

Science Briefs: Honey bees face health risks in urban areas

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Urban environments increase the abundance of disease-causing microorganisms in honey bees.
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Researchers from N.C. State have found that urban environments increase the abundance of disease-causing microorganisms – pathogens – in honey bees and reduce honey bee survival. The finding raises significant questions as urban areas continue to grow at the expense of rural environments and as urban beekeeping becomes more popular.

Working with volunteers, researchers identified 15 feral colonies living in trees or buildings without human management and 24 colonies managed by beekeepers in urban, suburban and rural areas within an hour's drive of Raleigh. The researchers collected worker bees from all of the colonies and analyzed them to assess the bees' immune responses and their overall "pathogen pressure."

The research team found that colonies closer to urban areas and those managed by beekeepers had higher pathogen pressure.

"Overall, we found that the probability of worker (bee) survival in laboratory experiments declined three-fold in bees collected from urban environments, as compared to those collected in rural environments," said Steve Frank, an associate professor of entomology at N.C. State and co-author of a paper on the work. However, researchers also found the bees' immune response was not diminished by urbanization.

The paper was published last week in the journal PLOS ONE. ncsu.edu

Watch for mid-month meteor shower

Meteors result from particles of dust causing the atmosphere to glow as the particles enter Earth's upper atmosphere, and every year Earth passes through the gas and dust particles left behind by the Tempel-Tuttle comet. Those meteors – the Leonids – will reappear in our skies this month.

The Pisgah Astronomical Research Institute, southwest of Asheville in Rosman, reports that the Leonids are predicted to reach a peak of about 20 meteors per hour at midnight Nov. 17-18.

"The best time for observing this year's Leonids will be in the pre-dawn hours of the 18th ... from a clear, dark location with a good horizon. The Leonids have been known to flare up into spectacular showers but no such 'meteor storm' has been predicted for 2015. ... Look to the northeast to find the meteors appearing to radiate out of the constellation of Leo the lion. Binoculars or telescopes are not needed to observe meteors." pari.edu

'Big data' hub coming to Chapel Hill

UNC-Chapel Hill's Renaissance Computing Institute and the Georgia Institute of Technology will co-direct a new, national effort to develop a big data innovation hub serving 16 southern states and the District of Columbia. The hub will have dual locations in Atlanta and Chapel Hill.

The South Big Data Regional Innovation Hub, which will use \$1.25 million over three years in seed funding to establish a governance plan for long-term sustainability, is one of the National Science Foundation's four such regional hubs announced Nov. 2. The initiative aims to build innovative public-private partnerships that address regional challenges such as health care, habitat planning and coastal hazards through big data analysis. unc.edu

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