



BUMBLE BEE BRIGADE

2023 Year-In-Review

2023 was a banner year for participatory science thanks to YOU! We were amazed when your enthusiasm and hard work resulted in more observations and surveys than any previous year. In 2023, B3 volunteers logged a whopping +6,000 observations and counted over 26,000 individual bees. This is almost double the observations and more than double the individual bees counted last year. Total reported time volunteered was +2,800 hours. A huge congratulations and thank you to everyone! We are deeply grateful for your time, help, and passion. This data is key to managing and protecting pollinators across Wisconsin. Thank you all!

-Elizabeth, Jay, Judy, and Terrell (The B3 Team)

B3 Contributions	Number*
Volunteers	278
Species Observed	17
Observations	6,048
Surveys	2,436 (348 small area & 2,088 incidental)
Sites	964
Counties with Surveys	68



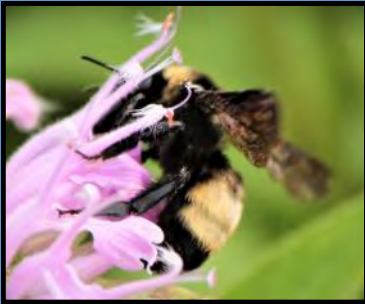
A Yellowbanded (*B. terricola*) queen hanging from willow. Photo: Ryan Brady

*Includes historical observations submitted in 2023



2023 Survey Highlights— By the Numbers

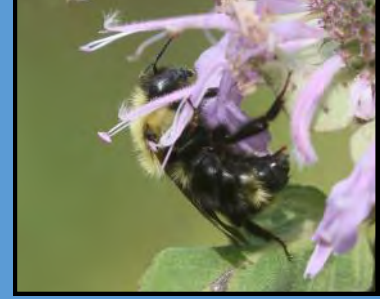
B3 volunteers added an extremely impressive 75 new county records for 17 species of bumble bees across 34 counties across the state this year. HUGE CONGRATULATIONS to everyone on the incredible surveying effort and skills! These included many State Species of Greatest Conservation Need (SGCN) and State Species of Greatest Information Need (SGIN). In addition, a new county of Rusty patched bumble bees was found by B3 volunteer Ryan Brady in Bayfield county. This is over 160 miles north from the bulk of Rusty patched bumble bee sightings in Wisconsin. Check out the [County Record Rockstars on page 13](#) to find out who discovered what!



American bumble bee (*B. pennsylvanicus*). New county records for this SGCN were made in Brown, Columbia, La Crosse, Marathon, and Winnebago counties. Photo by Ann Pedder Reilly.



Confusing bumble bee (*B. perplexus*). New county records for this SGCN were made in Brown, Dane, Dunn, Lincoln, Monroe, Outagamie, Vernon, and Washburn counties. Photo by Renae Essenmacher.



Fernald cuckoo (*B. flavidus*). New county records for this SGIN were made in Jackson, Juneau, Price, Rusk, Taylor, and Vilas counties. Photo by Dan Jackson.



Indiscriminate cuckoo bumble bee (*B. insularis*). New county records for this SGCN were made in Bayfield, Calumet, Jackson, Juneau, Pierce, Polk, Price, Shawano, Trempealeau, and Vernon counties. Photo by Melanie Weberg.



Sanderson's bumble bee (*B. sandersoni*). New county records for this SGCN were made in Douglas, Florence, Jackson, and Taylor counties. Photo by Cheryl Muller.



Yellowbanded bumble bee (*B. terricola*). New county records for this SGCN were made in Clark, Juneau, Outagamie, and Taylor counties. Photo by James Shirota.



2023 Survey Highlights— Nests

- B3 volunteers found a whopping 55 nests! This is far more than any other year reported. These nests included:
 - 3 Rusty patched bumble bee (*B. affinis*) nests (see [Special Edition: Rusty patched bumble bee nests on pg. 11](#)).
 - One Yellow bumble bee (*B. fervidus*) nest (A State Species of Greatest Conservation Need).
 - One Half-black (*B. vagans*), two Black and Gold (*B. auricomus*), four Twospotted (*B. bimaculatus*), five Northern amber (*B. borealis*), 9 Redbelted bumble bee (*B. rufocinctus*), 12 Brownbelted (*B. griseocollis*), and finally, winning the race for most nests found, 15 Common eastern (*B. impatiens*) bumble bee nests.
- The nests reported used the following habitat types: rodent burrows (44%), ground (24%), human-made structures (12%), lawn (8%), other (8%), and rock pile (4%).
- Of the nests reported, 13 were predated. One was reported to have recovered from the predation.



