



The Buzz on Bees: Why Bees Matter

Group 11



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Why Bees Are Important

- Bees are important for our food security. Bees are responsible for 1 out of every 3 bites of food that we take.¹ 87 out of 115 crop species are dependent on pollinators.²
- Global agricultural economics is reliant on honeybees. Pollinators are accountable for generating \$30 billion a year in food production.³
- Bees have hidden control on native ecosystems.² Their presence determines the success of many plant species.

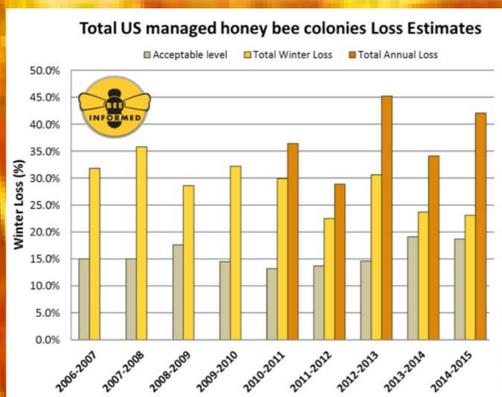


Figure 1: reference 6



Figure 2: reference 6

Status of Bees Today

- According to the US Department of Agriculture, 1/3 of the commercial honeybees died last winter. This was a 42% increase from the previous year.⁴
- California's honey production has fallen by nearly half in the past 6 years.⁴
- In the last half decade 30% of the national bee population has disappeared and 1/3 of all the bee colonies have perished.⁴

Reasons for Population Decline

- The problem is called the Colony Collapse Disorder (CCD).⁵
- CCD is “which is syndrome defined as a dead colony with no adult bees or dead bee bodies but with a live queen and usually honey and immature bees still present.”⁵
- Some other issues that effect the bee colonies are:
 - Virus
 - Parasites
 - Lack of pollen
 - Fungi
 - Pests
 - Pesticides Use⁵
- Another issue, is genetic diversity, queen bees breed that are bred by hand can select for the wrong traits and this could lead to breeding out an important gene.²

Proposed Solutions

- Planting hedgerows that flower at different times allows native bees to pollinate year-round, decreases the transportation of honeybees, and decreases the use of pesticides.⁷
- The pesticide that remains in the beehive wax needs to be removed by making new wax.²
- Integrating honeybees with native pollinators would mean less competition among bee species.²
- Home gardens should have plants that bloom at different times, use pesticides sparingly, and avoid spraying in the middle of the day.⁵
- Pesticide timing is key. Farmers should avoid spraying pesticides in the middle of the day when bees are pollinating the most.⁹

Ongoing Research at CSU

- Stacy Endriss, a Ph.D candidate in ecology, is currently studying the native bee diversity in Eastern, CO. She has 30 different crop sites, where she captures and identifies the bee. She is studying how crop strategies affect bees. She found that the conservation strategic plans of taking fields out of agriculture for a few seasons helps the bee population.²
- Keziah Katz, a Ph.D student, is studying how nutrition can affect bee cognition. She does this by adjusting individual nutrition versus the colony's nutrition. She found that more food for bees means that they go out further to find new resources. With less food, they stay in the places they already know has food.⁹

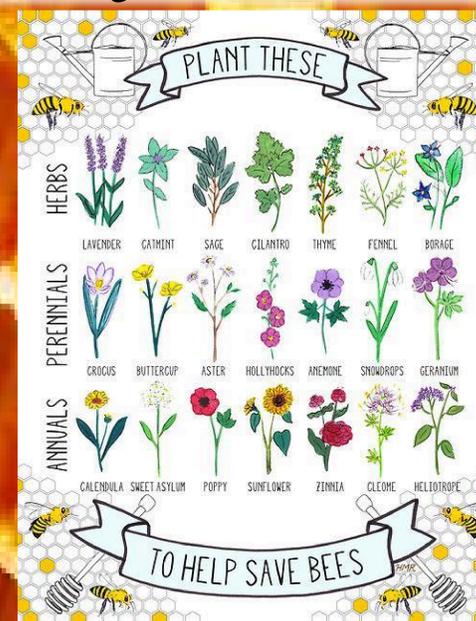


Figure 3: reference 8

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