

INTEGRATED CROP POLLINATION (ICP)

Project ICP partners are working to ensure the long term sustainability of specialty crop pollination nationally through Integrated Crop Pollination (ICP). ICP incorporates habitat enhancement for wild bees, farm management practices to support bees, and use of diverse managed bee species into farm systems. Funding from the USDA Specialty Crops Research Initiative is supporting a team of scientists and outreach specialists with diverse expertise who are working with growers to develop 1) best practices for pollinator habitat enhancement and 2) farm management practices to bolster wild and managed bee populations within farms. Our research is also examining the use of alternative managed bees, such as bumble bees and mason bees, to increase the reliability of crop pollination.

With Project ICP's strong economic and social components, we are assessing how best to fit these ICP strategies into different scales of crop production, as well as how best to share project results with specialty crop growers nationwide to achieve meaningful adoption.



Honey bee colonies in blueberries, Rufus Isaacs. Habitat for wild bees, Don Kiersted (NH USDA-NRCS). Blue orchard bees and almonds, Derek Artz.



Sweat bees in squash flower, Nancy Lee Adamson.

Questions about this project?

Contact Leah Morin via phone or email:
517-884-0396 • morinlea@cns.msu.edu

Please visit our website for more information about Project ICP, plus links to project publications and our calendar of upcoming events.

www.ICPbees.org

The Project ICP team is comprised of the following organizations:

AgPollen, LLC.	University of California, Berkeley
Franklin and Marshall College	University of California, Davis
Loyola University Chicago	University of Florida
Michigan State University	University of Vermont
Oregon State University	USDA-ARS Pollinating Insects Research Unit
Pennsylvania State University	Wenatchee Valley College
Rutgers University	The Xerces Society for Invertebrate Conservation
Simon Fraser University	
St. Mary-of-the-Woods College	

Our project is also guided by an advisory committee of stakeholders and by our grower cooperators.

Flower icon by Adam Zubin from *The Noun Project*. Handshake icon designed by Jake Nelsen from *The Noun Project*. Project ICP logo and brochure design by Kaitlyn Rich, *The Xerces Society*.

Project Integrated Crop Pollination



Bees are essential specialty crop pollinators. Managed bees, such as honey bees, along with bumble bees and other wild bee species are under threat and their populations are declining. Growers need strategies that can reliably deliver pollination to ensure a profitable return from pollinator-dependent specialty crops. To meet these grower needs and ensure reliable pollination, Project ICP is conducting research and extension nationwide on farm management practices that increase wild bees and on techniques for managing alternative bees for pollination.



Bumble bee on blueberry blossoms, Nancy Lee Adamson.



GROWER NEEDS

PROJECT OBJECTIVES AND TOOLS

EXPECTED OUTCOMES



BEES

Which bees can provide stable crop pollination? How can honey bees, other managed bees, and wild bees be integrated into sustainable pollination systems?

Identify economically valuable pollinators and the factors affecting their abundance.

- Guide to Integrated Crop Pollination
- Pollination Monitoring Field Guide



LAND MANAGEMENT

Which farm practices and habitat enhancements best support crop pollinators?

Identify farm and habitat management practices that enhance populations of wild and managed bees and increase crop pollination.

- Region-specific guides & mapping tools for establishing optimal bee habitat on farms
- Tools for minimizing pesticide impacts on pollinators



MANAGED POLLINATORS

How can alternative managed bees contribute more to specialty crop pollination?

Determine performance of alternative managed bees as specialty crop pollinators.

- Guide to Alternative Managed Pollinators for Fruit and Vegetable Growers



ECONOMICS

How do wild pollinators, habitat enhancements, and alternative managed pollinators influence crop yields?

Measure economic contribution of ICP to specialty crop production.

- Decision-support tools to guide grower's investments in habitat enhancements and management strategies



SHARED RESULTS

What are the best ways to incorporate Integrated Crop Pollination strategies on farms?

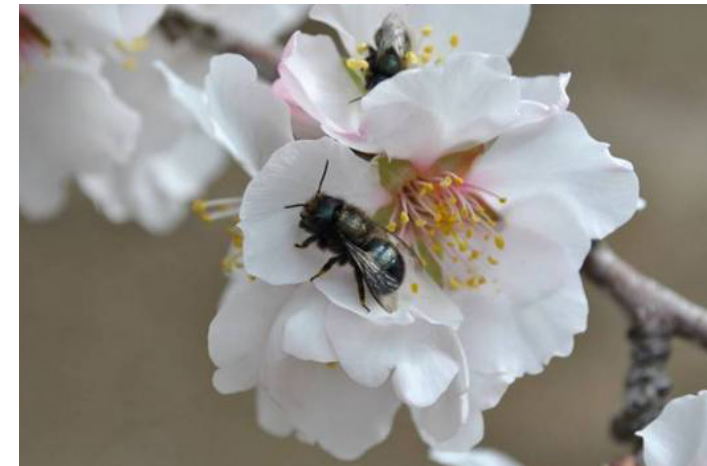
Demonstrate ICP strategies to core audiences and measure adoption of practices. Identify networks among stakeholders to support sharing project results.

- ICP workshops to train growers, extension agents, crop scouts and consultants
- On-farm demonstration sites
- Technical support for growers

- Higher, stable crop yields
- Improved pollination sustainability
- Greater pollinator diversity and reliability



Blueberries and raspberries, Mace Vaughan. Apples and watermelon, Scott Bauer. Almonds, Kaitlyn Rich. Cherries, Nikki Rothwell. Pumpkins, Danielle Scott.



Blue orchard bee on almond flower, Derek Artz.