This Common eastern (*B. impatiens*) nest was opened by a predator. Photo: Justin Nooker



Above: These Common eastern (*B. impatiens*) were using a crack between rocks to hide their nest. Photo: Jennifer Beil



This Half-black (*B. vagans*) queen was found in May and likely had only just started her colony. The nest was found in a disused rodent nest at base of grass tussock in thatch of prairie restoration. Photo: Angus Mossman



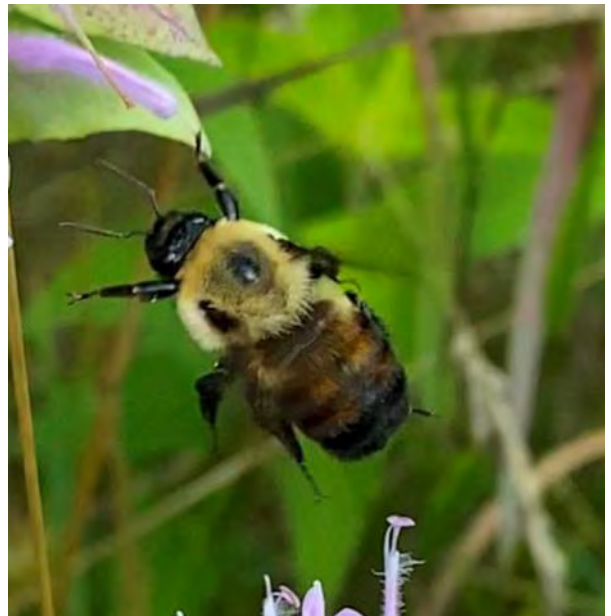
This thriving nest of Redbelted (*B. rufocinctus*) bees had over 100 bees in a single observation. They were found in a shed and relocated to a plastic container. Photo: Alex Geers

What should I do if I have a bumble bee nest?
 Leave it 'bee'! If safely possible, let the bumble bee nest be. They are much more docile than wasps, though it might be good to put up a few signs so you can keep further from the nest. Bumble bees nest annually (one year cycles) and typically do not return to old nest sites, so the nest should get abandoned by fall.

2023 Results

Species	# Sites
<i>B. sandersoni</i> (Sanderson's)	16
<i>B. flavidus</i> (Fernald cuckoo)	16
<i>B. insularis</i> (Indiscriminate cuckoo)	19
<i>B. pensylvanicus</i> (American)	24
<i>B. perplexus</i> (Confusing)	41
<i>B. terricola</i> (Yellowbanded)	46
<i>B. borealis</i> (Northern amber)	66
<i>B. ternarius</i> (Tricolored)	95
<i>B. citrinus</i> (Lemon cuckoo)	148
<i>B. fervidus</i> (Yellow)	151
<i>B. auricomus</i> (Black and gold)	201
<i>B. affinis</i> (Rusty Patched)	270
<i>B. rufocinctus</i> (Redbelted)	291
<i>B. vagans</i> (Half-black)	291
<i>B. bimaculatus</i> (Twospotted)	339
<i>B. griseocollis</i> (Brownbelted)	357
<i>B. impatiens</i> (Common eastern)	518

Note: Number of sites do not necessarily mean that the bee is more common throughout the state, just that it was reported more frequently.



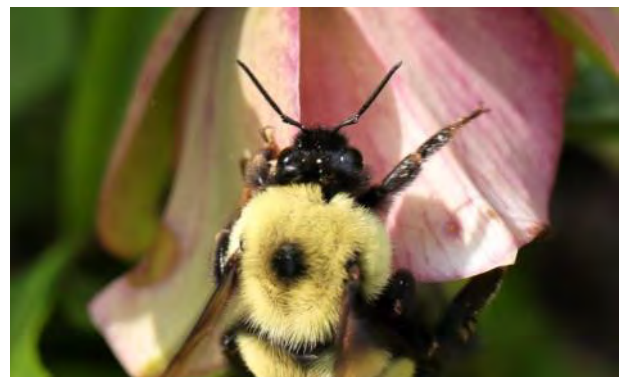
This strange Brownbelted bumble bee (*B. griseocollis*) morph had a triple belt!
Photo: MCP Natural Areas Program



A beautiful photo of Fernald cuckoo (*B. flavidus*) in Oneida county. Photo: Jeff Verdoorn



New county record for Monroe! Confusing bumble bee (*B. perplexus*). Photo: Connie Weedman



A beautiful photo of a Rusty patched bumble bee gyne (*B. affinis*) in Brown county. Photo: Gail Vann

Your participation in action

The Stories Behind the Data

Exciting News for Warwick Way Gardens! – Crawford – Marlborough – Nakoma Neighborhood Association

Every flower you plant can make a difference in your neighborhood, and that's what members of the Crawford-Marlborough-Nakoma Neighborhood Association did. Residents were inspired by [B3 flower recommendations](#) to apply for a local Master Gardeners' Association grant. They were awarded the grant and used it to plant key shrubs and over 80 wildflowers that will beautify a local public garden. This habitat will support the bumble bees' entire life cycle. They also created signage to continue educating people!

