

# Honeybee diseases spreading

## Wild pollinators now also infected, researchers say

By Geoffrey Mohan

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Infectious diseases linked to the colony collapse of honeybees appear to be spreading among wild bumblebees that pollinate crops worldwide, dealing a potential double blow to agriculture, according to a new study.

Studies at 26 sites in England found that 1 in 5 bees suffered from deformed wing virus, which can ground and eventually kill the insects, according to a report published online Wednesday in the journal *Nature*.

More than a third of the honeybees were infected, and about 11 percent of the bumblebees carried the virus — figures that researchers called highly conservative. Evidence of another deadly parasite, the *Nosema ceranae* microspore, was less prevalent.

Although the path of the infection could not be determined with certainty, researchers said it very likely spreads from the honeybees, 88 percent of which carried actively replicating virus. Foraging from the same flowers probably accounts for the bulk of infection, while raiding of competitors' hives could contribute as well, the researchers said.

"We're only catching individuals that are alive and healthy and able to go out and forage," said principal author Mark J.F. Brown, a conservation biologist at the Royal Holloway University of London. "It's likely that the prevalence numbers that we report are lower than they actually are."

Commercially cultivated bees pollinate about 90 crops worldwide, a service valued at \$14 billion annually. In California, the \$3 billion almond industry spends \$239 million annually to rent more than 1 million honeybee colonies.

Researchers suspect the

*Varroa destructor* mite that infests honeybees is the primary transporter of the viruses. The sites in England are not unique hot spots, they added, but represent an outbreak pattern that could occur anywhere managed colonies of honeybees come in contact with native pollinators.

"If our interpretation of the direction of flow of the pathogen is correct, the prerequisites for that to be true are true across North America, across Europe and pretty much anywhere where honeybees have very high levels of the virus due to this parasitic mite *Varroa destructor*," Brown said.

The results drive home the need to manage honeybee colonies with greater care and to increase efforts to eradicate the *Varroa* mite, researchers said.

"We need as clean honeybee hives as possible, so the spread into the environment is mitigated," said co-author Matthias Furst, an evolutionary ecologist at Holloway University.