



# Alliance of River Communities

Arroyo Seco NC | Atwater Village NC | Boyle Heights NC  
Eagle Rock NC | Elysian Valley Riverside NC | Glassell Park NC  
Greater Cypress Park NC | Greater Echo Park Elysian NC  
Historic Highland Park NC | LA 32 NC | Lincoln Heights NC  
Los Feliz NC | Rampart Village NC | Silver Lake NC

October 25, 2013: Press Contact: Hector Huezo, [H.L.Huezo@gmail.com](mailto:H.L.Huezo@gmail.com)

RE: Council File Number 12-0785, Bee Keeping in R1 Zones

Dear Los Angeles City Council

At a regular meeting of the Neighborhood Council Alliance of River Communities, the member representatives of the alliance consented on submitting the following resolution regarding Council File Number 12-0785:

**WHEREAS**, a rapidly increasing number of residents are participating in growing food, raising livestock and beekeeping within the City of Los Angeles in the form of community gardens, urban farming enterprises, aquaponics facilities, and home and school gardens; and

**WHEREAS**, bees are absolutely necessary for the production of a third of the food produced in North America, including the production of almonds, California's biggest export; and

**WHEREAS**, in the past few years, "colony collapse disorder" (CCD) has led to a massive bee population decrease in which U.S. beekeepers lost an average of 45 percent of their colonies from 2012-2013, threatening the existence of one of the world's most vital pollinators and, by extension, the long-term security of our food supply; and

**WHEREAS**, The Los Angeles Municipal Code (LAMC) currently disallows "beekeeping" in Single Family residential (R 1) zones and the City of Los Angeles does not have the capacity to rescue feral bees, instead expending resources for the extermination of bees on public land; and

**WHEREAS**, there are approximately 9 to 11 bee colonies per square mile in the City of Los Angeles, and the practices of feral bee rescue and urban beekeeping offer the opportunity to control and manage these bee colonies without resorting to extermination and placing this burden on bodies such as the Department of Water and Power and Los Angeles County Vector Control; and

**WHEREAS**, residents of all communities across Los Angeles deserve access to nutritious, affordable and culturally relevant food and also to open, green space and urban agriculture and community gardens can provide both;

**WHEREAS**, the Atwater Village, Silver Lake, Boyle Heights, Historic Highland Park, Los Feliz Neighborhood Councils have all submitted support for Council File 12-0785

**WHEREAS**, the Council of the City of Los Angeles celebrated its support of urban agriculture and its commitment to ensuring a strong and sustainable local food system by declaring October 23, 2013 as National Food Day in Los Angeles; and;

**WHEREAS**, the Los Angeles City Council resolved to include in its 2013-2014 Federal Legislative Program SPONSORSHIP/SUPPORT for the "Saving America's Pollinators Act of 2013" (H.R. 2692);

**NOW, THEREFORE, BE IT RESOLVED** that the Alliance of River Communities supports Council File 12-0785, which provides Los Angeles residents an opportunity to support the modification to Los Angeles Municipal Code, resulting in a mechanism to allow urban beekeeping in Single Family R-1 Zones.

Sincerely,  
The Neighborhood Council Alliance of River Communities, ARC

RECEIVED  
CITY CLERK'S OFFICE  
2014 FEB - 6 PM 5:59  
CITY CLERK PLS  
BY M.V. DEPUTY





# Science & Space

Search TIME

Home NewsFeed U.S. Politics World Business Tech Health Science Entertainment Video TIME 100 Photos

Home Environment Going Green Space Animals Photos



FOOD

## Beepocalypse Redux: Honeybees Are Still Dying — and We Still Don't Know Why

More than five years after it was first reported, colony-collapse disorder is still killing honeybees around the world. If scientists can't pinpoint the cause, the economic and environmental damage could be immense

By Bryan Walsh @bryanwalsh | May 07 2013 | 221 Comments

Tweet 557 | +1 61 | Share 35 | Read Later

The honeybees are dying — and we don't really know why. That's the conclusion of a massive Department of Agriculture (USDA) report that came out late last week on colony-collapse disorder (CCD), the catchall term for the large-scale deaths of honeybee groups throughout the U.S. And given how important honeybees are to the food that we eat — bees help pollinate crops that are worth more than \$200 billion a year — the fact that they are dying in large numbers, and we can't say why, is very, very worrying.