Photo and article adapted from post by Carol Buelow. Reproduced with permission. Read full article [here](#).

Photo: Carol Buelow

Art, Media, and Bees!

It's always magical when you can combine what you are passionate about with a cause and career. In addition to working at Moraine Park Technical college to support and promote students, videographer and Video Production Specialist Brenda Hughes turned her talents towards nature videography. Brenda and her film crew Alissa Jeffers and Alexander Hughes joined for a day in the field, chasing after tiny bumble bees with big cameras and recording the story of why these pollinators are important. Their promotional video on the importance of bee nesting habitat helped us achieve this banner year for nests found this year. You can check out the long video [here](#), and short, fun 'Wild Facts' on bees [here](#) and [here](#)!

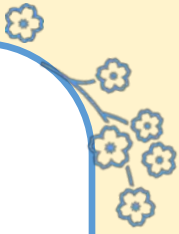
Special thanks to Randy Poelma and the Ho-Chunk Nation for allowing filming, as well as Angus Mossman, Jade Kochanski, Genevieve Pugeseck, Judy Cardin, and Bob Plamann

Alexander Hughes (left), Brenda Hughes (center) and Alissa Jeffers (right), still smiling after a very long day in the field

Website: greenbeemediabuzz.com
YouTube: [@greenbeemediabuzz](http://www.youtube.com/@greenbeemediabuzz)
Email: greenbeemediabuzz@gmail.com

Photo: Elizabeth Braatz

New Generations are Blooming at Sauk County Tower Rock School



Teachers at Tower Rock Elementary in the Sauk Prairie School District school are working to connect science classes with a local, tangible connection to the land. “I can teach a kid about bugs in the middle of winter, but come spring they see that same bug and they're afraid of it. They're learning in their minds but not in their hearts,” reflected instructor Angus Mossman. Fueled by this idea, teachers at Tower Rock have incorporated experiential and place-based learning into their curricula. One lesson that especially resonated with students was the story of the Rusty patched bumble bee. After learning about the plight of these endangered bees, a class of second graders came up with an idea: why not turn some of the unused, lawn grass monoculture in front of the school into prairie? The second graders (who are now fifth graders) took action. With some help from their teachers, they presented the idea to the school superintendent (or in the words of Jaelyn, “we made a slide show for Mr. Wright”). Mr. Wright was convinced, and gave the green light for the prairie to proceed.



In a world where the future can seem overwhelming, students at Tower Rock Elementary are teaching us about the impact of a single garden and the power of a community.

Students were active along every step of the way. Elsa explained, “I helped by surveying the 5th graders of Tower Rock and making signs to put up in the prairie so kids can learn about the animals like the bees, butterflies, and spiders.” As Sam explained, “I am helping to create a sign on the history of the prairie. I have helped collect, gather, and spread seeds... I also helped rip out the landscape fabric.” Families got involved too. Sam recalled, “My father also came and helped interpret the soil sample we did.”

The students’ dream spread to the community. Students and teachers worked together to write and receive a Monarch Joint Venture grant to put in habitat, and dozens of local government offices, nonprofits, and individuals donated time, seeds, and expertise. Three years later, in 2023, an endangered Rusty patched bumble bee was confirmed at the school’s prairie through the WI Bumble Bee Brigade. Adaline summed it up perfectly. “Starting the prairie was so much fun, and it helps the earth. I’m so thankful that this project was possible!”

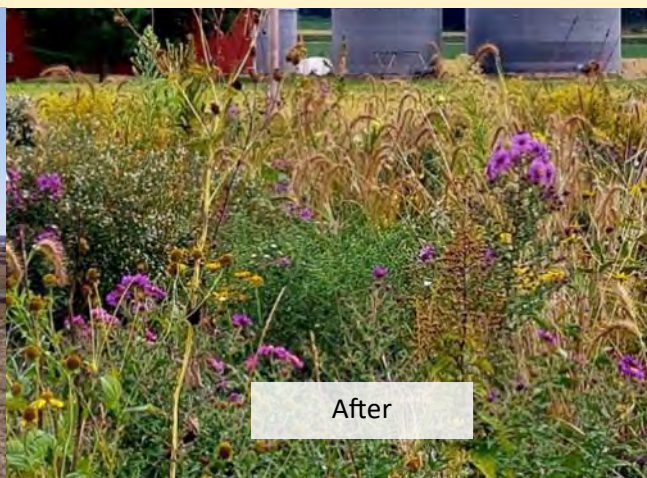
The prairie will continue to be a part of students’ education in the future. As Jaelyn reflected, “It’s a great place for kids to learn and explore, an experience that students might have never had before experiencing it here. Some kids don’t always get a chance to learn and play in an environment like our prairie.”

