

Where have all the flowers gone?

December 3 2010



Katharina Ullmann

Katharina Ullmann is on a mission. "Where have all the flowers gone?" she asks.

Ullmann, a pollination ecologist seeking a master's degree in entomology at the University of California, Davis, wants to enhance floral resources for honey bees and native bees in agricultural landscapes.

"Pollinators play an important role in crop production and in maintaining wildflower populations," said Ullmann, who studies with major professor and native pollinator specialist Neal Williams. "However, habitat destruction and agricultural intensification has modified the floral resources available in agricultural landscapes. Ensuring that pollen

and nectar resources are available throughout the year is important for both honey bees and wild native bees."

As part of her research, she and her colleagues from the Williams' lab are seasonally monitoring floral visitors and floral resources at three experimental sites in Yolo County and developing wildflower mixes that attract pollinators. She wants to know what native flowers are most visited by honey bees, pests and natural enemies; when they bloom, and what resources the flowers are providing.

The results will be submitted to peer-reviewed journals and made accessible to California [beekeepers](#) and land managers.

"An estimated 30 percent of our global crop production is at least partially dependent on animal pollinators," said Ullmann. "The European honey bee (also called the Western honey bee) remains the most relied-upon crop pollinator. However, managed honey bees have declined by more than 50 percent since the 1950s.

"Supplemental plantings with native pollen and nectar-rich plants in agricultural areas may benefit honey bees by relieving floral resource scarcity and thus reducing bee nutritional stress at critical times of the season," she said. "However, floral resources may also attract pests."

Ullmann said that intensive agriculture "transforms complex, heterogeneous landscapes with nature mixtures of natural habitat and diverse cropping systems into simple, homogenous landscapes consisting of large monocultures and little natural habitat."

Floral resources used by bees do not persist throughout the flight season of most bees, particularly the [honey bee](#), she said. "As a result, there are times in the year where few flowering plant species provide pollen and nectar. During these times, bees experience nutritional stress which

beekeepers combat by supplementing colonies with artificial diets."

Ullmann and her colleagues are monitoring 18 native annual and perennial forb species. Forbs, herbaceous flowering plants, include clover, lupine and California poppies.

The pollination ecologist recently received three scholarships to fund her research: the George H. Vansell Scholarship for \$4,435, the John S. Harbison Scholarship for \$1000; and the Teledyne Entomology Fellowship for \$1000.

A 2002 graduate of the University of St. Andrews, Scotland, Ullmann received her bachelor of science degree in environmental biology, with honors, and a minor in French, with honors. In 2001, she was involved in a six-month study program on the ecology and conservation of Madagascar.

Provided by University of California - Davis

Citation: Where have all the flowers gone? (2010, December 3) retrieved 9 April 2024 from <https://phys.org/news/2010-12-where-have-all-the-flowers.html>

<p>This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.</p>
--