Matt Cardy / Getty Images

Colony-collapse disorder is wiping out honeybee colonies

CCD was first reported in 2006, when commercial beekeepers began noticing that their adult worker

honeybees would suddenly flee the hive, ending up dead somewhere else and leading to the rapid loss of the colony. On normal years, commercial beekeepers might expect to lose 10% to 15% of their colony, but over the past five years, mortality rates for commercial operations in the U.S. have ranged from 28% to 33%. Since 2006 an estimated 10 million beehives worth about \$200 each have been lost, costing beekeepers some \$2 billion. There are now 2.5 million honeybee colonies in the U.S., down from 6 million 60 years ago. And if CCD continues, the consequences for the agricultural economy — and even for our ability to feed ourselves — could be dire. "Currently, the survivorship of honeybee colonies is too low for us to be confident in our ability to meet the pollination demands of U.S. agricultural crops," the USDA report said.

So what's causing CCD — and how can we stop it?

(MORE: What's the Buzz: Study Links Pesticide With Honeybee Collapse)

The problem is that there doesn't seem to be a single smoking gun behind CCD. The USDA report points at a range of possible causes, including:

- A parasitic mite called *Varroa destructor* that has often been found in decimated colonies
- Several viruses
- A bacterial disease called European foulbrood that is increasingly being detected in U.S. bee colonies
- The use of pesticides, including neonicotinoids, a neuroactive chemical

Since CCD isn't so much a single disease as it is a collection of symptoms, chances are that some or all of these factors, working in concert, might be behind the disappearance of the honeybees. The presence of the *Varroa* mite,

CF# 12-0785

RECEIVED CITY CLERK'S OFFICE 2014 FEB - 6 PM 2:58 BY CITY CLERK M.V. DEPUTY PLS

### RECOMMENDED FOR YOU

by Taboo

Five Worst Inventions

Kate Middleton Plays Volleyball... In Heels

Jodi Arias Asks For Death Penalty

Sir's Voice: The Woman Behind It

### FROM OUR PARTNERS

50 States' Biggest Snow Days — Weather



Finally, a Bachelor Contestant Exposes the Show's Weird Sex Issues



These Disturbing Fast Food Truths Will Make

for instance, can worsen the impact of existing viruses, while the stress of shipping bees back and forth across the country — increasingly common in commercial beekeeping — may be amplifying the stress on the insects and leaving them more vulnerable to CCD. (If you think a cross-country flight is rough on you, just imagine what it's like for a honeybee hive.) The fact that CCD is increasingly seen in other countries as well gives more weight to the notion that there may be multiple factors at work.

Still, environmentalists have focused most on the potential role of pesticides — especially the powerful neonicotinoids — and some lab studies have found that the chemicals can adversely affect bee health. It's not that the pesticides — which are aimed at other insects — are killing the bees outright, but rather that sublethal exposure in nectar and pollen may be interfering with the honeybees' internal radar, preventing them from gathering pollen and returning safely to the hive.

**(MORE: Wildlife: Where Have All the Bumblebees Gone?)**

The USDA report mostly withholds judgment on neonicotinoids, citing the need for more research, and the Environmental Protection Agency is conducting a very slow review of the evidence. Last week, though, the E.U., which is also grappling with CCD, decided it was done waiting, and announced a two-year ban on neonicotinoids. The European Commission enacted the ban on the recommendation of the European Food Safety Authority, which said in January that the pesticides should be restricted until scientists had cleared the chemicals of a role in CCD.

The chemical industry, unsurprisingly, disputes the finding. Bayer CropScience, a major pesticide manufacturer, said in a statement after the ban was announced:

As a science-based company, Bayer CropScience is disappointed that clear scientific evidence has taken a backseat in the decisionmaking process. This disproportionate decision is a missed opportunity to reach a solution that takes into consideration all of the existing product-stewardship measures and broad stakeholder concerns. The further reduction of effective crop-protection products will put at risk farmers' ability to tackle important pests that can severely restrict their ability to grow high-quality food.