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Before



After



Pulling out trash and plastic netting after herbiciding

Voices from the Field

I like to see bees and insects fly and be happy. - Kyla, 1st Grade

*The reason I like the prairie is because I like to hike and play.
- Amy, 2nd Grade*

*One of my favorite memories is putting the seeds and doing an
adventure to find the flowers with Mr. Angus.
- Alani, 3rd Grade*

*I just overall like the prairie. No, I don't like it, I love it :D
-Henry, 5th Grade*

*All of the life on the prairie is so amazing and beautiful.
-Abigail, 5th Grade*

*We built a prairie where so many species can live. I love this
prairie because my school built it from the ground up, literally. I
love looking at the flowers and running through the foxtail
barley, setting live traps for small mammals and smelling the
aster. This prairie is the heart of this school where everyone
comes together to help.
- Elliot, 5th Grade*

*It's important to have a vision, be patient, and involve other
people as much as possible. This prairie has definitely been a
team effort. We took it slow and got buy-in from a lot of people—
it's gotten us a lot farther in the long run. There's a lot of
community support and funding opportunities to start projects
like this. The Wisconsin DNR, Pheasants Forever, county offices,
and community members can all help. Creating and maintaining
a prairie can be a lot of work, but if people are invested and you
have a team who can contribute different skills and resources,
the result is pretty wonderful! Just beware of the odd woolly bear
crawling out of a student's pocket during math class.
- Angus Mossman, Teacher*



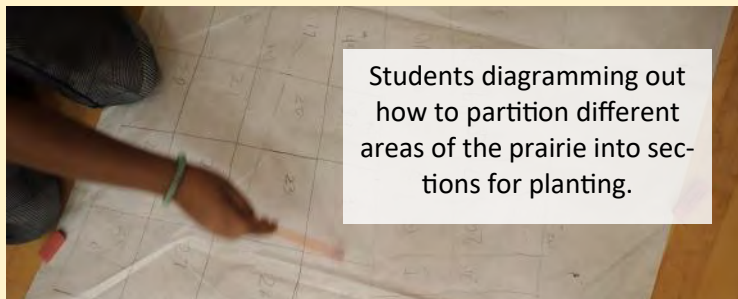
(Above): Student reading in prairie during recess



(Above): Student using sweepnet in the prairie



(Above): Students, families, and community members using the prairie



Students diagramming out how to partition different areas of the prairie into sections for planting.

Your participation in action continued...

A Biobasin Bumblebee Success by the City of Madison Engineering Department

This spring, the City of Madison Engineering Department installed over 9,000 plants in two newly constructed biobasins at the far west side's South Point Facility. This site, besides being new, was also unique in that many stormwater engineers and designers as well as Operation Fresh Start youth crews helped do the planting. [Operation Fresh Start](#) is a program that provides mentorship, education, and employment training to help young adults become self sufficient. Madison Engineering was delighted to report that despite the dry spring, by fall the plants were thriving and many even flowered in their first year. This vegetation serves to not only fulfill stormwater requirements, but will be a beautiful addition to the City facility and provide numerous habitat benefits. Finally, thanks to collaboration between Bumble Bee Brigade and Engineering Department, Conservation Technician Emily Jorgensen monitored the site for bees, and an endangered Rusty patched bumble bee was found and confirmed using the new habitat in the first year!



Before

After

A big shout out to everyone who promoted pollinators to the public

A big thank you to Susan Nelson, Kevin Hanley, Nikki Carter, Rachel Padour, Ann Peder Reilly, Harold Ehrenreich, Susan Carpenter, Zach Kastern, and all the other B3 volunteers who shared the buzz on pollinators by giving talks, writing blogs, and or other educational outreach for the public in 2023!



Nikki Carter, Natural Resource Specialist at the Bureau of Land Management, sets up a table with all things bee for kids at Canoemobile and Public Lands Day. Photo: Nikki



Special Edition: Camera Tips! By Judy Cardin

First, neither Bob or I are camera experts, and there are many choices out there. That's what makes the first purchase a bit bewildering and overwhelming. If we can do it anyone can! We both started bee photography with our smartphones. As we got more involved with B3 observations, we were frustrated with both the clarity of the photos and how close we needed to be to take an identifiable photo. We wanted cameras that would:

- Capture photos of moving bees
- Produce clear photos of bees 10-12 feet away
- Be easy to use — lightweight, durable, good auto focus, and uncomplicated manual focus
- Be reasonably priced

We're not saying you have to use a fancy camera! Cell phones are still good. This article is for people who are interested in getting a bit deeper into photography.



