

Great Lakes Pollinator Task Force

Collaborative conservation to overcome conservation challenges

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Outline

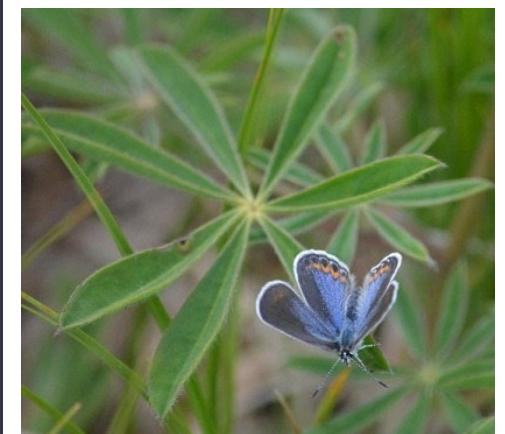
- Why Pollinators?
- Pollinator Task Force (PTF) Overview
- Challenges and how we are facing them
- Next steps
- Questions



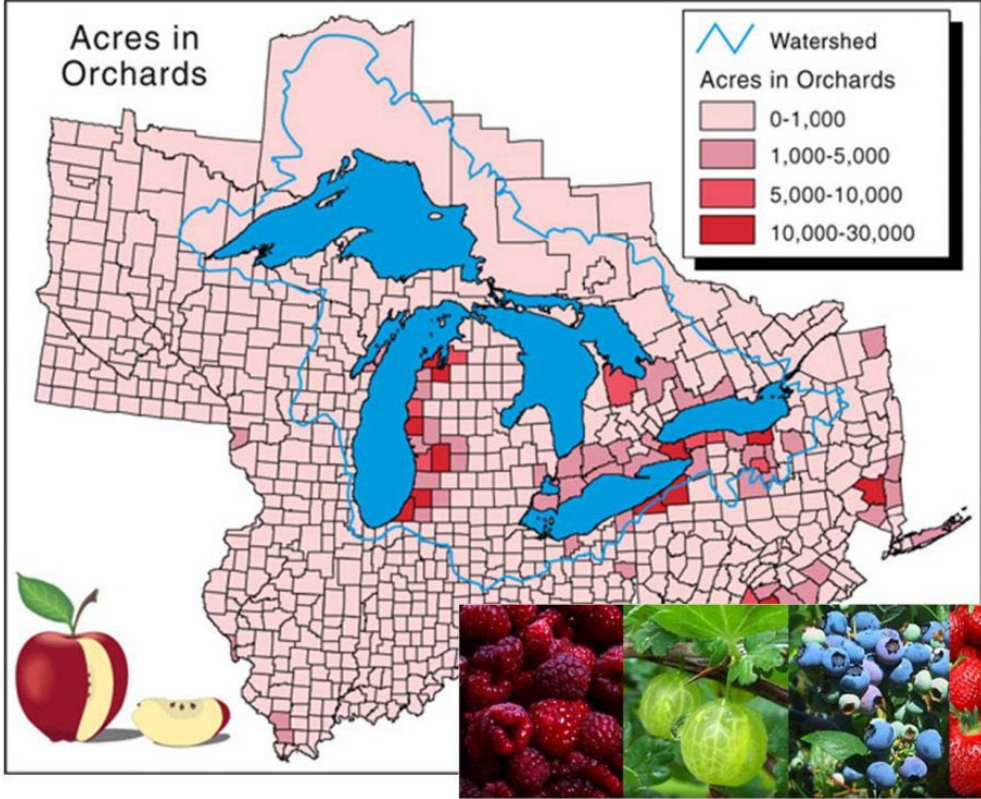
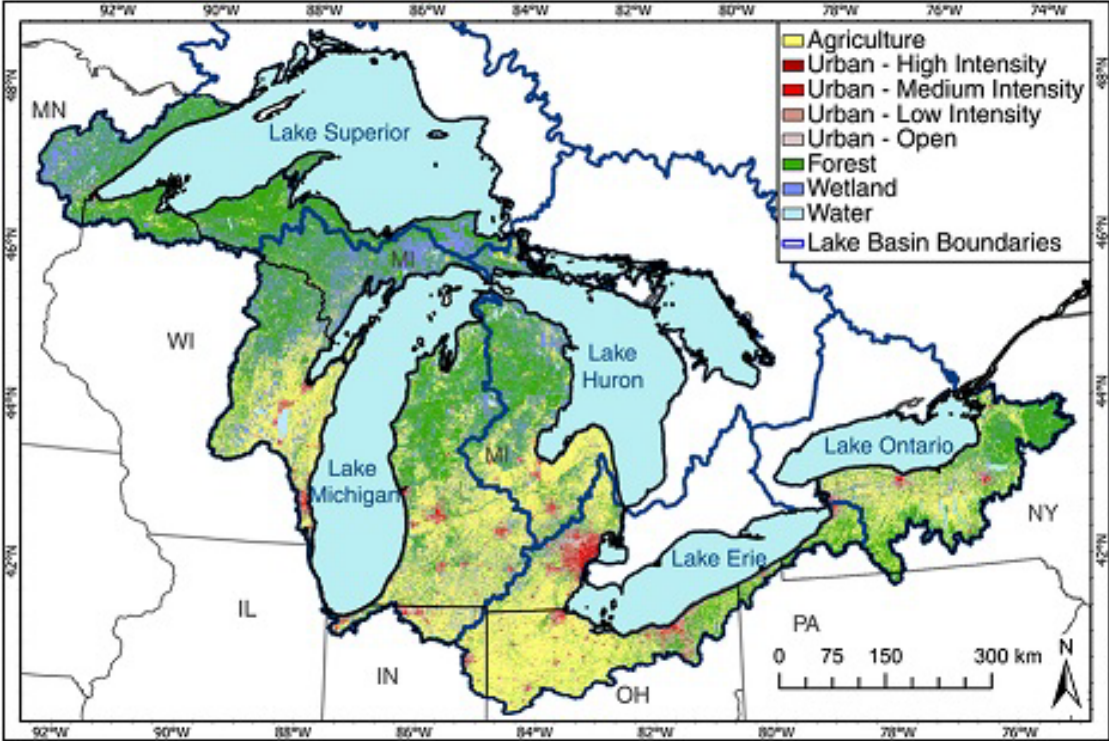
Why is Pollinator Conservation Important in the Great Lakes Basin?