As Brad Plumer pointed out over at the *Washington Post*, it's not that the E.U. necessarily has more evidence about the role that the chemicals might be playing in CCD. This is a classic case of policymaking by the precautionary principle. The pesticides are considered guilty until proven innocent, and so they're preventively banned, even before the scientific case is rock solid. That's not unusual for European environmental regulation, especially in regard to chemicals. In the U.S. it's the reverse — before the federal government is likely to take the step of banning a class of pesticides, and pissing off the multibillion-dollar chemical industry, you're likely to see a lot more science done.

So what we may get in Europe and the U.S. is a de facto field test of the real impact of neonicotinoids on CCD. In two years, if American bees are still dying and their European cousins are thriving, we might just have our answers. And if not, well, I hope you don't like cashews, beets, broccoli, cabbage, brussels sprouts, chestnuts, watermelons, cucumber, fennel, strawberries, macadamia, mangoes, apricots, almonds or any of the other dozens of food crops pollinated by our hardworking, six-legged, unpaid farmworkers.

**MORE: The Riddle of the Bee Deaths: Solved at Last?**



**Bryan Walsh @bryanrwalsh**  
Bryan Walsh is a senior editor at TIME.

**FROM THE WEB**

Sponsored Content by Taboola

- 7 Everyday Foods You Should Never Eat Again  
*Wall Street Cheat Sheet*
- 10 Items You're Too Old to Wear  
*Lifescript*
- 10 Celebrities Scammed by Madoff  
*Bankrate*
- These 16 Companies Will

**You Reconsider Your Lunch** — *Washington Post*



**POPULAR AMONG SUBSCRIBERS**

SUBSCRIBE

**Japan's Booming Sex Niche: Elder Porn**



**The Mindful Revolution**



**Can Anyone Stop Hillary?**



**Bitter Pill: Why Medical Bills Are Killing Us**



Get all access to digital and print **SUBSCRIBE**

**Most Popular**

**FROM SCIENCE & SPACE**

- 1 Bill Nye to Defend Evolution in Kentucky Debate
- 2 Window on Infinity: Winter Pictures from Icy Space
- 3 Hawking: Is He All He's Cracked Up To Be?
- 4 Window on Infinity: A New Year's Photo Album From Space
- 5 Breathtaking Panoramas and Mosaics From Opportunity's Decade on Mars

**FROM TIME.COM**

- 1 How Much Time Have You Wasted on Facebook?
- 2 What You Missed While Not Watching the Bill Nye and Ken Ham Creation Debate
- 3 10 Reasons to Stop Working So Hard
- 4 'The Biggest Loser' Goes Too Far
- 5 Powerful Photos from the 2014 World Photography Awards Shortlist

**MORE ON TIME**



RECEIVED  
CITY CLERK'S OFFICE  
2014 FEB - 6 PM 2:50

BY  
CITY CLERK  
M.V.  
DEPUTY  
NS

Back to Article Click to Print

# TIME

## Monday, Aug. 19, 2013 The Plight of the Honeybee By Bryan Walsh

CF #12-0785

You can thank the *Apis Mellifera*, better known as the Western honeybee, for 1 in every 3 mouthfuls of food you'll eat today. From the almond orchards of central California--where each spring billions of honeybees from across the U.S. arrive to pollinate a multibillion-dollar crop--to the blueberry bogs of Maine, the bees are the unsung, unpaid laborers of the American agricultural system, adding more than \$15 billion in value to farming each year. In June, a Whole Foods store in Rhode Island, as part of a campaign to highlight the importance of honeybees, temporarily removed from its produce section all the food that depended on pollinators. Of 453 items, 237 vanished, including apples, lemons and zucchini and other squashes. Honeybees "are the glue that holds our agricultural system together," wrote journalist Hannah Nordhaus in her 2011 book, *The Beekeeper's Lament*.

