

A Clue in the Bee Death Mystery

Health/Science

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Insecticides are often blamed, but new signs point to another chemical. Photo: A rusty-patched bumble bee Credit: [Smithsonian's National Zoo/Flickr](#)

By [TOM PHILPOTT](#) for Mother Jones, Nov 29, 2017 Domesticated honeybees get all the buzz, but wild bumble bees are in decline too, both globally and here in the United States. What gives? It's an important question, because while managed honeybees provide half of the pollination required by US crops, bumble and other wild bees deliver the other half. Insecticides used in agriculture are one possible trigger—they exist to kill insects, after all, and bumble bees are insects. But a different kind of farm chemical, one designed to kill fungi that harm crops, has emerged as a possible culprit. A new [study](#) by a team of researchers led by Cornell University entomologist Scott McArt adds to the growing dossier of studies pinpointing fungicide as a potential bee killer (see [here](#), [here](#), and [here](#)). In their paper, McArt and his team looked at two factors related to bumble bee decline. The first is that many bumble bee species appear to be confining themselves to ever smaller geographical regions—a phenomenon known as range contraction. The other is a microscopic parasite called *Nosema bombi*, which has turned up at high rates in bumble bee species known to be deteriorating. Many bumble bee species appear to be confining themselves to ever smaller geographical regions. The team analyzed samples of bumble bees from eight species taken by previous researchers from 284 sites across the country between 2007 and 2009. For the areas surrounding each site, the McArt team crunched data for 24 environmental factors that might affect bee health: Everything from the level of [nearby](#) residential development to the portion of land devoted to forests to the amount of insecticides, herbicides, and fungicides applied by farmers. Their goal was to see which of these factors was most closely associated with shrinking habitats and *Nosema bombi* infections. Total fungicide applications in a given area emerged as the best predictor of range contraction; and a single widely used fungicide, chlorothalonil, proved to be the clearest indicator of *Nosema bombi* prevalence. The result wasn't a total surprise. A 2015 [study](#) by University of Wisconsin and US Department of Agriculture researchers found that bumble bee hives exposed to small amounts of chlorothalonil—which is widely used in [fruits, vegetables, and orchard crops](#)—produced fewer workers, lower total bee biomass, and had lighter mother queens than control colonies. [⋮] [http://www.motherjones.com/food/2017/ ...n-the-bee-death-mystery/#](http://www.motherjones.com/food/2017/...n-the-bee-death-mystery/#)