

# A3 LOCAL NEWS

Sunday, August 26, 2018 » MORE AT [FACEBOOK.COM/DAILYBREEZE](https://www.facebook.com/dailybreeze) AND [TWITTER.COM/DAILYBREEZENews](https://twitter.com/dailybreezenews)

[dailybreeze.com](https://www.dailybreeze.com)

## ENVIRONMENT

# The challenging life of bees

By **Shannon M. Hoffman**  
*Correspondent*

There were more than just bees buzzing in Palos Verdes on Saturday as humans came out to learn about the insects that have been in trouble lately.

Palos Verdes Peninsula Land Conservancy at White Point staged its Fourth Saturday education workshop. Award-winning writer Aimee Lissantheia, author of The “Amazing Adventures of Melissa B,” spoke about the importance of bees one week after National Honey Bee Day.

“It’s a great honor to be a voice for the bees,” she said. “Helping them is helping ourselves. ... The bees don’t need us, but we need the bees.”

As if they didn’t have it bad enough already, struggling against pests and parasites, pesticides and a lack of forage, bees now have a bigger threat to deal with, experts say: heat.

The number of bees in a colony declines by roughly 41 percent per 1 degree Celsius of urban warming, according to a study conducted by researchers at North Carolina State University. As temperatures rise, the size of the bees decreases, as does the population of their colonies, regardless of how many flowers are in the area.

Their findings, published in *Urban Ecosystems*, an academic and international journal that studies how living things react to their surroundings, discovered that tem-

BEES » PAGE 18



To celebrate National Honey Bee Day, the Palos Verdes Peninsula Land Conservancy hosted a talk Saturday with award-winning author Aimee Lissantheia at the White Point Nature Preserve. Her book is “The Amazing Adventures of Melissa Bee”

PHOTO BY  
ROBERT CASILLAS

# Bees

FROM PAGE 3

perature is the most accurate indicator of bee abundance and how their colony is balanced.

"It's a big puzzle," said Tina Sebestyen, vice president of the Colorado Beekeepers Association and founder of Four Corners Beekeepers Association. "You take one piece of it away and it's really hard for the bees to make it up."

Much like humans — think perspiration and swamp coolers — bees use water to help cool themselves and their hive, Sebestyen said. When it's too hot, bees use more energy and more bees to collect water for their hive, which means less energy focused on collecting food. But the decrease in food collection means more than just hungry bees.

When bees are plump and well-fed, nurse bees are more inclined to make royal jelly to raise a new queen bee. But when food is put aside, so is the making of royal jelly, which is the only sustenance a queen bee can eat. This ultimately results in a decline in new queen bees, and as queen bees age, they lay fewer eggs.

"Insects in our world are an indicator species," Sebestyen said. "People have a feeling in their gut that there is a problem with our world because there are few bugs."

Bees communicate. When less food is brought into the colony, they notice and they panic. The bees are under the impression they don't have enough foragers. So the nurse bees, who are supposed to be taking care of the larvae, turn into precocious foragers, meaning their role in the hive shifted too early. The precocious foragers go out and start looking for food, abandoning larvae and the production of royal jelly.

This is bad for two reasons. Larvae don't receive the care they need and the life expectancy of a precoc-

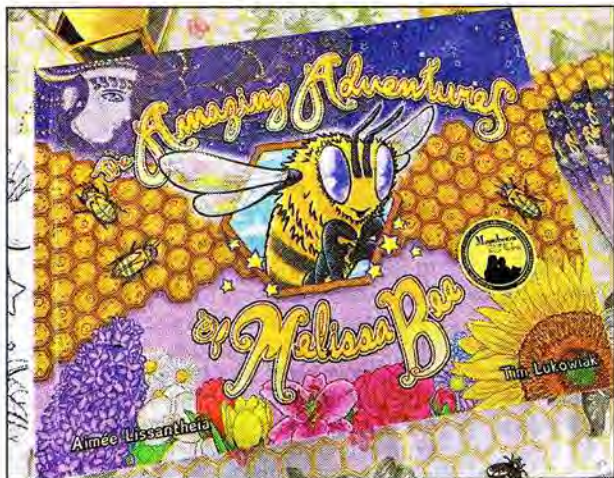


PHOTO BY ROBERT CASILLAS

Author Aimee Lissantheia wrote "The Amazing Adventures of Melissa Bee."

ocious forager is frequently two days, Sebestyen said, as opposed to the two weeks a normal forager would live.

Many of the precocious foragers leave for food and never return, with this part of the vicious cycle alone causing colonies to dwindle. A huge territory, with a huge abundance of food, is now covered by fewer bees, and the ones that are being fed aren't getting enough nutrients.

Unfortunately for bees, they have almost no immune system, but certain organisms can boost it — if they can get it. "Alleles" in plants, which organisms use to keep predators away, can trigger a bee's immune response much like the way a flu shot works in humans. But as the population of a colony declines, so does the variety of food that makes it back to the hive, Sebestyen said.

A varied diet is pertinent for healthy hive life. Bees need amino acids, protein, essential fatty acids and perfectly balanced sugars, and there is no one food source that can provide all of those things at once. If the bees don't have enough protein, nurse bees will not make royal jelly and their queen suffers.

The melting point of bee's wax is 140 degrees Fahrenheit. It sounds like a high, hard-to-reach temperature, but when most hives are built in cramped spaces, there's not enough ventila-

tion to keep it cool. That adds to the number of bees dedicated to retrieving water, and not food.

"There's a really narrow range of temperature for larvae to survive," Sebestyen said. The bee's priorities shift from foraging and feeding their queen along with their larvae, to cooling their hive. If the bees can't regulate the temperature, the hive collapses and the bees and larvae drown in honey.

A lawn is a desert to a bee, Sebestyen said. She recommends getting rid of the grass and planting wildflower seeds throughout the lawn. This will work as a reliable food source year-round, she said, because there's always something in bloom.

"Wildflowers have deep roots that break up the soil and pull nutrients up to the surface," she said. "It feeds the soil and requires less water."

Sebestyen also recommends providing bees with warm water, and she suggests placing a rock in the container for the bees to latch onto in case they fall in.

"The No. 1 most important food source is dandelions," Sebestyen said. "I love seeing dandelions in people's yards; it means they care. It's really exciting. If you can tolerate a bug or a dandelion, it could make a huge difference in this world."