- Unique habitats
- Ecological diversity & function
85-90% flowering plant species require pollination
- Parallel declines in pollinators & insect-pollinated plants
- Significant population declines
- Economic contribution
- Data gaps



Lay of the Land





Great Lakes Restoration Initiative (GLRI)

Accelerating efforts to protect and restore the largest system of fresh surface water in the world

GLRI Action Plan III Focus Areas:

1. Toxic Substances & Areas of Concern
2. Invasive Species
3. Nonpoint Source Pollution Impacts on Nearshore Health
- 4. Habitats and Species**
5. Foundations for Future Restoration Actions



<https://www.glri.us/>



GLRI Focus Area 4 Habitat & Species Objectives

- Protect and restore communities of native aquatic and terrestrial species important to the Great Lakes
- Increase resiliency of species through comprehensive approaches that complement on-the-ground habitat restoration and protection



Great Lakes Pollinator Task Force

- Inter-agency, collaborative effort
- Coordinated, landscape scale approach
- Desired Outcomes: ensure viable communities, reverse population declines, prevent listing, increase awareness of the importance of native pollinators
- Initial focus on **native bees (habitat, species, communities)**



Why native bees?

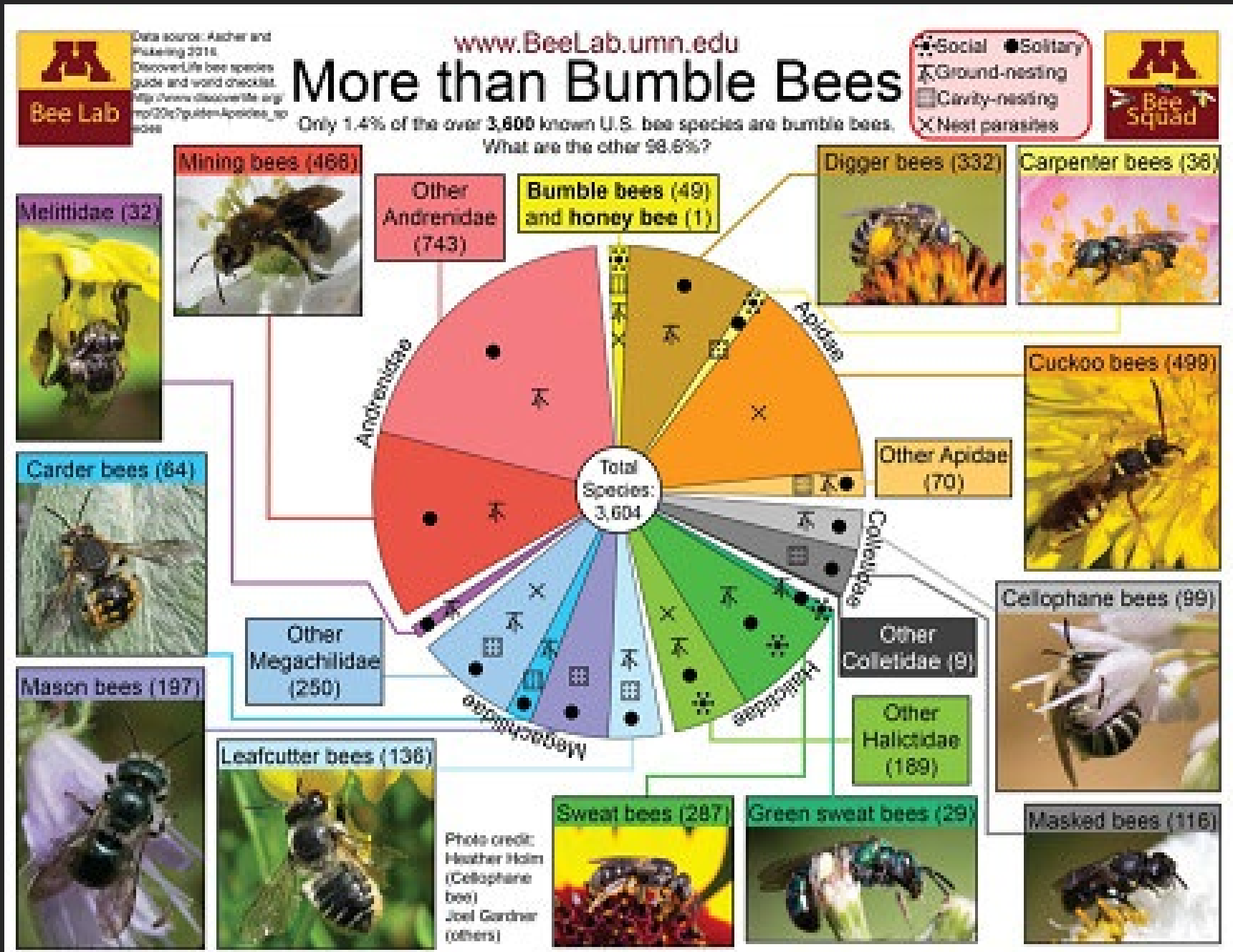
- Most effective native pollinator across diverse habitats in Great Lakes Basin
- One of the most imperiled groups of pollinators
- Overlapping benefits for other species



3600 native species in U.S.
465 (MI), 500 (IL/WI)

Enormous diversity

We don't know what we don't know!



A photograph of a large field of wildflowers, primarily purple and yellow, stretching towards a line of trees in the background under a grey, overcast sky. The text is overlaid on the center of the image.

Great Lakes Pollinator Task Force Mission:

Catalyze native bee conservation by coordinating and funding actions that efficiently maximize native bee abundance, distribution, diversity and resilience within the Great Lakes basin

Accelerating efforts to protect and restore native bees and their habitats within the Great Lakes Basin

Great Lakes Pollinator Conservation Strategy



Goals:

- Determine distribution/status
- Prioritize actions & areas
- Understand threats & stressors
- Implement habitat enhancement, restoration & protection
- Increase communication & outreach
- Practice science based adaptive management



GLRI PTF Accomplishments

- Structured Decision-Making workshop- project selection tools & white paper
- Adaptable 5-year GLRI Pollinator Action Plan
- Pilot focus area map
- Funded diverse, collaborative research
- Spatial conservation-planning with Zonation
- Communications Plan
- \$150K (2018) to \$2,073,000 (2023)



AND....



