Bumblebees dive in to fill a void

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Native pollinators such as these fat, fuzzy bumblebees, once an overlooked sideshow in the insect world, are gaining widespread appreciation among everyone from backyard gardeners to big-time farmers. That's because European honeybees, the pollination mainstay of commercial agriculture, continue to struggle, with bee keepers routinely losing 30 percent of their bees every winter. Yet farmers count on those bees to pollinate some $15 billion in crops annually.

The European honeybee is the solo act of industrial agriculture. But in natural landscapes, there has always been a diversity of pollinators busily at work: bumblebees, moths, flies, beetles, butterflies, birds, and bats, just to name a few. There are 4,000 native bees in the U.S. alone, and at least 17,000 species known on the planet. And some of them make European honeybees look like slugabeds: Bumblebees will work when it's cool and cloudy and honeybees refuse to fly.

Native bees also can buffer declines in agricultural production because of honeybee losses. "They are really the unsung heroes," said Claire Kremen, an ecologist at the University of California, Berkeley who has studied native pollinators and the services they provide -- if conditions are right.

Native pollinators need food and habitat to survive. In her research, Kremen found that ironically, monocultures of single crops isolated from natural landscapes that most need the help of native pollinators are least likely to support them.

In recognition of the pollinator problem, Congress in the 2008 farm bill included cost sharing to encourage farmers to plant some of their land just for bugs, to diversify the nation's pollinator portfolio with more native bees and other beneficial insects.

The adage proves true: Build it, and they will come. Sarah Bergmann got a $6,000 grant from the city of Seattle last year to transform the parking strip in her Central District neighborhood into what she dubs a Pollinator Pathway, planted with the help of 50 neighbors last November.

Once a desert of grass with a few maples, the 108-foot-long, 12-foot-wide strip today blooms with plants selected to attract pollinators. It's buzzing with life that has spilled over to plantings all around the neighborhood. An orange trumpet vine festooning a fence out back is mobbed with bees too busy to bother anyone, some stacked two to a flower.

She hopes to eventually extend the pathway to a mile, in all. "It's so basic," Bergmann said. "I consider it local ecosystem support."

In her work as a Washington State University Snohomish County Extension educator, Sharon Collman also encourages providing habitat for a range of pollinators. In her North Seattle garden, piles of wood were heaped out back for insects to nest in, and a countless variety of plants nurtured over 30 years of collecting beckoned a bevy of bugs. "I am blown away by the number of beneficial insects in my small city garden," Collman said.

To her, a lifelong insect aficionado, pollinators finding and probing the blossoms of plants are a thing of beauty. "I am in total wonderment at the workings of the world."

So far, the dire predictions of a few years ago, of a wholesale European

honeybee die-off, have not come true, said Steve Sheppard, professor of entomology at Washington State University. But beekeepers say they are still losing 30 percent of the honeybees in their hives over winter to so-called Colony Collapse Disorder (CCD) and other problems -- about double typical losses in the past.

Researchers this week announced they might have identified a clue to understanding the mysterious disorder that began killing entire hives of European honeybees in 2006.

When researchers studied bees affected by CCD, they found the bees' ribosomes -- cellular material used to make protein -- in bits and pieces. "It looked like the ribosomes had just fallen apart," said May Berenbaum, a University of Illinois entomologist and co-author of the study, published in Proceedings of the National Academy of Sciences.

Viruses seem to be hijacking the bees' ability to make proteins, leaving the bees more vulnerable to disease and stress.

"We have found the bullet hole," Berenbaum said. "I can't say we have nailed it beyond dispute, but it is a plausible mechanism."

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