Researchers focus on bringing missing bees back

By GENARO C. ARMAS

STATE COLLEGE, Pa. (AP) — Scientists in the field and the lab are trying to solve a mystery critical to the future of American agriculture: Why are honeybee hives failing at a disturbingly high rate?

Some researchers are studying whether pesticides and other chemicals used in fields and gardens might affect honeybees, as well as bumblebees and other insects that pollinate crops. Other research is focusing on building more habitat — planting trees, shrubs and flowers that pollinators prefer.

Bees are vital to U.S. agriculture because they pollinate many flowering crops, including almonds, apples and blueberries. The bee pollination is responsible for $15 billion annually in crop value.

Honeybees, a non-native species from Europe, are the pollinators of choice because they are easier to manage and are more plentiful — a single colony can contain 20,000 workers. By comparison, a bumblebee colony may have only a couple of hundred worker bees.

The honeybees have taken a hit over the years from mites and, most recently, colony collapse disorder, in which beekeepers have found affected hives devoid of most bees. Bees that remain appear much weaker than normal.

Beekeepers in 2006 began reporting losing 30 percent to 90 percent of their hives. Since then the annual loss rate has been roughly 33 percent, according to government estimates.

The first case of colony collapse disorder was officially reported in Pennsylvania, and Penn State University has been spearheading research. Maryann Frazier, a senior extension associate at the school's entomology department, said researchers remain concerned about the number and combination of pesticides that have been detected in decimated hives.

"We realize it's much more complicated than what we thought a year ago," Frazier said recently. "From what we know now, it's not something we'll figure out very, very quickly."

Native pollinators also are being monitored. The National Academy of Sciences in 2006 found declining populations of several bee species, along with other native pollinators like butterflies, hummingbirds and bats.

The report suggested that landowners can take small steps to make sure habitats are more "pollinator friendly," like by growing more native plants.

And that's what scientists appear to be doing on a larger scale across the country in hopes of bringing bees back.

One such track is at the Environmental Research Institute at Eastern Kentucky University, where apiculturalist Tammy Horn oversees an experiment in apiforestation, a term described by the school as a "new form of reclamation focused on planting pollinator-friendly flowers and trees."

The project is in its first year. Horn is working with local coal companies to plant trees, shrubs, and native wildflowers on reclaimed lands that would be attractive to pollinators, rather than the once-typical scenario of planting only high-value hardwoods to establish a timber industry.

There are years of study still to go, though there are no signs of colony collapse disorder so far, Horn said.

Local support from residents and coal companies has been encouraging to Horn. It helps that locals have family ties to beekeeping, with parents and grandparents perhaps dabbling in the hobby before it started to become less popular locally.

The rallying point has been concern about the disappearing bees, she said.

"That's been important for my project to succeed," Horn said in a phone interview. "Even people who don't care about beekeeping show up to (beekeeping workshops) in eastern Kentucky and know it's important. They like showing up on mine sites to see that coal mines care enough to invest in it."

The idea is intriguing enough to draw interest for similar projects in other parts of the country, including California and Pennsylvania.

"The more of these pollinator-friendly areas we have... the more likely we are able to retain bee species," said Karen Goodell, an ecology professor at Ohio State University trying to find the right mix of plants and trees to build native bee populations.

Her project is housed at The Wilds, a private, nonprofit conservation center located on nearly 10,000 acres of reclaimed mine land in rural southeastern Ohio.

"It's not as much a scientific study as a 'Let's do this and see what happens,'" Goodell said.

Though Goodell's work deals with native bees, she said the plight of the honeybees has drawn more attention to her work. Boosting native bees also could end up helping farmers, she added.

"Those populations would then be contributing to colonizing areas that have lost bees because of poor management," Goodell said. "Definitely, these bees will be playing a role in pollination services."

- Pollinator Partnership: http://www.polinator.org/