Photo taken with Canon EOS Rebel T7 DSLR, by Bob Plamann

Mistakes to avoid in your camera purchase - Don't:

- Overbuy with your first camera. I would recommend starting with a package in the \$500-600 range. You may find something less expensive, but the Canon Rebel T7 works well for Bob.
- Purchase a lot of accessories. For bee photography we use the camera, the 70-300 mm telephoto lens, a good cloth lightweight camera case, two-three camera batteries and a battery charger. We keep a 32 gb memory card in our cameras, and download photos to our computer then delete all the photos from the camera memory card. Wait until you have used your camera a few months to decide if you need more accessories.
- Buy the much less expensive point and shoot cameras. They will give you similar photo quality to smart phone cameras.

I'm not sure we made the perfect choices, but they are working for us. Bob got a Canon EOS Rebel T7 DSLR with two lens, 18-55 mm and 75-300 mm (\$600). I read online reviews, and decided on a Nikon D5600 DSLR with two lens, 18-55mm and a 70-300 mm (\$1400). Elizabeth Braatz at the DNR uses a Nikon D5300 camera with an AF-P Nikkor 70-300 mm 1:4.5-6.3G lens (\$600).

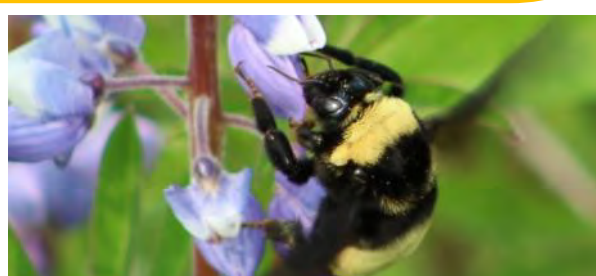
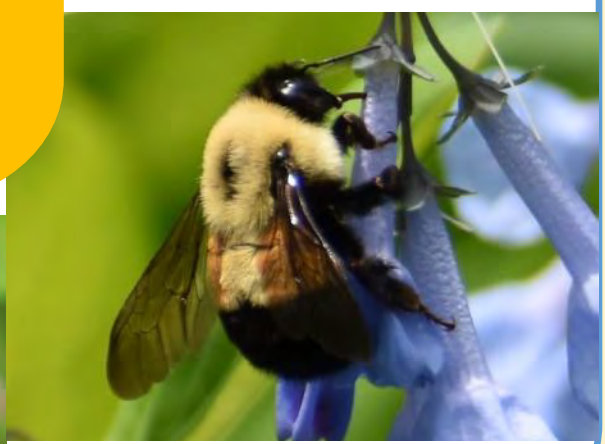


Photo taken with Nikon D5300 DSLR , by Elizabeth Braatz



Photos (below) taken with Nikon D5600 DSLR , by Judy Cardin





Special Edition: Camera Tips! Continued... By Judy Cardin

Three biggest lessons I learned when I got my camera:

- Expect a long learning curve getting to know and use your camera. It can take months (me!) to get totally comfortable with snapping busy, moving bees. Get out and take bee photos often, and don't worry about the quality of those learning photos. Just learn and improve.
- Take at least 10 times the photos you think necessary of bees moving around flowers. Our cameras have a function that keeps taking shots if you keep the button depressed. Keep clicking when you think you have the shot. Most of these photos will be out focus or obstructed. Digital photos are easy to delete!
- Research the best method to store the photos you keep. This will depend on how many photos you store and your situation. Some options include: cloud storage (our choice, and there are several free plans), portable hard drives, and your computer.



Photo: Gail Vann

"My tips are to shoot lots of photos, and use photo editing software to crop and bring out the best in the photos - I use Canon's Digital Photo Professional 4. I shoot in manual, with the ISO set to auto. I get my best results on brightly lit, but overcast days."

- Gail Vann

Camera used: Canon EOS 90D camera with a Canon macro EFS 35mm



Photo: Gail Vann

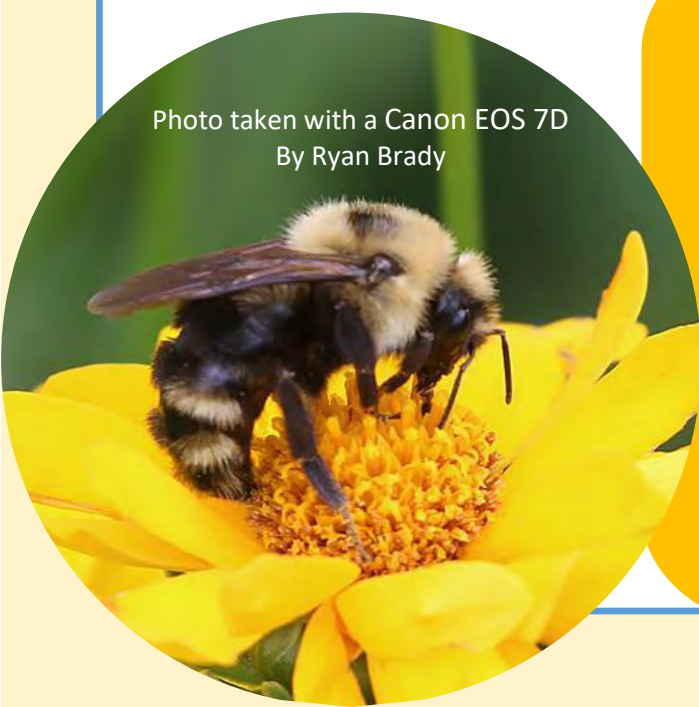


Photo taken with a Canon EOS 7D
By Ryan Brady

What if I want to photograph birds and my family too?