Habitat Restoration
Improving Habitat Diversity &
Connectivity

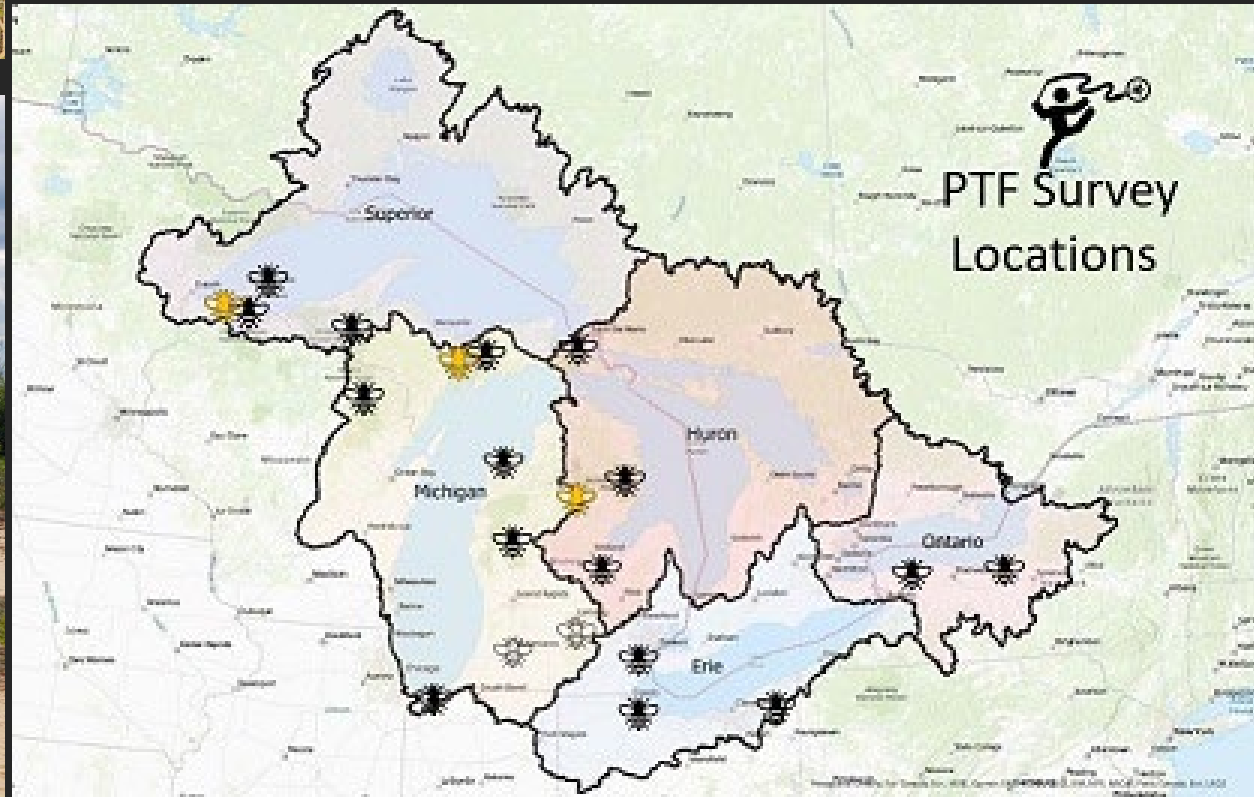
Over 3400 acres since 2019!





Native Bee Surveys

Establish a more comprehensive understanding of the species richness of native bee species on federal lands in the Great Lakes Basin via interagency collaborative surveys



State records, rare bees,
native, non-native/invasive



A close-up photograph of a green bee on a purple flower. The bee is positioned in the lower-left quadrant of the image, facing right. It has a bright green thorax and abdomen, with darker green and black markings on its head and legs. The bee is perched on a large, vibrant purple petal of a flower. The background is filled with other purple flowers and green foliage, all slightly out of focus, creating a soft, natural setting. The overall lighting is bright, highlighting the textures of the bee and the flower.

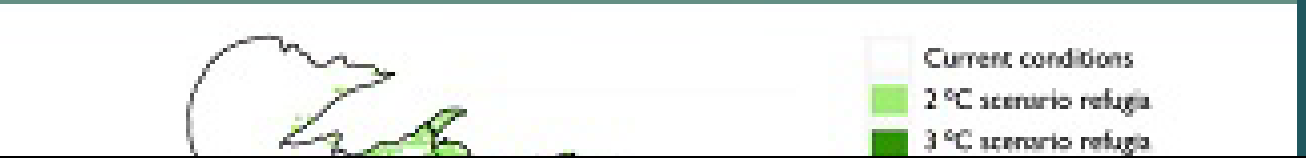
Management Implications

- Survey data will inform management decisions that provide habitat for native bees or reduce invasive species proliferation
 - Targeted management actions (knapweed)
- Inventory and ability to monitor species long-term (baseline)
- Zonation & pesticide models will inform when and where to restore and manage lands

