



BUMBLE BEE BRIGADE

2021 YEAR-IN-REVIEW

While we very much miss Eva's energy and dedication to the project, we're excited to announce a new B3 coordinator later this spring!

We are extremely grateful to everyone who was part of the project this year. Your dedication to monitoring and conserving Wisconsin's bumble bees is inspiring. Thank you all!

-Jay and Terrell (The B3 Team)



B. affinis nest excavated after activity ended near La Crosse. Found by B3 Volunteer Mike O'Brien. Photo: Jay Watson

B3 Contributions	2021	2020	2019	2018
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

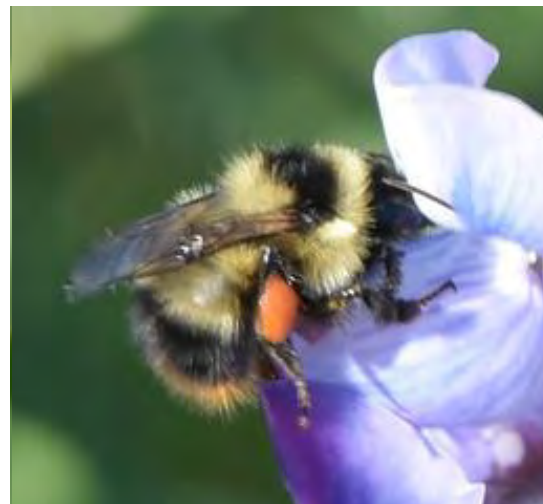


2021 Preliminary Results

- The first bees reported to B3 were *B. bimaculatus* and *B. fervidus* queens in Milwaukee County on March 22.
- The last bee reported to B3 was a *B. rufocinctus* queen in Dane County on November 17.
- First WI record of *B. nevadensis*, a male (photo below) in Dane County on July 27. Minnesota had a few observations near Duluth and the Twin Cities in recent years.
- *B. pensylvanicus* was verified at 20 sites, up significantly from previous years. Fourteen were new sites.
- Participants added new county records for the federally endangered *B. affinis* in Green Lake, Marquette, Outagamie and Trempealeau counties.
- *B. sandersoni*, *frigidus*, *insularis* and *flavidus* were all verified at less than 10 sites, while *B. bimaculatus*, *griseocollis*, *affinis* and *impatiens* were all reported at over 200. Most number of *B. affinis* sites, double of what was recorded in 2020. See the table on page 3 for a full list of the number of sites at which each species was found. Please note that these numbers don't fully represent how rare or common a species is. Reporting bias, location of volunteers, and difficulty in identifying some species in photos all play a role in the number of sites at which a species is verified.
- 21 bumble bee nests were verified, representing 7 species.
- More counties were visited in 2021 than previous years, with observations reported from 67 of Wisconsin's 72 counties. See the figure on page 4 to see which parts of the state had more visits and number of species reported.
- We are looking forward to the 2022 bumble bee season! In the spring, look for bumble bees in areas with fruit trees (apple, wild plum, etc.) and in forested areas with spring ephemerals. Are you seeing bumble bees in/near wetlands, forests and agricultural areas? What are they visiting?



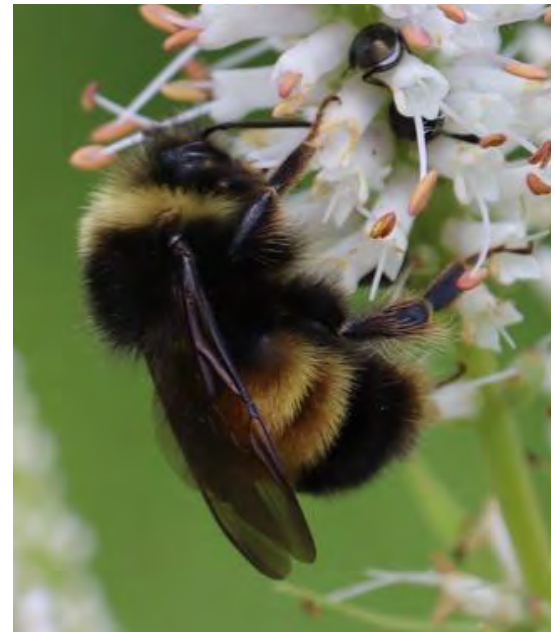
Male *B. nevadensis* were confirmed for the first time in B3 in 2021. Photo: B3 volunteer Bob Plamann



