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Honeybees Vanish, Leaving Keepers in Peril

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Ann Johansson for The New York Times

Isaias Corona of Bradshaw Honey Farm, near Visalia, Calif., putting corn syrup — bee food — into hives. The farm has lost about half its bees.

By ALEXEI BARRIONUEVO
Published: February 27, 2007

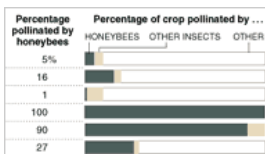
VISALIA, Calif., Feb. 23 — David Bradshaw has endured countless stings during his life as a beekeeper, but he got the shock of his career when he opened his boxes last month and found half of his 100 million bees missing.

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A Disappearing Act for Bees



Graphic

Relying on Bees

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In 24 states throughout the country, beekeepers have gone through similar shocks as their bees have been disappearing inexplicably at an alarming rate, threatening not only their livelihoods but also the production of numerous crops, including California almonds, one of the nation's most profitable.

"I have never seen anything like it," Mr. Bradshaw, 50, said from an almond orchard here beginning to bloom. "Box after box after box are just empty. There's nobody home."

The sudden mysterious losses are highlighting the critical link that honeybees play in the long chain that gets fruit and vegetables to supermarkets and dinner tables across the country.

Beekeepers have fought regional bee crises before, but this is the first national affliction.

Now, in a mystery worthy of Agatha Christie, bees are flying off in search of pollen and nectar and simply never returning to their colonies. And nobody knows why. Researchers



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Ann Johansson for The New York Times
A honeybee collects nectar from an almond tree in bloom.

say the bees are presumably dying in the fields, perhaps becoming exhausted or simply disoriented and eventually falling victim to the cold.

As researchers scramble to find answers to the syndrome they have decided to call "colony collapse disorder," growers are becoming openly nervous about the capability of the commercial bee industry to meet the growing demand for bees to pollinate dozens of crops, from almonds to avocados to kiwis.

Along with recent stresses on the bees themselves, as well as on an industry increasingly under consolidation, some fear this disorder may force a breaking point for even large

beekeepers.

A [Cornell University](#) study has estimated that honeybees annually pollinate more than \$14 billion worth of seeds and crops in the United States, mostly fruits, vegetables and nuts. "Every third bite we consume in our diet is dependent on a honeybee to pollinate that food," said Zac Browning, vice president of the American Beekeeping Federation.

The bee losses are ranging from 30 to 60 percent on the West Coast, with some beekeepers on the East Coast and in Texas reporting losses of more than 70 percent; beekeepers consider a loss of up to 20 percent in the offseason to be normal.

Beekeepers are the nomads of the agriculture world, working in obscurity in their white protective suits and frequently trekking around the country with their insects packed into 18-wheelers, looking for pollination work.

Once the domain of hobbyists with a handful of backyard hives, beekeeping has become increasingly commercial and consolidated. Over the last two decades, the number of beehives, now estimated by the Agriculture Department to be 2.4 million, has dropped by a quarter and the number of beekeepers by half.

Pressure has been building on the bee industry. The costs to maintain hives, also known as colonies, are rising along with the strain on bees of being bred to pollinate rather than just make honey. And beekeepers are losing out to suburban sprawl in their quest for spots where bees can forage for nectar to stay healthy and strong during the pollination season.

"There are less beekeepers, less bees, yet more crops to pollinate," Mr. Browning said. "While this sounds sweet for the bee business, with so much added loss and expense due to disease, pests and higher equipment costs, profitability is actually falling."

Some 15 worried beekeepers convened in Florida this month to brainstorm with researchers how to cope with the extensive bee losses. Investigators are exploring a range of theories, including viruses, a fungus and poor bee nutrition.

They are also studying a group of pesticides that were banned in some European countries to see if they are somehow affecting bees' innate ability to find their way back home.

It could just be that the bees are stressed out. Bees are being raised to survive a shorter offseason, to be ready to pollinate once the almond bloom begins in February. That has most likely lowered their immunity to viruses.

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- [A Parasite Devastates Bees, And Farmers Are Worried \(May 2, 2005\)](#)
- [Hives for Hire Stop Only to Pollinate \(June 9, 2004\)](#)
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