And now that glue is failing. Around 2006, commercial beekeepers began noticing something disturbing: their honeybees were disappearing. Beekeepers would open their hives and find them full of honeycomb, wax, even honey--but devoid of actual bees. As reports from worried beekeepers rolled in, scientists coined an appropriately apocalyptic term for the mystery malady: colony-collapse disorder (CCD). Suddenly beekeepers found themselves in the media spotlight, the public captivated by the horror-movie mystery of CCD. Seven years later, honeybees are still dying on a scale rarely seen before, and the reasons remain mysterious. One-third of U.S. honeybee colonies died or disappeared during the past winter, a 42% increase over the year before and well above the 10% to 15% losses beekeepers used to experience in normal winters.

Though beekeepers can replenish dead hives over time, the high rates of colony loss are putting intense pressure on the industry and on agriculture. There were just barely enough viable honeybees in the U.S. to service this spring's vital almond pollination in California, putting a product worth nearly \$4 billion at risk. Almonds are a big deal--they're the Golden State's most valuable agricultural export, worth more than twice as much as its iconic wine grapes. And almonds, totally dependent on honeybees, are a bellwether of the larger problem. For fruits and vegetables as diverse as cantaloupes, cranberries and cucumbers, pollination can be a farmer's only chance to increase maximum yield. Eliminate the honeybee and agriculture would be permanently diminished. "The take-home message is that we are very close to the edge," says Jeff Pettis, the research leader at the U.S. Department of Agriculture's Bee Research Laboratory. "It's a roll of the dice now."

That's why scientists like Pettis are working hard to figure out what's bugging the bees. Agricultural pesticides were an obvious suspect--specifically a popular new class of chemicals known as neonicotinoids, which seem to affect bees and other insects even at what should be safe doses. Other researchers focused on bee-killing pests like the accurately named *Varroa destructor*, a parasitic mite that has ravaged honeybee colonies since it was accidentally introduced into the U.S. in the 1980s. Others still have looked at bacterial and viral diseases. The lack of a clear culprit only deepened the mystery and the fear, heralding what some greens call a "second silent spring," a reference to Rachel Carson's breakthrough 1962 book, which is widely credited with helping launch the environmental movement. A quote that's often attributed to Albert Einstein became a slogan: "If the bee disappears from the surface of the globe, man would have no more than four years to live."

One problem: experts doubt that Einstein ever said those words, but the misattribution is characteristic of the confusion that surrounds the disappearance of the bees, the sense that we're inadvertently killing a species that we've tended and depended on for thousands of years. The loss of the honeybees would leave the planet poorer and hungrier, but what's really scary is the fear that bees may be a sign of what's to come, a symbol that something is deeply wrong with the world around us. "If we don't make some changes soon, we're going to see disaster," says Tom Theobald, a beekeeper in Colorado. "The bees are just the beginning."

### Sublethal Effects

If the honeybee is a victim of natural menaces like viruses and unnatural ones like pesticides, it's worth remembering that the bee itself is not a natural resident of the continent. It was imported to North America in the 17th century, and it thrived until recently because it found a perfect

niche in a food system that demands crops at ever cheaper prices and in ever greater quantities. That's a man-made, mercantile ecosystem that not only has been good for the bees and beekeepers but also has meant steady business and big revenue for supermarkets and grocery stores.

Jim Doan has been keeping bees since the age of 5, but the apiary genes in his family go back even further. Doan's father paid his way to college with the proceeds of his part-time beekeeping, and in 1973 he left the bond business to tend bees full time. Bees are even in the Doan family's English coat of arms. Although Jim went to college with the aim of becoming an agriculture teacher, the pull of the beekeeping business was too great.

For a long time, that business was very good. The family built up its operation in the town of Hamlin, in western New York, making money from honey and from pollination contracts with farmers. At the peak of his business, Doan estimates he was responsible for pollinating 1 out of 10 apples grown in New York, running nearly 6,000 hives, one of the biggest such operations in the state. He didn't mind the inevitable stings--"you have to be willing to be punished"--and he could endure the early hours. "We made a lot of honey, and we made a lot of money," he says.