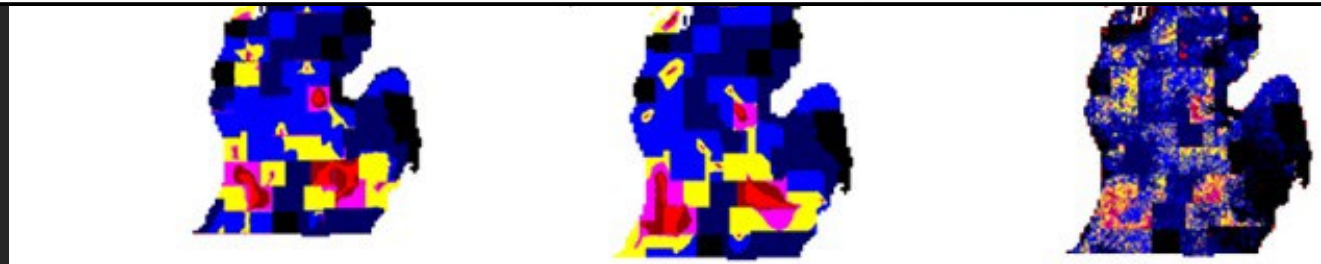
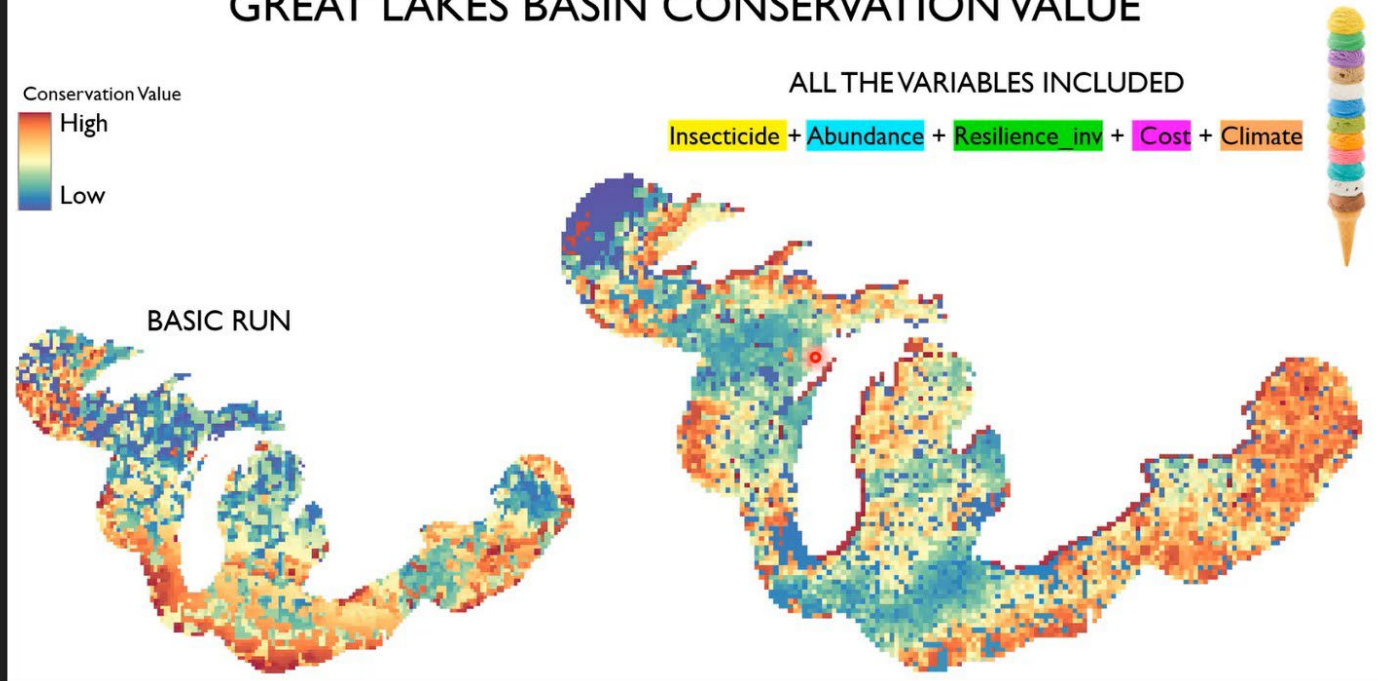
Zonation Project

