

Researcher releases first results from nationwide bee count

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SF State Associate Professor of Biology Gretchen LeBuhn.

(Phys.org) -- A San Francisco State University biologist has released the initial results of her nationwide citizen science project to count bee populations and has found low numbers of bees in urban areas across America, adding weight to the theory that habitat loss is one of the primary reasons for sharp declines in the population of bees and other important pollinators.

Now the researcher plans to add to her data -- which is now the largest single body of information on bee activity in [North America](#) -- by further comparing how [bee populations](#) are faring in different types of habitats. On August 11 this year, SF State Biologist Gretchen LeBuhn and her team of researchers are urging people across the country to

count [bees](#) in their yard and neighborhood gardens as part of a “Great Bee Count.”

LeBuhn launched the campaign, called The Great Sunflower Project, in 2008 to answer important questions about the decline of pollinators and the ecosystems that rely upon them. She enlisted the help of nearly 100,000 volunteers to count bees they found in their garden or yard annually. Volunteers simply count the number of bees they see on a sunflower or other plant during two 15 minute observations per month, then report the data on LeBuhn’s website.

Analyzing observations from 12,000 gardens, LeBuhn has found that [urban areas](#) have much fewer visits from bees than other habitats. Volunteers in urban gardens reported finding an average of 23.3 bees per hour, compared to 30.4 per hour in rural areas and 31.6 in forests and wildlands. Volunteers in desert areas reported an average of 31.9 bees per hour.

This year, LeBuhn has put out a renewed call for data from areas known for their healthy bee populations in order to determine the “tipping point” at which urban features can fragment bee habitats enough to cause population decline.

“We’re really interested in doing deeper comparisons of rural and urban and suburban areas, and what that means for pollinators,” she said.

She also plans to look closely at desert areas, which have higher bee diversity than wooded areas. “We know that desert systems are centers of species diversity for bees,” she said.

The results mapped over the U.S. show that the average number of bee sightings can range from zero to more than 30 bees per hour, depending in part on how large the overall garden is. In general, the largest gardens

have the most bee visits -- between 30 and 40 per hour on average. But even smaller gardens are visited by an average of 25 bees, and patio pots get an average of 13 bee sightings per hour.

Using data from these areas, LeBuhn plans to look deeper into [habitat fragmentation](#), a phenomenon that occurs when in areas where bees' habitats are disrupted by buildings, highways or other urban features. In these areas, bees often cannot find the resources they need to survive or are limited in their mobility.

But healthy bee populations are thriving in some urban community gardens, which saw an average of 41.9 bees per hour. LeBuhn believes community gardens will provide key information on habitat fragmentation, and has a graduate student who plans to look at this trend in-depth for San Francisco community gardens.

“We were surprised that [community gardens](#) had such high visitation rates,” LeBuhn said, “but that’s good news because they’re important sources of food production, and we want to make sure they’re getting enough [pollinators](#).”

This year, LeBuhn hopes to gather more data with the help of “Garden Leaders” -- individuals who act as the liaison for groups of volunteers in different areas. The Garden Leaders will distribute seeds to participants and should make data-gathering more efficient.

While participants can make their observations and send in data any time, Aug. 11 has been named the day of the “The Great Bee Count,” in which participants all over the country will observe on the same day. Volunteers can view the [interactive map](#) showing data from the previous four years of the project and zoom in to see what is happening in their neighborhood or find areas where more data is needed.

“The [results map](#) that’s now on the website is pretty powerful,” LeBuhn said. “For those who already participate, this can help them look at the area around them and see if there’s anyone else they can encourage to join.”

More information: To join The Great Sunflower Project, visit the website at www.greatsunflower.org

Provided by San Francisco State University

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