build wax honeycombs inside and fill the hexagonal cells with honey made from nectar. A few months later, the beekeeper collects some of the honey and wax, leaving some for the colony.
- 4 Of course, bees can sting when they feel threatened. So how do their human caretakers stay safe? Beekeepers wear special coverall suits with large, veiled hoods. When approaching the hive to collect honey, beekeepers use smoke to calm the bees. Smoke blocks the bees' sense of smell, limiting their ability to communicate through chemicals called pheromones. This prevents the bees from organizing an attack against the perceived threat, helping the beekeeper stay safe. Beekeepers usually use a metal smoker shaped like a watering can, with a smoky fire inside. Once the honey is collected and the smoke goes away, the bees return to their work.



A beekeeper in protective gear handles a frame from the hive box where bees build their hives with wax and honey.

- 5 Some beekeepers conduct apiculture as a serious business, relying on it for income. Others do it as a hobby. But what wider effects does beekeeping have?

HOW DOES BEEKEEPING AFFECT HUMANS?

- 6 Without a doubt, people benefit from apiculture and the products that bees help create. We use honey as a sweetener and for nutrition, beeswax for products like lip balm, and even bee venom in some medications. Beekeepers harvest and sell these products, making apiculture a buzzing profession.
- 7 But one of the most important benefits of beekeeping is pollination. Pollination is when pollen is transferred to fertilize a flower. Most flowering plants—75 to 90 percent—need help with pollination, though. Pollinators, such as insects and birds, help transfer pollen so that flowers can grow fruit and reproduce.



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Keep going! Continue reading, and then answer the questions that follow.

Honey bees are excellent pollinators. In fact, a University of California study reported that “one out of eight interactions between a non-agricultural plant and a pollinator is carried out by the honey bee.”

- 8** Agriculture also depends on honey bees. Like wild plants, most agricultural crops must be pollinated. In fact, many farmers pay beekeepers to rent their bees. The beekeepers transport the hives to the fields or orchards when the crops need pollinating. About one-third of American food crops depend on pollination by the humble honey bee.
- 9** Beekeeping isn't always advantageous, though. Honey bees can be dangerous to humans and other living things. Some people are highly allergic to bee stings, so widespread beekeeping could threaten their safety. Additionally, honey bees sometimes carry diseases that infect native bees and other insects. This can reduce the number of pollinators, harming both wild plants and crops.

HOW DOES BEEKEEPING AFFECT THE NATURAL ENVIRONMENT?

- 10** Beekeepers often focus on the environmental benefits of apiculture. It's true that bees can help certain plant populations. Most wild flowering plants rely on pollinators, and honey bees are excellent at this task. Many beekeepers raise bees because they want to help wild plants thrive.



A honey bee pollinates a Himalayan blackberry flower—a plant that is invasive in many places.

- 11** However, beekeeping isn't necessarily beneficial to all ecosystems. Honey bees are only native to Africa, Southern Europe, and the Middle East. In other places, honey bees are non-native and can be harmful to native species of plants, animals, and insects.
- 12** In places without honey bees, plants rely on native pollinators. In certain ecosystems, native pollinators tend not to pollinate non-native plants. Honey bees, however, are often better at pollinating these non-native plants, enabling some invasive plant species to spread. Sometimes these invasive plants replace native plant species, even driving the native species to extinction.
- 13** An overabundance of honey bees may harm native insects and birds as well. Honey bees compete with native pollinators for limited supplies of pollen and nectar. This can cause populations of native species to decline or die out. Thus, scientists warn that in some places beekeeping may do more harm than good.

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THE SWEET AND THE STING

14 Honey bees, though small in size, play a major role in the life of our planet. Apiculture provides humans with useful products and crucial pollination for crops. Honey bees help wild plants, too, but in some places these bees can disrupt ecosystems and harm native insects and plants. Overall, the buzz about beekeeping is that it has clear benefits, but perhaps also a hidden sting.



COLONY COLLAPSE DISORDER

In 2006, North American beekeepers started reporting a mysterious condition harming their honey bee populations. For reasons still not understood, worker bees were abandoning their hives and the queen bee. Without the worker bees, a colony can't survive. This disorder was named colony collapse disorder (CCD) in 2007. As people learned about this issue, many jumped into action. Dr. David Tarpey, a professor at North Carolina State University, saw a great increase in hobby beekeeping after news of CCD spread. He said of the new beekeepers, "most of them are getting into it because they hear that bees are in trouble."

Answer the questions about the text.

1 What is the main idea of the passage?

2 What is the author's most likely purpose for writing this piece?

- a. to provide a practical guide for starting a beekeeping hobby
- b. to argue for more local beekeeping programs around the world
- c. to speak out against the use of honey bees in agriculture
- d. to raise awareness about the effects of beekeeping

3 How do the photo and caption on page 1 support understanding of the text?

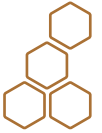
4 What primary purpose does the sidebar on page 3 serve?

- a. It provides additional information about a topic related to beekeeping.
- b. It gives a specific example of one of the harmful effects of beekeeping.
- c. It lends credibility to the author by giving quotes and statistics.
- d. It warns readers about one of the dangers of hobby beekeeping.

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Keep going! Answer the questions about the text.



5 Cite specific evidence from the text to complete the table below with some of the effects of beekeeping.

	POSITIVE OR HELPFUL EFFECTS	NEGATIVE OR HARMFUL EFFECTS
EFFECTS ON HUMANS	<p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p>	<p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p>
EFFECTS ON THE ENVIRONMENT	<p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p>	<p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p>

6 **PART A:** Which of the following claims is best supported by evidence in the passage?

- a. Bees can sting when they feel threatened.
- b. Honey bees are excellent pollinators.
- c. Humans rely on products created by bees.
- d. Honey bees help invasive plants to spread.

PART B: What evidence does the author use to support the claim in Part A?

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7 **PART A:** The author describes different insect and plant species as “native” or “non-native.” What do these terms mean?

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PART B: Why is the concept of native and non-native species important when discussing beekeeping?

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