




# BUMBLE BEE BRIGADE



2023

Wisconsin Department of Natural Resources

A man wearing a tan long-sleeved shirt, dark blue pants, and a light-colored bucket hat is standing in a field of green plants and yellow flowers. He is holding a camera up to his eye, taking a photograph of a purple flower. In the background, there is a wooden signpost with some text and images. Another person, wearing a blue and white striped shirt, is visible in the foreground, looking towards the same area. The scene is outdoors with trees and a clear sky in the background.

# **Bumble Bee Brigade (B3): A statewide, photography-based participatory science project**

# Bumble Bee Brigade Mission

To improve our understanding of species distribution and status and engage the public in conservation of Wisconsin bumble bees.





# WI Bumble Bees Need Our Help



rufocinctus



ternarius



frigidus



affinis



griseocollis



impatiens



bimactulatus



fervidus



borealis



perplexus



vagans



sandersoni



pensylvanicus



auricomus



terricola



bohemicus



citrinus



variabilis



insularis



flavidus



**SUCCESS:  
HIGH  
VOLUME,  
HIGH  
QUALITY  
DATA**

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# By the Numbers

<b>B3 Contributions</b>	<b>2021</b>	<b>2020</b>	<b>2019</b>	<b>2018</b>
Volunteers	204	148	157	102
Species Observed	19	16	17	16
Observations	4082	4113	2341	1165
Surveys	1718	1925	1293	645
Sites	640	568	568	272
Counties with Surveys	67	63	66	57

# Species of Greatest Conservation Need— American Bumble Bee

**Pre B3:** 3  
observations  
across 3 counties

**Since B3:** 57  
verified records  
across 20 counties



# Species of Greatest Conservation Need— American Bumble Bee



*B. pensylvanicus*  
2013-2018



*B. pensylvanicus*  
2019-2022



# Species of Greatest Information Need: Fernald cuckoo

**Pre B3:** 4  
observations  
across 1 county

**Since B3:** 44  
verified records  
across 14 counties



Photo credit: Peter Pearsall, USFWS

# Species of Greatest Information Need: Fernald cuckoo



*B. flavidus*  
2013-2018



*B. flavidus*  
2019-2022



# Rusty patched bumble bee sightings



*B. affinis* 2018



*B. affinis* 2022



# Hundreds of Contributions to Federal Rusty Patched Bumble Bee High Potential Zones



Nationwide  
**CCAA**  for  
**MONARCH  
BUTTERFLY**

Nationwide  
**AGREEMENT**  for  
**AT-RISK  
BUMBLE BEES**

# Collaborative Conservation Agreements (ESA Section 10)

# Why Bees? Why Now?

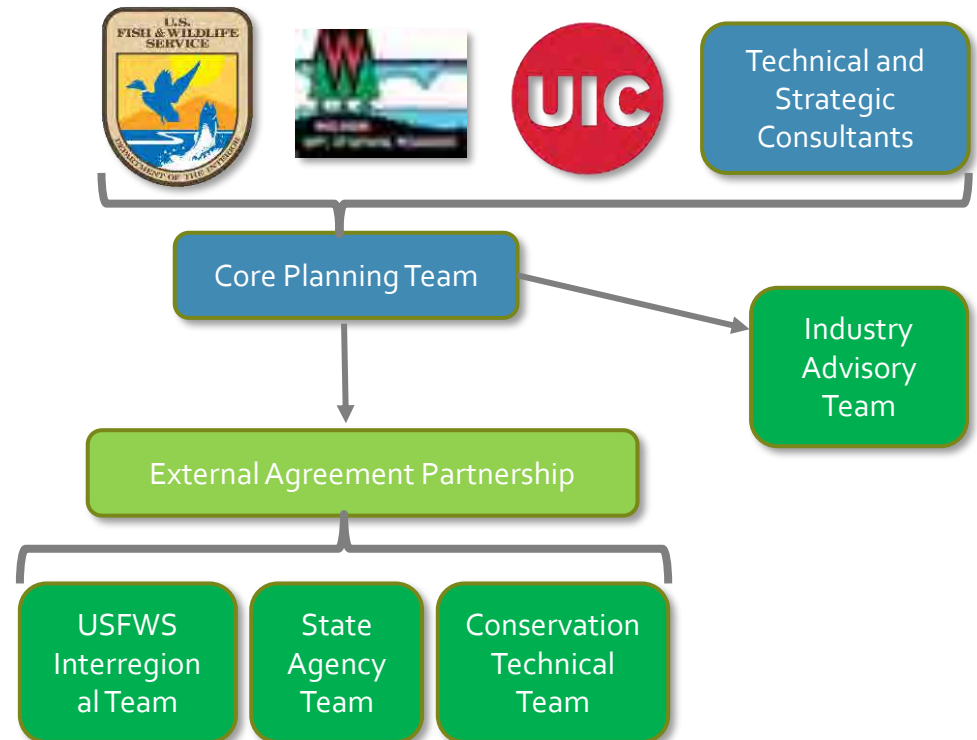
- Native pollinators are in trouble – more federal listing petitions coming
- New species listings can be costly to state agencies, industry, and the public
- Solar farm habitat opportunity
- USFWS recently awarded Section 6 funding to Wisconsin DNR to support agreement development



*Photos: Northern long eared bat (Top), Rusty patched bumble bee (Bottom)  
Sources: USFWS (Top), USGS Bee Inventory and Monitoring Lab (Bottom)*

# Agreement Development and Partnership

Team	Role in Agreement Preparation
<b>Core Planning Team</b>	Oversees all aspects of planning and Agreement development, including preparation of the draft Agreement.
<b>Conservation Technical Team</b>	Ensures best available science is considered in Agreement development.
<b>Industry Advisory Team</b>	Calibration of Agreement requirements to ensure practicality and desirability that encourages enrollment.
<b>State Agency Team</b>	Encourages alignment with federal and state conservation efforts.
<b>USFWS Interregional Team</b>	Encourages cooperation across multiple USFWS regions for consistent implementation.





# Preparing for federal listing

- Track species status (Heritage Programs and SWAPs)
- Species in severe range wide decline (likelihood of federal listing)
- Fill critical data gaps
  - Increase bench strength
  - Launch participatory science project to supplement in-house inventory
- Proactive action to preclude the need to list
- Is a Section 10 permit/agreement necessary or feasible??





**The End**