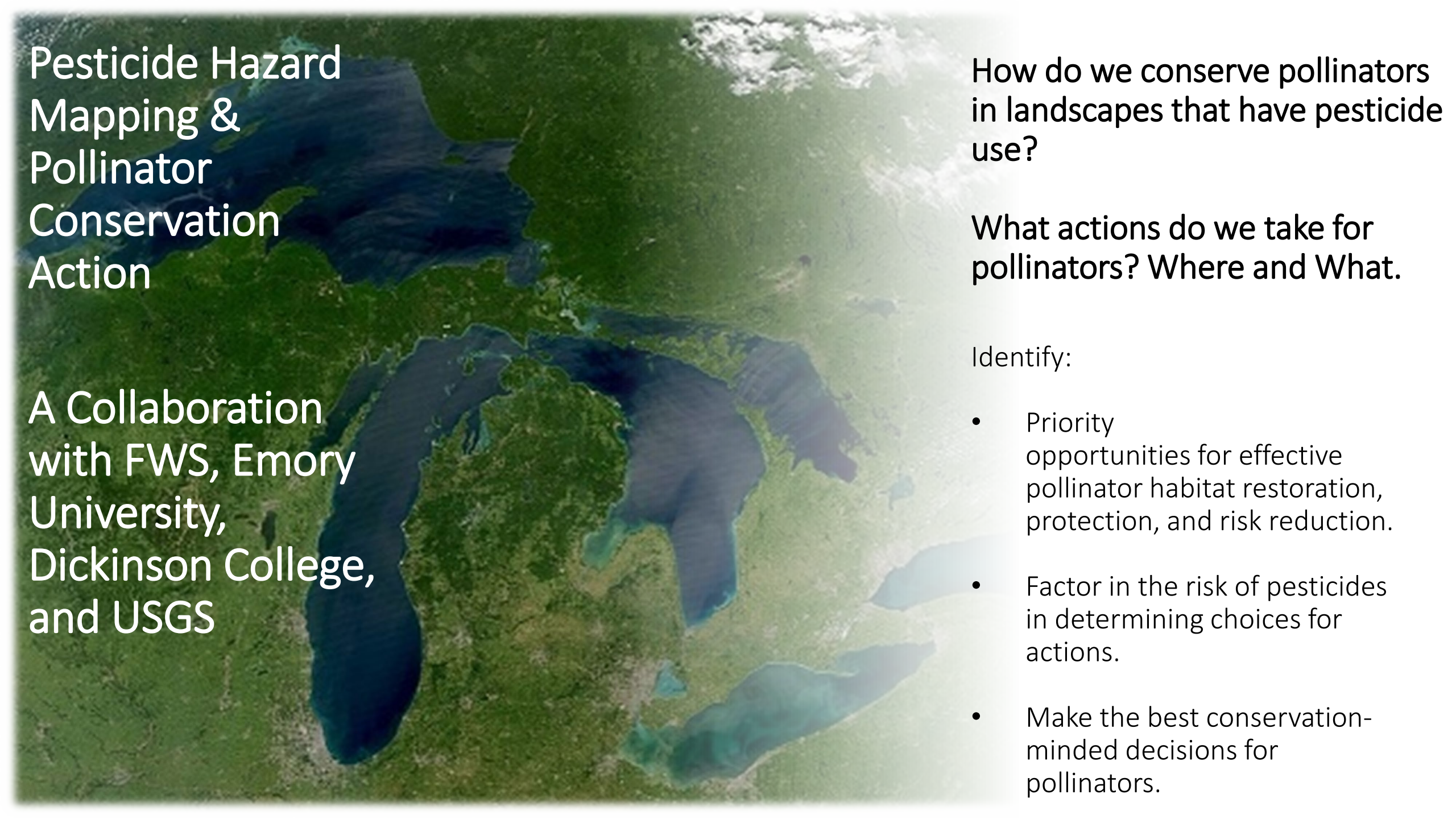
- Evaluate different conservation scenarios to provide **spatial prioritization** for conservation action
- Evaluate the impact of each model input on the final land conservation value
- **Conservation value** in a pixel represents the contribution for conserving the total bee community

GREAT LAKES CLIMATE CHANGE REFUGIA



GREAT LAKES BASIN CONSERVATION VALUE





Pesticide Hazard Mapping & Pollinator Conservation Action

A Collaboration
with FWS, Emory
University,
Dickinson College,
and USGS

How do we conserve pollinators
in landscapes that have pesticide
use?

