

Bee Buzz



Bees play an important, but seemingly invisible role in most world eco-systems where there is vegetation for the minimum of 3 to 4 months per year. If there were no bees all of the tropical forests, savanna woodlands, forests and plains' abundant species of plants and animals would not be capable of survival. The production of seeds, nuts, berries and fruits are

highly dependent on insect pollination and bees are the major pollinators. In farmed areas pollination of many cultivated crops and the maintenance of biodiversity within non-cultivated areas depends on those busy little bees. Without bees there would be no flowering plants and vice a versa. Usually the older an ecosystem the higher the rate of biodiversity, higher biodiversity promotes pollinator specialization with particular bees having one or a few plants, trees, or crops that they specialize in pollinating. Destruction of the area's ecosystem causes these specialized bees to lose their stable resources. One of the biggest threats to human existence would be the de-stabilization and loss of the global honeybee population.

80% of flowering plants rely on insect power to be able to reproduce. Nectar, besides pollen is produced by flowers to attract the bees. These massive numbers along with their foraging one plant species at a time are the success factors in their efficiency. Bees have to learn where in a flower the nectar is found and many plants have bee-tracks. These tracks occasionally can be seen by humans but most often are in the ultraviolet part of the light spectrum, being visible only by bees. After some visits to the same type of flower the Bee learns where the nectar is enabling subsequent trips to the area are completed more quickly. Bees being extremely hairy make them highly effective in collecting pollen along the branch structure of each hair. Pollen is the protein food for

bees and without it nurse bees cannot produce the milk or royal jelly to feed the Queen and her brood. Without pollen availability, the Queen's egg laying will stop.

So what is the buzz about bees? The buzz is basically that the honeybee populations have been dying off. This is a subject we all should be paying attention to since one out of every three of our mouthfuls of food is directly or indirectly attributed to the honeybee population and its skillful pollination. There are many reasons for the drop in the bees population not just CCD, or colony collapse disorder, which is decreasing an occurrence but still a cause of decreasing number of honeybees.

The known causes of this problem today include:

- Parasites and Pests-Varroa mites can be classified as the Modern day honeybee plague and has been the single most serious problem causing today's bee losses. These mites suck the equivalent of our blood in honeybees and if that isn't bad enough they also can carry viruses that do harm to the bees, causing destruction of bees wings. Hive beetles destroy the unprotected combs. These beetles' high reproduction rates are capable of destroying the healthiest of beehive colonies. Wax moths damage the beeswax comb, honey, and bee collected pollen. Usually secondary to an initial parasite or pest, they can destroy a weakened colony.
- Pathogens-certain viruses can cause deformed wings and paralysis. A bacteria known as the European Foulbrood bacteria destroys bee young. Also Nosema is a fungus that attacks female worker bees and causes a type of dysentery.
- Pesticides-the US environmental protection agency (EPA) has applied strict regulations to the pesticides that poison honeybees. Unfortunately, pesticide poisoning of honeybees still exists to some degree and the pesticides used to combat the Varroa mite also has a poisoning effect.
- The now common practice of transporting bees for pollination purposes to different locations within the United States seems to cause honeybees to exhibit symptoms of body stress.
- As more and more eco-systems are being reduced or destroyed due to urbanization the subsequent loss of forag-able habitat has an adverse impact on honey bee nutrition. Beekeepers have tried to solve this problem through supplementation (usually high fructose corn syrup) but no perfect duplication of bees' natural pollen/nectar diet exists at this time. This loss of habitat is causing a type of immune-suppressing stress within the honeybee.

- The number of Bee hives and colonies suffering from Colony Collapse Disorder has decreased over the past five years according to the Agricultural Research Service (ARS) but it still exists. It is unknown whether this Disorder is a primary cause or is secondary one due to the other factors that cause massive honeybee deaths. Colony Collapse exists when the majority of worker bees disappear, leaving behind the Queen, immature bees and some nurse bees. Although there is existing honey in the hive, without worker bees the supply cannot be replenished. Survival over the winter months is jeopardized, causing its entire collapse.

Bees work as a team and it will take teamwork by humans to ensure the world's bee population survival- Our own lives depend on it.

With Gratitude,

Kai