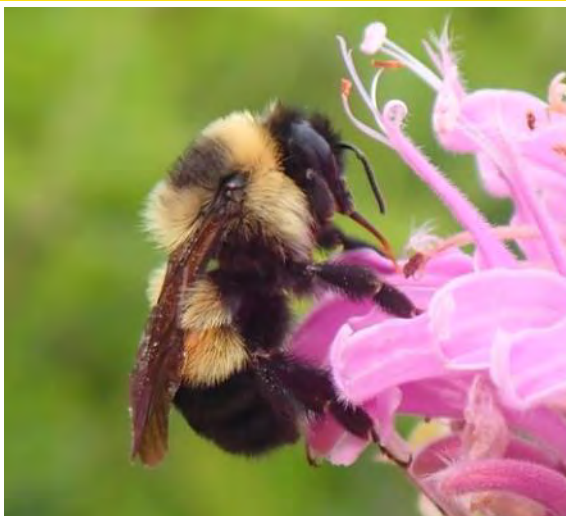
Worker *B. frigidus* visiting Wild lupine observed in Burnett Co. Photo: Jay Watson

2021 Preliminary Results

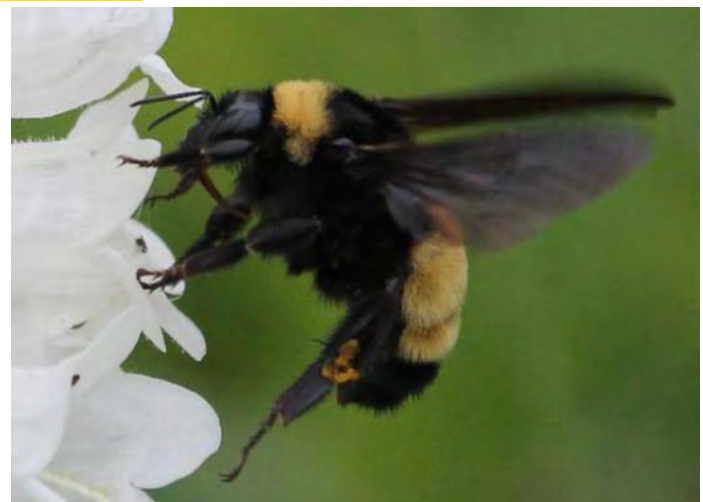
Species	2021 Sites
<i>B. nevadensis</i> (Nevada)	1
<i>B. frigidus</i> (Frigid)	1
<i>B. sandersoni</i> (Sanderson's)	1
<i>B. insularis</i> (Indiscriminate cuckoo)	3
<i>B. flavidus</i> (Fernald cuckoo)	7
<i>B. pensylvanicus</i> (American)	20
<i>B. terricola</i> (Yellowbanded)	26
<i>B. perplexus</i> (Confusing)	31
<i>B. borealis</i> (Northern amber)	72
<i>B. ternarius</i> (Tricolored)	53
<i>B. citrinus</i> (Lemon cuckoo)	94
<i>B. fervidus</i> (Yellow)	115
<i>B. auricomus</i> (Black and gold)	127
<i>B. vagans</i> (Half-black)	167
<i>B. rufocinctus</i> (Redbelted)	167
<i>B. griseocollis</i> (Brownbelted)	204
<i>B. bimaculatus</i> (Twospotted)	206
<i>B. affinis</i> (Rusty Patched)	208
<i>B. impatiens</i> (Common eastern)	305



Male *B. terricola* visiting Culver's root in Green Lake Co. Photo: B3 volunteers Gemma Krause & Benjamin Grady