"I have one camera and lens that I use for everything I photograph, from birds to bugs to my kids' sports events. It's relatively large, heavy to lug around, and expensive, but it will yield quality shots of bees if you take a bunch. The body is a Canon EOS 7D and the lens is Canon EF 100-400mm f/4.5-5.6L IS II USM. More zoom provides more reach, but the bigger lens slows shutter speeds, so I get quite a few blurry ones unless it's bright and the bee isn't too quick. If I was going to get a camera just for bees, I'd probably not recommend it and instead point to some of the smaller ones many folks have good success with."

— Ryan Brady





Special Edition: Rusty patched bumble bee nests



Rusty patched gyno
Milwaukee county site
Photo: Elizabeth Braatz

That’s right – nests! We have only had seven Rusty patched bumble bee nests found in Wisconsin over the past 20 years, and three of them were found this summer. All three partners took detailed notes on the nests, which were shared with the U.S. Fish and Wildlife Service and researchers to improve our understanding of this important part of the bee life cycle.

Nest 1: Bob Ring, Rachel Padour, Ann Stilp, and partners at AriensCo have long been putting in extensive habitat. They have also been adding shoulder season plants, including lots of spring ephemerals for spring gynes. This year, we were all extremely excited to hear that they had found a nest in their restored habitat! Bob Ring and Rachel Padour led the charge, contacting the DNR and taking extremely detailed notes. Thank you, AriensCo!

Nest 2: Halley Minser and partners at Milwaukee County Parks have been putting in habitat for years, and she was delighted to see the work continue to pay off by finding a Rusty patched bumble bee nest this year. Thank you, Milwaukee County Parks!

Nest 3: Dave Giordano, Kristine Heuser, and partners at Root Pike Watershed Initiative Network have been hard at work doing large-scale restoration and pollinator plantings in the Kenosha area. Rusty patched bumble bees have been repeatedly found in their restored sites, and they were delighted to find a Rusty patched bumble bee nest near their sites this year. Thank you, Root Pike WIN!



Kristine Heuser (Root Pike WIN) surveys pollinator habitat. Photo: Eddee Daniel

So, what happened with all these nests? During the summer, we kept their locations confidential to protect them. As soon as the nests had successfully finished generating gynes (new queens), if the sites were suitable for an excavation, DNR staff with Rusty patched bumble bee permits worked with the U.S. Fish and Wildlife Service and land managers to extract the nests so researchers could learn more about this elusive part of the Rusty patched bumble bee life cycle. In addition, sickly specimens were sent to an infectious disease lab, the nest was sent to a researcher on nest structure, and soil will be sampled by a third party.



Halley Minser (Milwaukee county parks) at the nest site
Photo: Elizabeth Braatz



Bob Ring and Rachel Padour (AriensCo) stand near the Calumet county nest site after excavation. Photo: Jay Watson

Table of County Records from B3 in 2023

Bumblebee Species	County
American (<i>B. pensylvanicus</i>)**	Brown, Columbia, La Crosse, Marathon, Winnebago
Brownbelted (<i>B. griseocollis</i>)	Clark
Black and Gold (<i>B. auricomus</i>)	Trempealeau, Jackson
Common Eastern (<i>B. impatiens</i>)	Pierce, Price
Confusing (<i>B. perplexus</i>)**	Brown, Burnett, Dane, Dunn, Fond du Lac, Lincoln, Manitowoc, Monroe, Outagamie, Vernon, Washburn
Fernald cuckoo (<i>B. flavidus</i>)*	Jackson, Juneau, Price, Rusk, Taylor, Vilas
Half-black (<i>B. vagans</i>)	Price
Indiscriminate Cuckoo (<i>B. insularis</i>)**	Bayfield, Calumet, Fond du Lac, Jackson, Juneau, Outagamie, Pierce, Polk, Price, Shawano, Trempealeau, Vernon
Lemon cuckoo (<i>B. citrinus</i>)	Barron, Chippewa, Jackson, Juneau, Lincoln, Pepin, Polk, Washburn
Northern amber (<i>B. borealis</i>)	La Crosse, Monroe, Price, Rock, Taylor, Washburn
Redbelted (<i>B. rufocinctus</i>)	Clark, Grant, Shawano, Trempealeau, Vernon, Vilas, Wood
Rusty patched (<i>B. affinis</i>)***	Bayfield, Buffalo
Sanderson's (<i>B. sandersoni</i>)**	Douglas, Florence, Jackson, Taylor
Tricolored (<i>B. ternarius</i>)	Calumet, Clark, Fond du Lac, Wood
Twospotted (<i>B. bimaculatus</i>)	Adams, Clark, Lincoln, Richland, Taylor
Yellow (<i>B. fervidus</i>)**	Outagamie, Pepin, Polk, Wood
Yellowbanded (<i>B. terricola</i>)**	Clark, Fond du Lac, Juneau, Outagamie, Price, Taylor

