

# Economic Value of Commercial Beekeeping



Agriculture is a major industry in the United States with a direct connection to one in every twelve jobs. Since the early twentieth century, migratory beekeepers have provided a critical service to U.S. agriculture by moving their hives seasonally to pollinate a wide variety of crops. According to a May 2013 report by USDA, pollination contributes between \$20 and \$30 billion in economic value to agriculture each year. Without the yield increases made possible by commercial pollination services, food prices would rise, our farm sector would become less competitive globally, and the security and variety of our food supply would diminish. With wild insect pollinator populations already in serious decline, commercial, migratory beekeeping is ever more vital to our agricultural economy.

The media has focused on the “mystery” behind these bee deaths, and largely overlooked the economic story. We are witnessing the rapid decline of an extraordinarily resilient and productive community, run primarily by family businesses whose members traverse the country to provide irreplaceable services.

## Economic Value

Honey bees are the most economically valuable pollinator worldwide, and many high-value crops such as almonds, apples, avocados, blueberries, cherries, and cranberries, are almost entirely reliant upon pollination services of commercial beekeepers. Globally, 9.5% of the total economic value of agricultural production for human consumption comes from insect pollination.

## Role of Honey Bees in Agriculture

- One in three bites of food we eat is dependent on honey bees for pollination.
- Of the 100 crops that provide 90 percent of the world's food, over 70 are pollinated by bees.
- In North America, honey bees pollinate nearly 95 kinds of fruits, such as apples and cranberries.

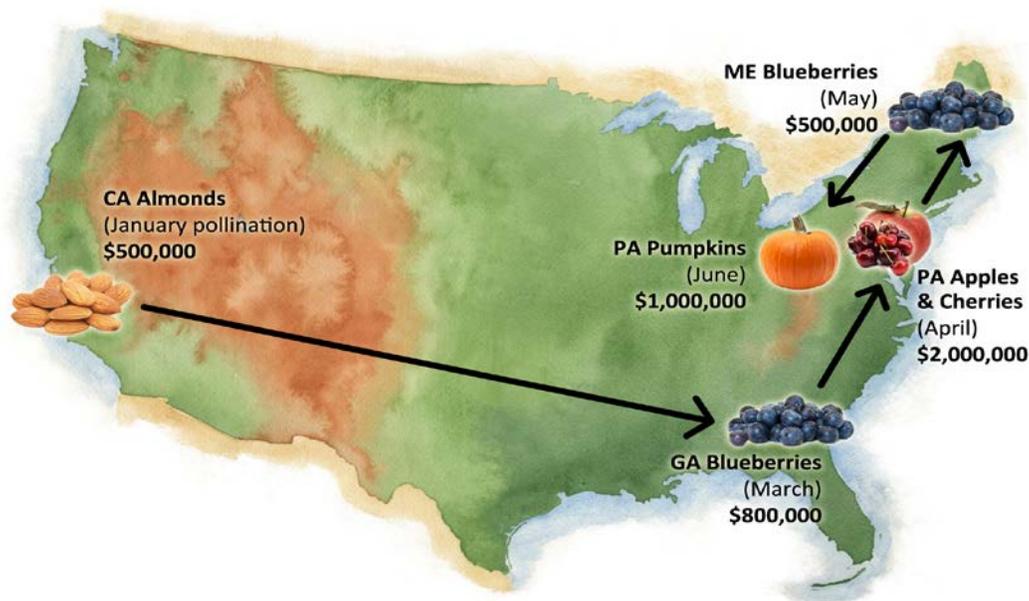
U.S. Crops	Crop reliance on bees	Approximate crop value	Economic value of bees
Almonds	100%	\$4.35 billion (2012)	\$4.35 billion
Apples	90%	\$3.08 billion (2012)	\$2.77 billion
Avocados	100%	\$406 million (2011)	\$365 million
Blueberries	90%	\$781 million (2012)	\$702.9 million

- More than three times as many colonies of honey bees are rented for the pollination of almonds than are used for the pollination of the next most important crop (apples).
  - California is responsible for more than half the world's production of almonds, and requires pollination from over 60 percent of managed hives in the U.S., ranging between 1.3 and 1.5 million hives for a successful harvest.
- The number of colonies rented for apple crops is estimated to be more than 275,000.
- However, according to USDA scientists, current estimates of the survivorship of honey bee colonies are too low to be confident of their ability to meet the pollination demands of U.S. agricultural crops

## Pollinator Decline and the U.S. Agricultural Economy

- Losses of honey bee colonies since 2004 has left North America with fewer managed pollinators than at any time in the last 50 years, with commercial beekeepers consistently reporting annual losses of 29-36%, far exceeding the historical rate of 10-15%.
- Since 2006, an estimated 10 million bee hives, at a value of \$200 each, have been lost, with the total replacement cost of \$2 billion left solely for beekeepers to bear. Over the 2012/2013 winter, beekeepers on average lost 45.1% of their colonies. The losses that are 78% higher than operational losses seen the previous winter (2011/2012).
- Indeed, 70% of beekeepers reported losses greater than the “normal” rate of 15%. A USDA report notes that fewer bees can lead to higher food prices.

## Economic Loss from a Single Bee Kill Incident



## Bee Kills and the U.S. Agricultural Economy

- September 2010, a beekeeper experienced a complete loss of 200 honey bee colonies to pesticides. The graphic above illustrates how these bees would have provided almost \$5 million to the U.S. agricultural economy [David Hackenberg, personal communication, January 10, 2012].
- This year, a bee kill of over 50,000 bumblebees, representing 300 colonies occurred in Oregon and 1000 to 1500 honey bee colonies were killed in citrus groves in Florida after a pesticide application.

## Resources Consulted

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