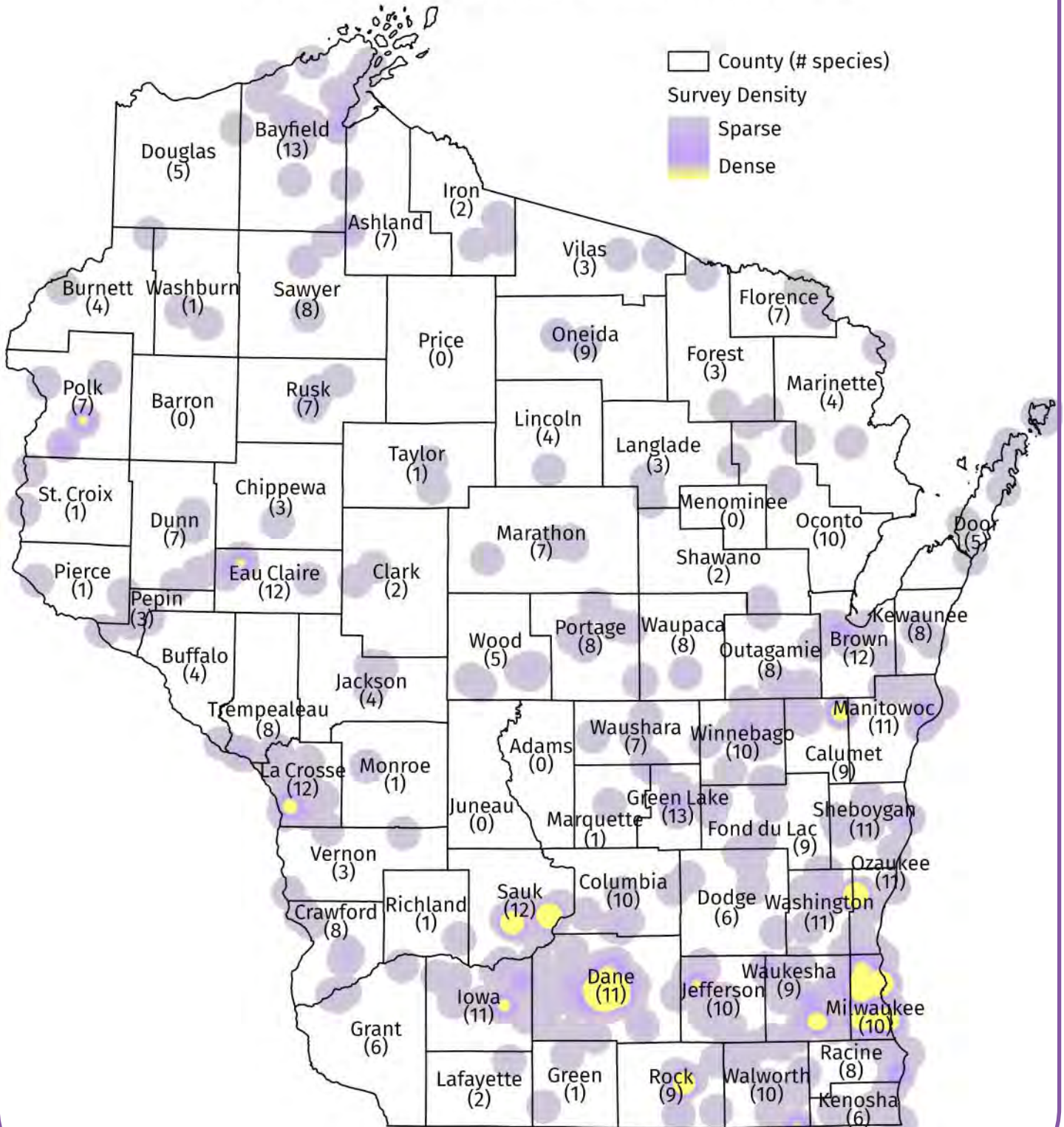


Worker *B. affinis* visiting Bergamot in Sauk Co. Photo: B3 volunteer Angus Mossman



Female *B. pensylvanicus* visiting Foxglove beardtongue in Dane Co. Photo: B3 volunteers Judy Cardin & Bob Plamann

Bumble Bee Brigade 2021 Results Species Tally by County and Survey Density



2021 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	Participants	Sites	Surveys	Species Verified
Ashland	2	5	12	7
Bayfield	8	20	51	13
Brown	7	10	23	12
Buffalo	1	1	2	4
Burnett	1	2	2	4
Calumet	4	4	44	9
Chippewa	1	1	1	3
Clark	1	2	2	2
Columbia	6	7	9	10
Crawford	3	5	10	8
Dane	46	120	345	11
Dodge	5	5	7	6
Door	5	8	11	5
Douglas	1	1	1	5
Dunn	2	4	4	7
Eau Claire	5	11	31	12
Florence	1	3	3	7
Fond du Lac	5	9	11	9
Forest	3	3	4	3
Grant	3	4	5	6
Green	1	1	1	1
Green Lake	7	9	18	13
Iowa	6	18	46	11
Iron	2	2	3	2
Jackson	3	3	4	4
Jefferson	8	12	33	10
Kenosha	5	6	7	6
Kewaunee	1	1	1	8
La Crosse	9	24	45	12

*Continued on Page 6; counties not listed did not have data submitted in 2021

2021 Participation by County, continued

County	Participants	Sites	Surveys	Species Verified
Lafayette	2	2	2	2
Langlade	2	2	3	3
Lincoln	1	1	1	4
Manitowoc	6	9	27	11
Marathon	3	4	7	7
Marinette	3	3	3	4
Marquette	1	1	1	1
Milwaukee	25	116	293	10
Monroe	1	1	3	1
Oconto	1	3	4	10
Oneida	2	2	11	9
Outagamie	6	9	10	8
Ozaukee	6	35	88	11
Pepin	2	3	3	3
Pierce	1	1	1	1
Polk	4	5	29	7
Portage	2	7	9	8
Racine	6	6	25	8
Richland	1	1	1	1
Rock	6	9	66	9
Rusk	2	3	8	7
Sauk	3	14	161	12
Sawyer	3	3	6	8
Shawano	1	1	2	2
Sheboygan	7	10	16	11
St. Croix	1	1	1	1
Taylor	1	1	1	1
Trempealeau	3	7	8	8
Vernon	2	3	4	3
Vilas	2	3	3	3
Walworth	7	9	34	10
Washburn	1	1	1	1
Washington	8	9	15	11
Waukesha	16	28	87	9
Waupaca	1	3	10	8
Waushara	3	4	5	7
Winnebago	3	13	26	10
Wood	3	6	7	5