All that ended in 2006, the year CCD hit the mainstream, and Doan's hives weren't spared. That winter, when he popped the covers to check on his bees--tipped off by a fellow beekeeper who experienced one of the first documented cases of CCD--Doan found nothing. "There were hundreds of hives in the backyard and no bees in them," he says. In the years since, he has experienced repeated losses, his bees growing sick and dying. To replace lost hives, Doan needs to buy new queens and split his remaining colonies, which reduces honey production and puts more pressure on his few remaining healthy bees. Eventually it all became unsustainable. In 2013, after decades in the business, Doan gave up. He sold the 112 acres (45 hectares) he owns--land he had been saving to sell after his retirement--and plans to sell his beekeeping equipment as well, provided he can find someone to buy it. Doan is still keeping some bees in the meantime, maintaining a revenue stream while considering his options. Those options include a job at Walmart.

Doan and I walk through his backyard, which is piled high with bee boxes that would resemble filing cabinets, if filing cabinets hummed and vibrated. Doan lends me a protective jacket and a bee veil that covers my face. He walks slowly among the boxes--partly because he's a big guy and partly because bees don't appreciate fast moves--and he spreads smoke in advance, which masks the bees' alarm pheromones and keeps them calm. He opens each box and removes a few frames--the narrowly spaced scaffolds on which the bees build their honeycombs--checking to see how a new population he imported from Florida is doing. Some frames are choked with crawling bees, flowing honey and healthy brood cells, each of which contains an infant bee. But other frames seem abandoned, even the wax in the honeycomb crumbling. Doan lays these boxes--known as dead-outs--on their side.

He used to love checking on his bees. "Now it's gotten to the point where I look at the bees every few weeks, and it scares me," he says. "Will it be a good day, will they be alive, or will I just find a whole lot of junk? It depresses the hell out of me."

Doan's not alone in walking away from such unhappy work. The number of commercial beekeepers has dropped by some three-quarters over the past 15 years, and while all of them may agree that the struggle is just not worth it anymore, they differ on which of the possible causes is most to blame. Doan has settled on the neonicotinoid pesticides--and there's a strong case to be made against them.

The chemicals are used on more than 140 different crops as well as in home gardens, meaning endless chances of exposure for any insect that alights on the treated plants. Doan shows me studies of pollen samples taken from his hives that indicate the presence of dozens of chemicals, including the neonicotinoids. He has testified before Congress about the danger the chemicals pose and is involved in a lawsuit with other beekeepers and with green groups that calls on the Environmental Protection Agency (EPA) to suspend a pair of pesticides in the neonicotinoid class. "The impacts [from the pesticides] are not marginal, and they're not academic," says Peter Jenkins, a lawyer for the Center for Food Safety and a lead counsel in the suit. "They pose real threats to the viability of pollinators."

American farmers have been dousing their fields with pesticides for decades, meaning that honeybees--which can fly as far as 5 miles (8 km) in search of forage--have been exposed to toxins since well before the dawn of CCD. But neonicotinoids, which were introduced in the mid-1990s and became widespread in the years that followed, are different. The chemicals are known as systematics, which means that seeds are soaked in them before they're planted. Traces of the chemicals are eventually passed on to every part of the mature plant--including the pollen and nectar a bee might come into contact with--and can remain for much longer than other pesticides do. There's really no way to prevent bees from being exposed to some level of neonicotinoids if the pesticides have been used nearby. "We have growing evidence that neonicotinoids can have dangerous effects, especially in conjunction with other pathogens," says Peter Neumann, head of the Institute of Bee Health at the University of Bern in Switzerland.

Ironically, neonicotinoids are actually safer for farmworkers because they can be applied more precisely than older classes of pesticides, which

disperse into the air. Bees, however, seem uniquely sensitive to the chemicals. Studies have shown that neonicotinoids attack their nervous system, interfering with their flying and navigation abilities without killing them immediately. "The scientific literature is exploding now with work on sublethal impacts on bees," says James Frazier, an entomologist at Penn State University. The delayed but cumulative effects of repeated exposure might explain why colonies keep dying off year after year despite beekeepers' best efforts. It's as if the bees were being poisoned very slowly.

