

Blooms for Mason Bees

A project made possible by the USDA-SARE



What we're doing

- The question: We know pollinators need blooms to do their work, but **which flowers are best?**
- Goal: design a seed mix to support springtime pollinators — particularly mason bees (*Osmia lignaria*)



Why we're doing it

- The blue orchard bee (*Osmia lignaria*) is the **most agriculturally important mason bee species in North America**
- Currently, no springtime seed mix has been developed for Midwestern pollinators. Our project changes that.



How we're doing it

- We deployed mason bees and shelters across 30 Ohio locations to collect and analyze the pollen collected
 - 10 orchards
 - 10 urban developments
 - 10 natural habitats
- 1st release ☐ collect nests ☐
2nd release ☐ collect nests ☐
ship to Penn State for pollen analysis



How we're doing it

- DNA metabarcoding provides information of floral sources of pollen and foraging plant preferences of *Osmia lignaria*.
- DNA metabarcoding of pollen is a useful tool for studying bee foraging ecology.
- The springtime seed mix will be used for farmers to create floral strips (hedgerows) of flowers.



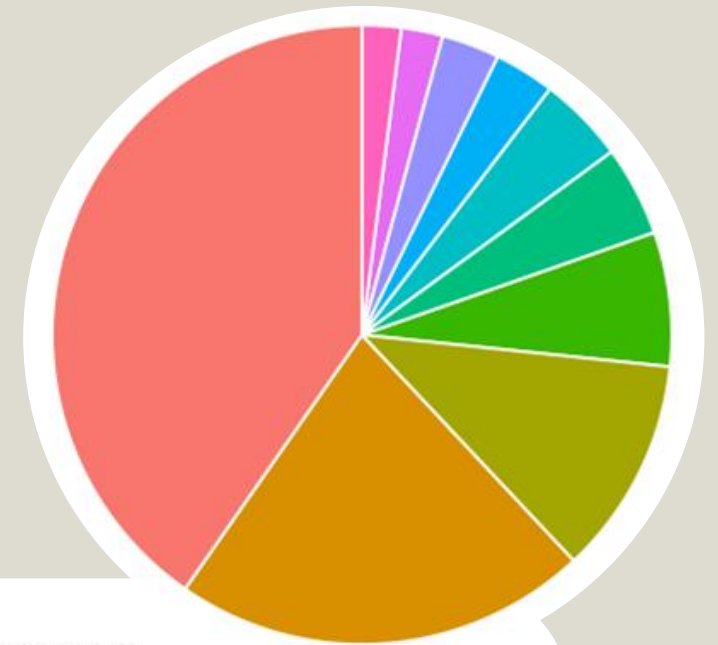
Dr. Michele Mansfield, The Grozinger Lab