What actions do we take for
pollinators? **Where and What.**

Identify:

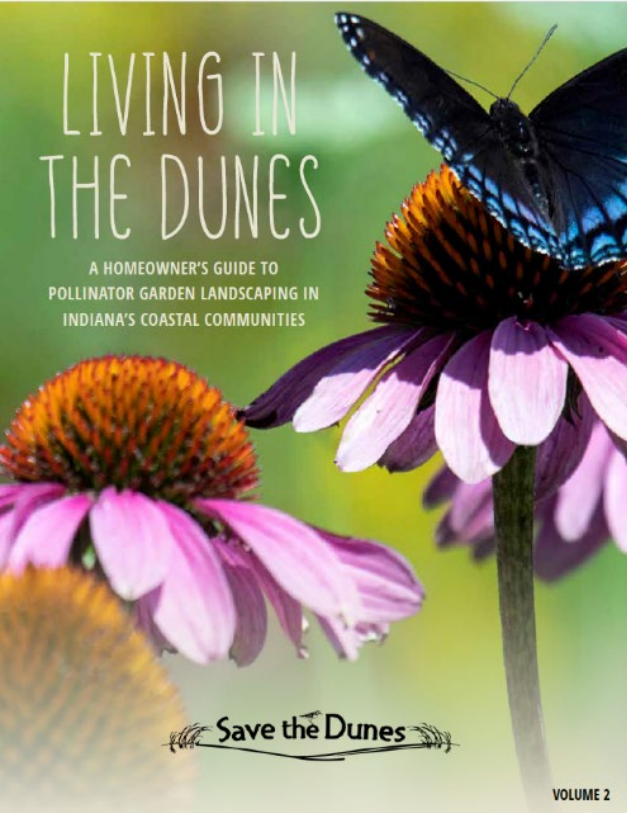
- Priority opportunities for effective pollinator habitat restoration, protection, and risk reduction.
- Factor in the risk of pesticides in determining choices for actions.
- Make the best conservation-minded decisions for pollinators.



Other Research & Collaboration

- *Megachilidae* & *Bombus* conservation status assessments
- Impacts of Rx fire and pathogen prevalence on *Bombus* populations
- eDNA projects/pollen & plant collection
- Connectivity analyses
- BMPs for forest openings
- Development of SpORtI: The species originality and rarity index
- *Bombus* nesting, habitat use, telemetry
- Data sharing initiative (RPBB, MLI & more)
- National Bee Monitoring RCN





Outreach and Communications



Accelerating efforts to protect and restore native bees and their habitats within the Great Lakes Basin



Supported by the Environmental Protection Agency (EPA), U.S. Fish & Wildlife Service leading a collaborative effort with U.S. Forest Service (USFS), National Park Service (NPS), U.S. Geological Survey (USGS), and Natural Resources Conservation Service (NRCS) to restore native insect pollinators throughout the Great Lakes Basin.

Quarterly Highlights! (July to September)



Wild Lupine seed collection led by Brendan Woodall in Portage, Wisconsin (Credit: Brendan Woodall, FWS).

Examples of species that may benefit under this measure during Action Plan IV include, but are not limited to:

- | | |
|--------------------------------------|--------------------------------|
| Lake trout | Lakeside daisy |
| Native prey fish (cisco and bloater) | Eastern massasauga rattlesnake |
| Michigan monkey flower | Copperbelly water snake |
| Dwarf lake iris | Mitchell's satyr butterfly |
| Great Lakes piping plover | Native bees |
| Pitchers thistle | Poweshiek skipperling |
| Marsh breeding birds | Eastern prairie fringed orchid |
| Lake sturgeon | Karner blue butterfly |
| Brook trout | |
| Native fluvial mussels | |





Lessons for the Future: Integrating climate science into pollinator conservation

- Knowledge is Power!
- Developing new tools and understanding
- Use the tools we have to build resilience into the system to help pollinators
 - Increase local refugia, quantity, quality, and connectivity of habitats
 - Collaborate, communicate and keep learning!

Thank you!

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Michigan Natural
Features Inventory
Discover. Define. Deliver.



EMORY
UNIVERSITY



Great Lakes
RESTORATION

