

Where We'll Go When the Bees Go

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The diminishing honeybee population is a problem that the entire human race should be aware of; those mindful of this issue probably already have an idea of its severity. The honeybee is the insect responsible for the pollination of over 30 percent of the world's crops. Honeybees are the reason why we get to enjoy such a variety of fruits, nuts, and vegetables. The bees are dying at a rate unfamiliar to humans but despite this fact, many people are still unaware or think it won't affect us. This issue is a really big deal for humans, and more people need to be involved in order to find a solution. However, we have yet to find all of the causes, let alone how to go about resolving them. The bees have been around for millions of years and have had a key impact on humans for thousands of years (Jones). What is to come of humans if we are unable to cease this problem, and the bees disappear completely?

Bees were here on earth long before humans. Fossils of bees, honeybees in particular, have been found that date back millions of years ago when the continents were all connected into one large land mass known as Gondwana. The honeybees evolved to transfer pollen from plant to plant as a more reliable method than letting the wind do the job. When Gondwana began to split up around 40 million years ago, some of the bee populations died off while others, including Indo European bees, localized and continued to survive. Over time the bees evolved, forming larger tongues and pollen baskets, and formed colonies to return to with their collected pollen. Around 2-3 million years ago, the bees moved into Europe as well as down into Africa forming new species. As early civilizations emerged, humans began hunting for honey, which was depicted in paintings and cave drawings across the world (Jones). It's fascinating how such a prehistoric creature has continued to be a part of human civilization up until today, but possibly won't be for much longer. Back then, bees were viewed as distinctive creatures barring a unique honey that people would seek out and collect. However, like everything else in this world, opinions and priorities change.

Civilizations in Europe as well as northern Africa began to form beekeeping centers. These beekeeping centers rapidly grew, as bees were respected and prized. "By 594 BC beekeeping in Athens had reached such a scale that Solon passed a law stipulating that stocks of bees had to be placed 300 feet apart" (Jones). This shows that humans were growing accustomed to having bees in their lives as a controlled species rather than a wild creature that flew about the land. At this point bees were a mysterious species that felt abundant in population and containing some of them felt like an act with no harm.

When the Americas were colonized, Europeans brought honeybees and many people with the skills to house and keep bees. Bees were being spread around to pollinate more and more. "Meanwhile, English colonists took bees to New Zealand, Australia and Tasmania, completing human-assisted migration of *Apis mellifera* around the globe" (Horn). Bees, as well as humans, were now across the world. Bees originally covered the land on earth, but this was only due to humans helping them move. There was no thought as to the unnatural effects of moving a creature to new land, as expansion was the goal in all scenarios.

Man's relationship with honeybees continued to grow as agriculture grew and developed in various countries. Transportable hives were developed, giving the owners an easier way to move their colonies of bees. It was now very clear that man owned the honeybee in every sense, though we forget that the bees are the ones keeping *us* alive.

Bees were there before us, but we felt as if we had the right to control them (Jones). Like with many animals, the thought of them completely disappearing someday is almost never a worry to humans.

The instinct and ability of the honeybee was of great interest to humans, for they could protect and react to various dangers. Rudolf Steiner, a renowned philosopher from the late 19th century, had many ideas about ecological sustainability. He talks about a story in his book Bees, where he found some of his bees covering up a dead mouse with resin and wax to create a barrier between them and the mouse. Since they were unable to move the mouse out of their hive, their instinct was to do the next best thing, separate the rotting mouse from themselves (Steiner). Bees are able to work together and adapt to many situations and obstacles facing them, but only to a certain degree. Man seems to test the limits of many creatures without looking at them with a holistic and long-term approach.

Bees continue to be a necessity for the production of many crops across the world. Humans rely on their pollination for a large portion of our food. “The Food and Agriculture Organization of the United Nations (FAO) has estimated that out of 100 crop species which provide 90% of food worldwide, 71% of these are bee-pollinated” (Beesfree Inc). Given these statistics, a world without bees would be something hard to fathom for the life of humans. If our planet lost one of its main pollinators, we would rely only on seafood and plants pollinated by beetles, flies, and other non-endangered pollinators. Bees pollinate over 54 kinds of fruits, seeds, and nuts, including onions, mustard, celery, and almonds that are eaten across the world. I think many people simply don’t know that bees are responsible for all this pollination. This knowledge needs to be more common in order to support the reliance that we currently have on honeybees.

Along with the production of crops through agriculture, honey and wax are commodities presently desired across the world bringing bees into demand just about everywhere. Bees are needed to pollinate as well as to produce large amounts of honey wax. In this, quantity is the main focus, while the quality of life for the honeybees is often forgotten. This makes for areas where single species of honeybees are predominant, allowing for more disease due to the lack of any sort of genetic diversity. Interbreeding of queens to prevent the spreading of diseases results in shorter life spans for bees, adding to this short-term way of living. The life of bees are getting farther and farther away from natural, making it hard for them to continue on.

As the human population builds, our demand for food grows. Many agricultural practices including the use of pesticides, insecticides, and fungicides, have evolved to provide larger and more consistent yields. However, since 2006 scientists have in fact noticed a large dip in the number of honeybees alive (McDermott). The bees are dying. Many people believe that the pesticides being used on the crops are getting into pollen and killing off the bees. “Banning one class of pesticides may be part of the solution but it’s not the entirety of it. As this research shows, factors that on their own may not be decisive or direct can influence the situation in complex and subtle ways that aren’t immediately intuitive or obvious” (McDermott). McDermott clearly states that by directly eliminating one of the factors to the dying bees, we have yet to get rid of the problem as a whole, for there are more factors affecting them. Humans have yet to pin point all of the causes and are currently researching and doing what they can in order to reverse this crisis. “Some blame a new class of pesticides called neonicotinoids and want

them banned. However, a ban would force farmers to use pesticides that are more toxic to bees” (Driessen). I believe what this writer is trying to get across is that humans in a way have dug themselves into a rut that, if even possible, will be very hard to get out of. With such a reliance and dependence on chemicals, if we get rid of one of them, we will have to find another chemical in order to continue our current level of production. We are used to a lot of food being put out to feed the world and the use of pesticides have been one of the answers so far to meet this quota. Bees are paying the price for it, yet we have done very little to change for the future of agriculture.