It's undeniably attractive to blame the honeybee crisis on neonicotinoids. The widespread adoption of these pesticides roughly corresponds to the spike in colony loss, and neonicotinoids are, after all, meant to kill insects. Chemicals are ubiquitous--a recent study found that honeybee pollen was contaminated, on average, with nine different pesticides and fungicides. Best of all, if the problem is neonicotinoids, the solution is simple: ban them. That's what the European Commission decided to do this year, putting a two-year restriction on the use of some neonicotinoids. But while the EPA is planning to review neonicotinoids, a European-style ban is unlikely--in part because the evidence is still unclear. Beekeepers in Australia have been largely spared from CCD even though neonicotinoids are used there, while France has continued to suffer bee losses despite restricting the use of the pesticides since 1999. Pesticide makers argue that actual levels of neonicotinoid exposure in the field are too low to be the main culprit in colony loss. "We've dealt with insecticides for a long time," says Randy Oliver, a beekeeper who has done independent research on CCD. "I'm not thoroughly convinced this is a major issue."

### Hostile Terrain

Even if pesticides are a big part of the bee-death mystery, there are other suspects. Beekeepers have always had to protect their charges from dangers such as the American foulbrood--a bacterial disease that kills developing bees--and the small hive beetle, a pest that can infiltrate and contaminate colonies. Bloodiest of all is the multidecade war against the Varroa destructor, a microscopic mite that burrows into the brood cells that host baby bees. The mites are equipped with a sharp, two-pronged tongue that can pierce a bee's exoskeleton and suck its hemolymph--the fluid that serves as blood in bees. And since the Varroa can also spread a number of other diseases--they're the bee equivalent of a dirty hypodermic needle--an uncontrolled mite infestation can quickly lead to a dying hive.

The Varroa first surfaced in the U.S. in 1987--likely from infected bees imported from South America--and it has killed billions of bees since. Countermeasures used by beekeepers, including chemical miticides, have proved only partly effective. "When the Varroa mite made its way in, it changed what we had to do," says Jerry Hayes, who heads Monsanto's commercial bee work. "It's not easy to try to kill a little bug on a big bug."

Other researchers have pointed a finger at fungal infections like the parasite *Nosema ceranae*, possibly in league with a pathogen like the invertebrate iridescent virus. But again, the evidence isn't conclusive: some CCD-afflicted hives show evidence of fungi or mites or viruses, and others don't. Some beekeepers are skeptical that there's an underlying problem at all, preferring to blame CCD on what they call PPB--piss-poor beekeeping, a failure of beekeepers to stay on top of colony health. But while not every major beekeeper has suffered catastrophic loss, colony failures have been widespread for long enough that it seems perverse to blame the human victims. "I've been keeping bees for decades," says Doan. "It's not like I suddenly forgot how to do it in 2006."

There's also the simple fact that beekeepers live in a country that is becoming inhospitable to honeybees. To survive, bees need forage, which means flowers and wild spaces. Our industrialized agricultural system has conspired against that, transforming the countryside into vast stretches of crop monocultures--factory fields of corn or soybeans that are little more than a desert for honeybees starved of pollen and nectar. Under the Conservation Reserve Program (CRP), the government rents land from farmers and sets it aside, taking it out of production to conserve soil and preserve wildlife. But as prices of commodity crops like corn and soybeans have skyrocketed, farmers have found that they can make much more money planting on even marginal land than they can from the CRP rentals. This year, just 25.3 million acres (10.2 million hectares) will be held in the CRP, down by one-third from the peak in 2007 and the smallest area in reserve since 1988.

### Lonely Spring

For all the enemies that are massing against honeybees, a bee-pocalypse isn't quite upon us yet. Even with the high rates of annual loss, the number of managed honeybee colonies in the U.S. has stayed stable over the past 15 years, at about 2.5 million. That's still significantly down from the 5.8 million colonies that were kept in 1946, but that shift had more to do with competition from cheap imported honey and the general rural depopulation of the U.S. over the past half-century. (The number of farms in the U.S. fell from a peak of 6.8 million in 1935 to just 2.2 million today, even as food production has ballooned.) Honeybees have a remarkable ability to regenerate, and year after year the beekeepers who remain have been able to regrow their stocks after a bad loss. But the burden on beekeepers is becoming unbearable. Since 2006 an estimated 10 million beehives have been lost, at a cost of some \$2 billion. "We can replace the bees, but we can't replace beekeepers with 40 years of experience," says Tim Tucker, the vice president of the American Beekeeping Federation.

