



Findings at the Farm

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A team of researchers will be measuring the impact of natural vegetation at the Solar Farm 2.0 grounds. Below the 31,122 bi-facial solar panels lie 54 acres perfect for pollinator-friendly plantings.

But how exactly does one calculate the plants' effectiveness? How about: count the bugs.

Ben Campbell, an energy engineer at the University of Illinois Chicago, is part of a research effort that will do exactly that, and more. Their research will also address other matters at Solar Farm 2.0, including how the pollinator plants affect the efficiency of the solar panels' power production, and how quickly and strongly the pollinator plantings grow.

Additionally, F&S
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Services are a support team member for the research project which will study the economic and ecological benefits of planting native and other flowering plants under and around solar arrays. In order to count the bugs, a few times a year researchers will catch flying insects over the course of a day. The insects they collect will be taken to the Bee Research Facility on the Urbana campus where they will be identified and archived, under the guidance of Dr. Adam Dolezal.



Pictured above, l to r: Morgan White, associate director of Sustainability; Dr. Mohamed Attalla, executive director of F&S; Rob Roman, director of Utilities & Energy Services

This might seem standard practice for a new test site with new plantings. What may surprise the reader is another research question: where and how many birds and bats will come around for feeding time?

“The research is driven by the solar industry’s questions about the collocation of solar power production and pollinator habitat,” said Campbell. “Our research seeks to understand what scale of habitat is necessary to have measurable impacts on pollinator, bird, and bat populations at utility-scale solar facilities, in addition to benefits in terms of increased power production or lifecycle costs of managing vegetation. We are excited to have the opportunity to test these questions in our own backyard at Solar Farm 2.0.”

Using acoustic and ultrasonic recorders, the team will record bird and bat abundance and diversity, respectively, over time, measuring wildlife elements until at least 2023.

The research project, led by Iris Caldwell at the Energy Resources Center at University of Illinois Chicago, is funded by the U.S. Department of Energy Solar Energy Technology Office. Her research team consists of the University of Illinois Urbana-Champaign, UIC, the Argonne National Laboratory, and the National Renewable Energy Laboratory. Six solar facility test sites have been selected for field research across Illinois, Indiana, Michigan, and Wisconsin. This includes the 12 MW Solar Farm 2.0

facility at UIUC. In partnership with F&S and Sol Systems (the site operator) the research team will evaluate the effects of the pollinator plantings on photovoltaic and ecological performance and compare operational costs with facilities that use conventional ground cover (usually turf grass). In addition, Solar Farm 1.0 may be used as a control site for comparison for performance and pollinator observation.



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