*State Species of Greatest Information Need

**State Species of Greatest Conservation Need

***Federally Endangered

County Record Rockstars 2023

Check here to see if you found a county record!

Name	County Records
Ann Pedder Reilly	American (<i>B. pennsylvanicus</i>)** in Brown; Redbelted (<i>B. rufocinctus</i>) in Grant
Anna Powers	Confusing (<i>B. perplexus</i>)** in Lincoln
Bob Plamann and Judy Cardin	Confusing (<i>B. perplexus</i>)** in Dane; Northern amber (<i>B. borealis</i>) in Rock; Fernald cuckoo (<i>B. flavidus</i>) in Juneau; Indiscriminate cuckoo (<i>B. insularis</i>) in Juneau; Lemon cuckoo (<i>B. citrinus</i>) in Juneau and Lincoln; Sanderson's (<i>B. sandersoni</i>) in Florence; Twospotted (<i>B. bimaculatus</i>); Yellowbanded (<i>B. terricola</i>) in Juneau
Cheryl Muller	Brownbelted (<i>B. griseocollis</i>) in Clark; Confusing (<i>B. perplexus</i>)** in Dunn; Fernald cuckoo (<i>B. flavidus</i>) in Taylor; Indiscriminate (<i>B. insularis</i>) in Trempealeau; Lemon cuckoo (<i>B. citrinus</i>) in Barron and Washburn, Northern amber (<i>B. borealis</i>) in Taylor and Washburn; Redbelted (<i>B. rufocinctus</i>) in Clark; Redbelted (<i>B. rufocinctus</i>) in Trempealeau; Sanderson's (<i>B. Sandersoni</i>) in Taylor; Tricolored (<i>B. ternarius</i>) in Clark; Twospotted (<i>B. bimaculatus</i>) in Clark; Twospotted (<i>B. bimaculatus</i>) in Taylor; Yellow (<i>B. fervidus</i>) in Pepin; Yellowbanded (<i>B. terricola</i>) in Clark and Taylor
Connie Weedman	Confusing (<i>B. perplexus</i>)** Monroe
Connie Weedman	Northern amber (<i>B. borealis</i>) in Monroe
Dale Olson	Lemon cuckoo (<i>B. citrinus</i>) in Polk; Yellow (<i>B. fervidus</i>) in Polk
Dan Jackson	American (<i>B. pennsylvanicus</i>)** in La Crosse, Black and Gold (<i>B. auricomus</i>) in Trempealeau; Confusing (<i>B. perplexus</i>)** in Vernon; Common eastern (<i>B. impatiens</i>) in Price; Fernald cuckoo (<i>B. flavidus</i>) in Price and Rusk and Vilas; Half-black (<i>B. vagans</i>) in Price; Indiscriminate cuckoo (<i>B. insularis</i>) in Vernon; Lemon cuckoo (<i>B. citrinus</i>) in Jackson; Golden amber (<i>B. borealis</i>) in La Crosse and Price, Redbelted (<i>B. rufocinctus</i>) in Vernon and Vilas; Sanderson's (<i>B. sandersoni</i>) in Jackson; Tricolored (<i>B. ternarius</i>) in Wood
Darcy Kind	Lemon cuckoo (<i>B. citrinus</i>) in Pepin

*State Species of Greatest Information Need

**State Species of Greatest Conservation Need

***Federally Endangered

County Record Rockstars 2023 Continued...

Check here to see if you found a county record!

