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Farmers work to encourage native bee habitat

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With honeybee populations weakened by disease and the mysterious malady known as Colony Collapse Disorder, farmers place new focus on work to benefit native pollinators. Decisions by farmers and ranchers to replace bare ground along irrigation ditches and roadways with native plants, trees and grasses, in order to encourage beneficial insects and eliminate weeds, have evolved into a movement to bring native bees back to the farming landscape.

Farmers in Yolo County--the epicenter of this work--have partnered with various organizations to lead the way in protecting populations of native bees and restoring native bee habitat.

"The overall goal is to increase the capacity of these farms to support native bees for crop pollination," Mace Vaughan said. He directs the Pollinator Program for the Xerces Society, a non-profit group dedicated to conserving invertebrate species.



Yolo County diversified farmer Bruce Rominger has planted a wide variety of shrubs and perennials, resulting in a long bloom period to support a variety of bee species. Native grasses that serve as bumblebee nesting sites are also part of the project.

"All of these growers recognize that they need the proven consistency of honeybees, but with honeybees under threat, people are starting to look for an insurance policy and part of that insurance policy is increasing the capacity around the farm to support native bees that provide that pollination service," Vaughan said.

Gio Ferrendelli, farm manager for Muller Brothers Farm and Yolo Vineyards, acknowledges that when he planted native plants and grasses at the farm several years ago, creating habitat for native bees was not part of his master plan.

"I really had no intention of trying to develop a wonderful pollinator habitat," said Ferrendelli, speaking to a diverse group of people during a Yolo County Field Tour of Native Bee Habitat on Working Lands. "My whole goal was to create a pollen source for beneficial predacious insects for the vineyards. Somewhere along the line, the Xerces Society came along and said, 'Hey, there's a lot of bees flying around out here.' Then it became a dual-purpose insectary.'

Muller Brothers also planted a hedgerow and riparian filter/buffer strip between the road and a nearby slough that includes a diversity of shrubs and perennials with bloom periods from early spring until fall to support strong populations of bumblebees.

"What is unique about this site is this nearby pond that was planted with cottonwoods and willows probably 15 years ago. It is one of the undisturbed stable areas within the farm landscape and it is big enough that there is wild habitat there," Vaughan said. "This site has really been an important nesting area for bumblebees and part of the reason why bumblebees have been so successful here."

Muller Farm provides habitat that incorporates wooden bee blocks, a place where solitary female bees can lay eggs. Ferrendelli said he expects to continue planting natives to improve the source of pollen in the vineyard and increase the number of beneficial insects like lacewings that are natural predators for vineyard pests.

"This shows how much potential there is in all of our unused areas on our



ranches," he added. "I had no idea, until the researchers came out and started cataloging everything, how many different bees there would be flying around out here."

Yolo County walnut farmer Craig McNamara, owner of Sierra Farms, has opened his farm to research and to serve as the headquarters for the Center for Land-Based Learning, the Audubon California Landowner Stewardship Program and the Xerces Society California Pollinator Program office. For about five years, McNamara has partnered with these groups to restore native bee habitat on his property as well as serve as a primary location for outreach programs for growers and students.

"We've carved out a 40-acre piece of land dedicated to the work that Audubon, Center for Land-Based Learning, Xerces Society and others are focused on. What we're really trying to do is have something that is flowering all year long," McNamara said. "The proximity of having a hedgerow is very important for our active plantation of organic walnuts."

Mary Kimball, director for the Center for Land-Based Learning, said she began the project at Sierra Farms by planting hedgerows predominantly for insectary and wildlife value.

"Back in the late 1990s and in early 2000, we really weren't thinking so much about pollinators, we were thinking more about beneficial insects," Kimball said. "So the majority of the plants that were put in, it just so happened to be good for pollinators as well."

The hedgerow offers a variety of shrubs and perennials that provide an extensive bloom period and a tailwater pond area planted with a mix of grasses and forbs for plenty of bumblebee nesting sites. Over the years, high school students from throughout the state planted much of the native bee habitat at Sierra Farms, Kimball said, through programs with the goal of introducing them to sustainable agriculture and wildlife-friendly farming.

At the nearby Butler Farm, on property leased by Bruce Rominger for crops such as tomatoes, wheat and sunflowers, he and the property owner partnered with the research groups to enhance native bee populations by adding to existing riparian habitat.

"Over 15 years ago, we started planting hedgerows and native plants around fields that we have, trying to attract beneficial insects and control weeds. We are very interested in not just the native pollinator part of it, but the beneficial insect part of this project," Rominger said. "In five years, this is going to be a spectacular riparian zone. We are happy to be a part of this project."

Rominger planted a hedgerow between the road and a stabilized ditch featuring a wide variety of shrubs and perennials, resulting in a long bloom period to support a variety of bee species. Native grasses that serve as bumblebee nesting sites are also part of the project.

"We are balancing the goals and objectives of the landowner, farmer or rancher, with what we'd like to see in habitat restoration. It needs to make sense from the farmer's point of view and that means making sense from the economic bottom line," said Vance Russell, program director of the Audubon California Landowner Stewardship Program.

Claire Kremen, University of California, Berkeley, assistant professor of environmental science, policy and management, has been sampling bee species in Yolo County for more than 10 years and has found that about 300 native bee species exist within the county.

According to researchers associated with these projects, there are about 1,500 native bee species found throughout California. Having studied newly planted native bee habitat along the edges of farmland, near roadsides and adjacent to sloughs, Vaughan said, researchers are currently recording the types of native bees that have been found.

One farmer who has been described as a pioneer in creating native bee habitat on farmland is John Anderson of Hedgerow Farms, who first became interested in habitat restoration in the late 1970s. Over the years, he built a native seed and plant propagation business to help farmers bring natural habitat to their own operations.

"I got interested in native grasses and grasslands, realizing that once grasses are in place it will keep out weeds," he said.

Years ago, Anderson said, he realized that he had to make some changes after he became aware that he was losing nine tons of sediment per

"That alone was worth doing it (planting native habitat), but then the wildlife value is unbelievable," Anderson said. "This area was planted in 1990 and now we have a riparian oasis."

To learn more about programs offered to enhance native bee habitat, go to www.xerces.org. To learn about conservation cost-share programs through the 2008 Farm Bill, go to the U.S. Department of Agriculture Natural Resources Conservation Service Web site at www.nrcs.usda.gov.

(Christine Souza is a reporter for Ag Alert. She may be contacted at csouza@cfbf.com.)

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