Study takes first good look at largely unknown native pollinators

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(PhysOrg.com) -- Ask a regular Joe on the street what he knows about bees, and he'll no doubt believe you to be talking about the kind brought to the U.S. long ago from Europe for honey-making purposes.

Ask University of Florida postdoctoral researcher Akers Pence, and he'll tell you all about different kinds of bees - those native to North America — how they've rarely been studied, how critical they are but how little is known about them.

To that end, Pence is directing the Institute of Food and Agricultural Sciences' portion of a five-year study of native pollinators. Specifically, the study will try to determine the most effective ways to attract the native pollinators, keep them around, and encourage them to pollinate Florida's crops.

The study, part of a larger effort called Operation Pollinator, has been supported with a $160,000 grant for its first year by Syngenta and the National Fish and Wildlife Foundation and includes research partners at Michigan State University and the University of California, Davis. The effort is aimed at evaluating native pollinators, especially bees, as pollinators of agricultural crops.

Today marks the start of National Pollinator Week, which runs through June 27. Events are being held across the country to draw attention to their value and their plight.

Efforts to study the native pollinators are especially timely because honey bees, long considered the “heavy lifters” among pollinators in modern agriculture, have been declining at an alarming rate, Pence said.

Researchers all over the country have been working to find the causes behind Colony Collapse Disorder, which has caused widespread bee die-offs since late 2006.

UF has several graduate students working on native pollinator studies, as well, said IFAS honey bee specialist Jamie Ellis.

Among them: Anthony Vaudo is studying native honey bee conservation in South Africa; Jason Graham is studying native pollinator habitat, nesting materials, how to encourage native bees to nest and educate Floridians about native pollinator conservation, and Katie Buckley is studying native bees that use specific Florida wildflowers. Fulbright scholar Pablo Herrera is studying native pollinators’ effectiveness with blueberries and watermelons and undergraduate honors student Julian Aris is researching wasps attracted to specific wildflower plots.

In research fields at IFAS’ Plant Science Research and Education Unit in Citra just outside Gainesville, Pence has four sites, each with experimental plots filled with combinations of native perennial and annual wildflowers, and is monitoring them to determine which works best to attract native bees and other pollinators.

Once that is known, agricultural producers and even backyard gardeners could plant those types of flower mixes to encourage the native bees to visit and linger.

On one recent morning, Pence and UF entomology junior Jonnie Dietz used butterfly nets and a stopwatch to go through each plot systematically — 10 minutes of observation, and another 10 minutes

capturing pollinators for documentation back at the lab.

Researchers at Michigan State and UC Davis have similar field experiments under way, Pence said.

Researchers hope to find easy and inexpensive ways for agricultural producers to help native pollinators and boost farm yields. It's imperative that they do: Some of the U.S. crops that are 90 percent or more dependent on pollination include almonds, apples, citrus, sweet cherries, melons, squash, cucumbers and blueberries. And 35 percent of the world's food production depends on pollination.

"That's what this native pollinators work is all about," Pence said. "There are about 4,000 bee species in North America, 316 of them in Florida - and we can only recognize maybe two or three of them in flight. So getting a chance to study them, up close, is great."

Provided by University of Florida

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