Bees are transported in colonies across the country in order to pollinate different massive monoculture farms. They are enclosed inside a truck and driven hundreds if not thousands of miles. In history, bees have never ridden in automated vehicles and these long journeys, trapped in high temperature enclosures, are killing many of the bees. Once they arrive at the location, where they are technically forced to pollinate, the migratory beekeepers wake the bees up by feeding them high fructose corn syrup. This man-made “sugar” is what they are feeding the creators of honey itself. This step is beyond unnatural. The bees go around pollinating this one crop and then are trucked away to a new location. Great stress is put on the bees when they are moved on and off the trucks with forklifts. The bees can only undergo so much stress until they are unable to do their job, and ultimately die. It’s simply not a sustainable method, and more and more bees are dying. Bringing bees from different locations is what is spreading different diseases around which weren’t there before. These diseases are spreading, causing more and more of the bees to die (Imhoof).

Monoculture is one of the main modern systems in agriculture that the bees simply can’t handle. When there is only one crop in a massive area, the bees can’t continually feed off the same crop and since there isn’t anything else around, they starve to death. What these farms are forgetting is that once the bees all die from this abuse, there will be nothing to pollinate the crops and they will go bankrupt. It’s only a matter of time (Imhoof). Very little thought is being put into the future of feeding the world. If there was a variety of plants growing across the country like nature intended, the honeybees would be able to survive on the land with little problem. I see the appeal in monoculture and how it fits the way society is currently structured—there are lots of people who need lots of cheap food. People also want a lot of variety in their food while remaining stagnant and in one place. However, this requires land to be dedicated to one crop and food to be shipped across the country, and the world, to meet people’s needs (or wants, in many cases).

Some who are passionate about working with bees have started programs where they will teach others how to keep bees and will provide them with materials and supplies to do so. It gives many the opportunity, if interested, to learn how to house a hive for themselves. However, not enough people are interested. Many of these programs are in fact heavily based on the idea of producing honey, but I personally believe, regardless the intentions, this increase in interest and attention could ultimately help the bees in the long run. That said, I have in fact seen more and more newspaper articles referring to Colony Collapse Disorder, but none offer any solutions. There needs to be more push towards the idea of, “It doesn’t matter that we don’t know exactly what is killing the bees, but rather at this point we just need people invested and curious about working with bees” (Imhoof).

Bees are very complex beings in the way that they do their job and are quite resilient to enemies when in large numbers. Humans have obviously put too much control on the bees, as well as the environment, if the bees are starting to die. In some of the apple and pear orchards in China there are monoculture fields where there has been such heavy use of pesticides that bees can no longer survive there at all. In response to this, humans are going around the fields with buckets of pollen and a brush, hand pollinating the trees (Goulson). If you have ever observed a honeybee pollinating flowers, which I'm sure just about everyone has, it's apparent that no human could compare to the efficiency of a bee. "To obtain a load of pollen from the following flowers, observers have determined that it takes 346 visits to red clover forests, 84 visits to Bartlett pear blossoms and 350 to alfalfa forests. There should be little doubt as to the significance of honey bees as pollinators based on their pollen collection behavior" (Connor). The bees have a repetitive and consistent nature that humans will never be able to fully emulate.

Too much time and energy is being put into trying to "evolve" the bees so that they can adapt to our way of living, rather than changing *our* ways to work with nature. The bees are going to continue being manipulated more and more through inbreeding and transportation because we have used so much land for these single crop farms which yield the most profit; the bees will never be able to live naturally again. If, or rather when, the bees die, we will have to find a new way to pollinate all of the world's crops. Based on what history displays of human interaction with the environment, I believe we won't immediately switch the things that we are eating, but instead find a new way to emulate nature rather than protect what we already have. More and more people in need of work will be hired in masses to go around fields and hand-pollinate these monoculture farms. Jobs will continue being directed towards keeping our population alive instead of maintain and preserving others. The mindset of the world is no longer going in the right direction. The bees aren't going to all die at once one day, but instead will be pushed and pushed to their limits until we only have a few left.

Humans need to put more and more attention towards the bee population if we want even a chance to help them survive. Without more time and energy focused on this, the bees could die out faster than we would have ever imagined. We will lose so many crops that humans rely on if we don't change, for there aren't enough people in the entire world to hand fertilize all of our crops. Horst Kornberger said in the documentary *Queen of the Sun*, "Nature is patient for a long time, but there is a moment when things collapse. We have to wake up early so that we can make a change." All we can do at this point is to devote ourselves and try, but no one is sure that we will be able to save the bees. Nothing goes on forever, and the life of nature's bees could very likely be coming to an end. Bees have been on this planet for tens of millions of years and it only took a few thousand for man to kill them. Humans are the most destructive creatures that have walked the earth, while giving little back. If more and more people became aware of the problem we have created for ourselves then we might be able to put a halt to the continuous decline in the health of our planet. All that we have left is hope for the sake of the bees and ourselves. The drastic changes to nature that we have made, through mechanization for the sake of profit, have overtaken nature. We have dug ourselves so deep into this profit-driven hole, that it is hard for most of us to even see it. We forget that the bees will continue to live if the humans were gone, but it will be extremely difficult if not impossible for mankind to live without the bees.

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