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Farmers nationwide plant bee-friendly habitat to attract native pollinators, bolster honeybees

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DEL REY, Calif. — Dozens of farmers in California and other states have started replacing some of their crops with flowers and shrubs that are enticing to bees, hoping to lower their pollination costs and restore a bee population devastated in the past few years.

On an October morning, peach farmer Mas Masumoto planted more than 3 acres of wild rose, aster, sage, manzanita and other shrubs and trees in a former grape field near Fresno, Calif.



(Gosia Wozniacka / Associated Press) - In this photo taken Wednesday, Oct. 19, 2011, farmer Nikiko Masumoto, right, Mace Vaughan, center, of the Xerces Society for Invertebrate Conservation, and local naturalist Steve Haze plant native California shrubs that are attractive to bees at the Masumoto farm in Del Rey, Calif. As the number of honeybees and native bees continues to decline, farmers are starting to look for ways to help bees thrive.

To the north near Modesto, Calif., David Moreland was preparing to plant wildflower seeds and flowering shrubs in a ravine along his 400-acre almond orchard.

Their goal is to attract and sustain native bees and strengthen dwindling honeybee populations, joining in an effort organized by the Xerces Society, a Portland, Ore.-based nonprofit group.

“For bees to thrive, they need a diverse diet, so we’re trying to bring more pollen diversity to farms, more plants to be part of the bees’ buffet,” said Mace Vaughan, the group’s pollinator

program director. “This isn’t a panacea to pollination woes. This is part of the solution overall.”

The effort comes as honeybees — maintained by beekeepers — and native, or wild, bees are perishing in great numbers. Bees are essential pollinators of about one-third of the United States’ food supply, and they’re especially important in California, the nation’s top producer of fruits and vegetables.

The die-off is blamed on colony collapse disorder, in which all the adult honey bees in a colony suddenly die. The disorder has destroyed honeybee colonies at a rate of about 30 percent per year since it was recognized in 2006, according to the U.S. Department of Agriculture. Before that, about 15 percent of colonies died per year from a variety of pests and diseases.

Researchers aren’t sure what causes the disorder, but they suspect a combination of stressors, including pesticides, mites and parasites, and lack of proper nutrition.

The problem is especially dire in California, where large farms often grow single crops that rely on pollination but don’t offer bees a varied diet.

Almond orchards, which have grown dramatically in recent years, have some of the worst problems. Two-thirds of the nation’s honeybees are now trucked to the state during winter for almond bloom, but the arriving bees don’t have enough forage.

Beekeepers feed bees with supplements, including corn syrup, weakening bees and increasing costs. Prices for renting bee colonies have more than tripled over the last decade, from \$43 per colony in 2000 to \$150 per colony in 2010. Almond orchards require about 2 colonies per acre.

Getting farmers to plant bee habitat is key, Vaughan said, because bees with nutritionally sound diets are better able to fend off diseases and other problems.

Bee habitat can also reduce a farmer’s costs and alleviate the stress on honeybees. Through research on California’s watermelons, University of California, Berkeley, professor Claire Kremen found that if a farmer sets aside between 20 percent and 30 percent of a field for bee habitat, the farm can get all or most of its pollination from native bees

That's unrealistic for most farms, but Kremen said adding hedgerows and other plantings can help sustain a beneficial combination of native and commercial bees. Research has found that native bees make commercial honeybees more efficient pollinators by getting in their way and making them take a more circuitous route from plant to plant.

“What it means is you don't have to have a huge number of native bees, but if you have some then the combination of honeybees and native bees has a huge effect,” Kremen said.



(Gosia Wozniacka / Associated Press) - In this photo taken Wednesday, Oct. 19, 2011, farmer Nikiko Masumoto, left, carries a box of planting soil as volunteer Feliz Muzquiz helps plant native shrubs that are attractive to bees at the Masumoto farm in Del Rey, Calif. As the number of honeybees and native bees continues to decline, farmers are starting to look for ways to help bees thrive.

Other researchers have found that setting aside bee habitat leads to better crop production on the remaining land, compensating the farmer.

The California State Beekeepers Association is also helping farmers to improve habitat. Run by Project Apis m. — which funds and directs research to improve the health of honeybees — the program has enlisted growers to dedicate acreage to bees and is identifying which seed mixtures make for best bee forage on farms and in orchards.

“We want to make sure bees don't starve to death before and after almond pollination,” said Christi Heintz, executive director of Project Apis m.

The goal, Heintz said, is to make it economically viable for farmers to plant bee habitat. One option, Heintz said, is to plant a bee-friendly crop that can be used as biofuel, such as canola and camelina. Another is partnering with the cosmetics industry, growing oil seed plants such as cuphea and echium that are used in creams.

Another California-based nonprofit, Partners for Sustainable Pollination, awards a bee-friendly farming label to farmers who set aside at least 6 percent of their land for bee forage, minimize pesticide use and have nesting areas and a water source. So far, 120 farms in 29 states have received the label.

But for many farmers, such as almond growers, increasing bee habitat remains difficult.

Farmers keep orchard floors clean because they harvest almonds off the ground and because bare ground warms faster and is less prone to frost. Pesticide sprayed on trees also is harmful to bees, and mature orchards can be too shady for flowers and shrubs. And plants can be expensive, requiring irrigation for the first few years.

To get around the problem, Moreland has opted to grow flowering shrubs in a nearby ravine and has planted wildflower seeds in a young orchard that won't go into production for several years and isn't treated with pesticides. Giving bees access to more food makes a big difference, he said.

"The bees can continue to forage and get stronger, so it's one less stress on them, one less having to feed them artificial food, one more chance for the bees to survive," Moreland said.

Although bees aren't needed to pollinate Masumoto's peach orchard, studies have shown bees move pollen quickly and help produce better fruit.

But the biggest benefit, he said, is not about money.

"A real farm is not just a factory in the field, but a way to work with nature," Masumoto said. "The more nature plays a role, the more opportunities will arise to make things better."

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