Name	County Records
Gail Vann	Confusing (<i>B. perplexus</i>)** in Brown
Harold Ehrenreich	Indiscriminate cuckoo (<i>B. insularis</i>) in Shawano; Redbelted (<i>B. rufocinctus</i>) in Shawano
James Otto	American (<i>B. pensylvanicus</i>)** in Columbia
James Shirota	Yellowbanded (<i>B. terricola</i>) in Outagamie
Jay Vosters	Confusing (<i>B. perplexus</i>)** in Outagamie; Indiscriminate (<i>B. insularis</i>)* in Calumet; Lemon cuckoo (<i>B. citrinus</i>) in Chippewa
Jay Watson	Black and gold (<i>B. auricomus</i>) in Jackson; Confusing (<i>B. perplexus</i>)** in Burnett, Fond du Lac, and Manitowoc; Indiscriminate (<i>B. insularis</i>) in Fond du Lac and Outagamie; Tricolored (<i>B. ternarius</i>) in Fond du Lac; Twospotted (<i>B. bimaculatus</i>) in Richland; Yellow (<i>B. fervidus</i>) in Outagamie; Yellowbanded (<i>B. terricola</i>) in Fond du Lac and Price; Rusty patched bumble bee (<i>B. affinis</i>) in Buffalo
Justin Nooker	Indiscriminate cuckoo (<i>B. insularis</i>) in Jackson
Maddie Pearson	American (<i>B. pensylvanicus</i>)** in Marathon
Melanie Weberg	Indiscriminate cuckoo (<i>B. insularis</i>) in Polk
Mitch Bergeson	Common eastern (<i>B. inpatiens</i>) in Pierce; Indiscriminate cuckoo (<i>B. insularis</i>) in Pierce
Pamela Tesch	Yellow (<i>B. fervidus</i>) in Wood
Peggy Ramer	Redbelted (<i>B. rufocinctus</i>) in Wood
Renaee Essenmacher	Confusing (<i>B. perplexus</i>)** in Washburn
Rory Williams	American (<i>B. pensylvanicus</i>)** in Winnebago
Rory Williams	Twospotted (<i>B. bimaculatus</i>) in Adams
Ryan Brady	Indiscriminate cuckoo (<i>B. insularis</i>) in Bayfield; Sanderson's (<i>B. sandersoni</i>) in Douglas; Rusty patched (<i>B. affinis</i>) in Bayfield
Steffi Jonas	Tricolored (<i>B. ternarius</i>) in Calumet

*State Species of Greatest Information Need

**State Species of Greatest Conservation Need

***Federally Endangered

2023 Participation by County

B3 participation varies a great deal by county, with the most populous counties tending to have more volunteers. The number of species verified in a county doesn't always represent the diversity of bumble bee species present. Instead, it often relates to the number of volunteers participating in that county or how often they survey.

County	Species Verified	Surveys	Sites	Participants
Adams	7	5	5	4
Ashland	8	9	9	2
Barron	5	1	1	1
Bayfield	15	48	25	9
Brown	15	110	28	17
Burnett	12	12	8	3
Calumet	12	181	28	15
Chippewa	9	8	6	3
Clark	9	4	3	2
Columbia	11	32	18	6
Crawford	7	10	8	7
Dane	12	426	174	75
Dodge	7	16	5	4
Door	12	30	29	11
Douglas	5	4	4	3
Dunn	11	8	6	2
Eau Claire	11	29	17	5
Florence	7	1	1	1
Fond du Lac	12	4	4	1
Forest	4	4	4	2
Grant	7	8	5	5
Green	7	6	5	5
Green Lake	10	4	3	3
Iowa	11	53	22	11
Iron	4	11	4	1
Jackson	12	30	24	5
Jefferson	10	30	11	5
Juneau	10	5	3	3

*Counties not listed did not have data submitted in 2022

2023 Participation by County, continued

County	Species Verified	Surveys	Sites	Participants
Kenosha	9	27	15	8
Kewaunee	3	2	2	1
La Crosse	13	210	32	10
Langlade	2	2	2	2
Lincoln	10	5	5	3
Manitowoc	8	25	17	15
Marathon	10	11	6	5
Marinette	8	7	7	3
Marquette	1	1	1	1
Milwaukee	12	452	180	40
Monroe	9	11	6	5
Oconto	5	2	2	2
Oneida	9	15	4	4
Outagamie	10	20	15	7
Ozaukee	5	7	6	5
Pepin	9	4	4	3
Pierce	4	2	1	1
Polk	11	37	3	2
Portage	4	6	5	5
Price	9	8	6	2
Racine	8	40	16	10
Rock	10	47	12	7
Rusk	8	6	4	2
Sauk	11	71	30	11
Sawyer	7	7	6	3
Shawano	8	17	1	1
Sheboygan	4	5	4	4
St. Croix	2	3	2	2
Taylor	10	6	5	2
Trempealeau	11	5	5	3

2023 Participation by County, continued

County	Species Verified	Surveys	Sites	Participants
Vernon	13	38	9	2
Vilas	9	15	10	5
Walworth	9	109	17	11
Washburn	7	6	4	2
Washington	5	3	3	3
Waukesha	10	66	31	20
Waupaca	8	9	4	4
Waushara	3	4	3	2
Winnebago	11	25	13	8
Wood	6	9	5	3