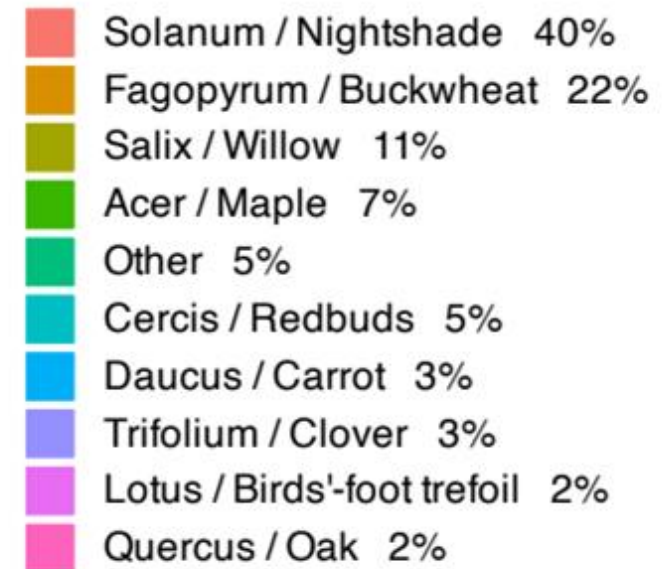
Results



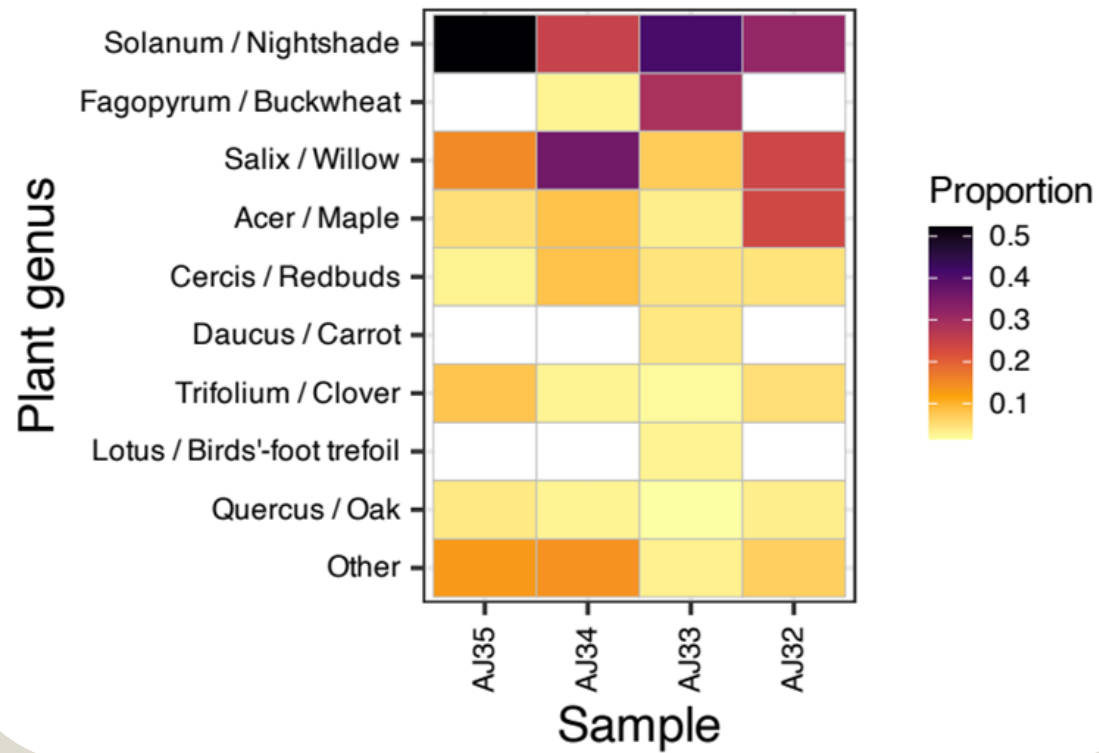
39°08'44.3"N 84°30'38.0"W



Plant genus



Results



Nightshade



Birds'-foot trefoil



Redbud



Buckwheat



Oak



Clover



Willow



Carrot



Maple

Our Goal + Next Steps

- Farming bees: propagating bees in high tunnels as livestock.
- Working with experts to create early springtime seed mix to support mason bees and other pollinators.
- Seed mix will be available to the public after plant trials.



Success in California

Species	Common Name	Bloom Season
<i>Calandrinia ciliata</i>	Redmaids	Feb - May
<i>Collinsia heterophylla</i>	Chinese Houses	Feb - Apr
<i>Eschscholzia californica</i>	California Poppy	Apr - July
<i>Nemophila maculata</i>	Five Spot	Feb - Apr
<i>Nemophila menziesii</i>	Baby Blue Eyes	Mar - Jun
<i>Phacelia capanularia</i>	Desertbells	Feb - Apr
<i>Phacelia ciliata</i>	Great Valley Phacelia	Feb - May



Redmaids



Chinese Houses



California Poppy



Five Spot



Baby Blue Eyes



Desertbells



Great Valley
Phacelia



Education

1. Blooms for Mason Bees video (~9 minutes)
2. Pollen DNA Results
3. Project Instructions
4. Upcoming Pollinator Report Webinar with Penn State



Thank you to our collaborators, who without this research would not be possible.