As valuable as honeybees are, the food system wouldn't collapse without them. The backbone of the world's diet--grains like corn, wheat and rice--is self-pollinating. But our dinner plates would be far less colorful, not to mention far less nutritious, without blueberries, cherries, watermelons, lettuce and the scores of other plants that would be challenging to raise commercially without honeybee pollination. There could be replacements. In southwest China, where wild bees have all but died out thanks to massive pesticide use, farmers laboriously hand-pollinate pear and apple trees with brushes. Scientists at Harvard are experimenting with tiny robobees that might one day be able to pollinate autonomously. But right now, neither solution is technically or economically feasible. The government could do its part by placing tighter regulations on the use of all pesticides, especially during planting season. There needs to be more support for the CRP too to break up the crop monocultures that are suffocating honeybees. One way we can all help is by planting bee-friendly flowers in backyard gardens and keeping them free of pesticides. The country, says Dennis vanEngelsdorp, a research scientist at the University of Maryland who has studied CCD since it first emerged, is suffering from a "nature deficit disorder"--and the bees are paying the price.

But the reality is that barring a major change in the way the U.S. grows food, the pressure on honeybees won't subside. There are more than 1,200 pesticides currently registered for use in the U.S.; nobody pretends that number will be coming down by a lot. Instead, the honeybee and its various pests are more likely to be changed to fit into the existing agricultural system. Monsanto is working on an RNA-interference technology that can kill the Varroa mite by disrupting the way its genes are expressed. The result would be a species-specific self-destruct mechanism--a much better alternative than the toxic and often ineffective miticides beekeepers have been forced to use. Meanwhile, researchers at Washington State University are developing what will probably be the world's smallest sperm bank--a bee-genome repository that will be used to crossbreed a more resilient honeybee from the 28 recognized subspecies of the insect around the world.

Already, commercial beekeepers have adjusted to the threats facing their charges by spending more to provide supplemental feed to their colonies. Supplemental feed raises costs, and some scientists worry that replacing honey with sugar or corn syrup can leave bees less capable of fighting off infections. But beekeepers living adrift in a nutritional wasteland have little choice. The beekeeping business may well begin to resemble the industrial farming industry it works with: fewer beekeepers running larger operations that produce enough revenue to pay for the equipment and technologies needed to stay ahead of an increasingly hostile environment. "Bees may end up managed like cattle, pigs and chicken, where we put them in confinement and bring the food to them," says Oliver, the beekeeper and independent researcher. "You could do feedlot beekeeping."

That's something no one in the beekeeping world wants to see. But it may be the only way to keep honeybees going. And as long as there are almonds, apples, apricots and scores of other fruits and vegetables that need pollinating--and farmers willing to pay for the service--beekeepers will find a way.

So if the honeybee survives, it likely won't resemble what we've known for centuries. But it could be worse. For all the recent attention on the commercial honeybee, wild bees are in far worse shape. In June, after a landscaping company sprayed insecticide on trees, 50,000 wild bumblebees in Oregon were killed--the largest such mass poisoning on record. Unlike the honeybee, the bumblebee has no human caretakers. Globally, up to 100,000 animal species die off each year--nearly every one of them without fanfare or notice. This is what happens when one species--that would be us--becomes so widespread and so dominant that it crowds out almost everything else. It won't be a second silent spring that dawns; we'll still have the buzz of the feedlot honeybee in our ears. But humans and our handful of preferred species may find that all of our seasons have become lonelier ones.

 [Click to Print](#)

**Find this article at:**

<http://www.time.com/time/magazine/article/0,9171,2149141,00.html>

Copyright © 2013 Time Inc. All rights reserved. Reproduction in whole or in part without permission is prohibited.

[Privacy Policy](#) | [Add TIME Headlines to your Site](#) | [Contact Us](#) | [Customer Service](#)