

Pollinator Steward Certification



A PROGRAM OF
POLLINATOR PARTNERSHIP

Module 6: Identification and Monitoring

Tuesday, April 1st, 2025

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Pollinator Partnership

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Protect their lives. Preserve ours.

Housekeeping:

- Recordings will be shared on the Course Information page and will be available until December 31st, 2025
- Closed captioning is available – enable in your controls.
- Please put questions in the Q&A box; UPVOTE questions you like!
- Questions for panelists will be answered at the end of the session.
- Contact stewards@pollinator.org for registration issues, questions, etc.
- Engage in respect and kindness with each other in the chat.
- We suggest that you write down in point form or 1-2 sentences the key takeaways from each training while you are attending live.



Course Information Page:

The Course Information page will be your homebase for module recordings, updates, and program resources. Login to the Course Information page using the following username and password:

website: <https://www.pollinator.org/psc/course-info>

username: PollinatorSteward

password: psc2025

Please do not share the username and password as this page is only for registered participants of the 2025 Pollinator Steward Certification program.



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Tonight's Speakers!



Anthony Colangelo
Outreach and Education Specialist
Pollinator Partnership



Lora Morandin, PhD
Associate Director
Pollinator Partnership



How do we know if it works?



The beginning of an urban native plant garden patch in 2019 – filled with construction rubble, Japanese knotweed, goutweed, plant remains, and dry/compact soil (Parkdale, Toronto, Canada)



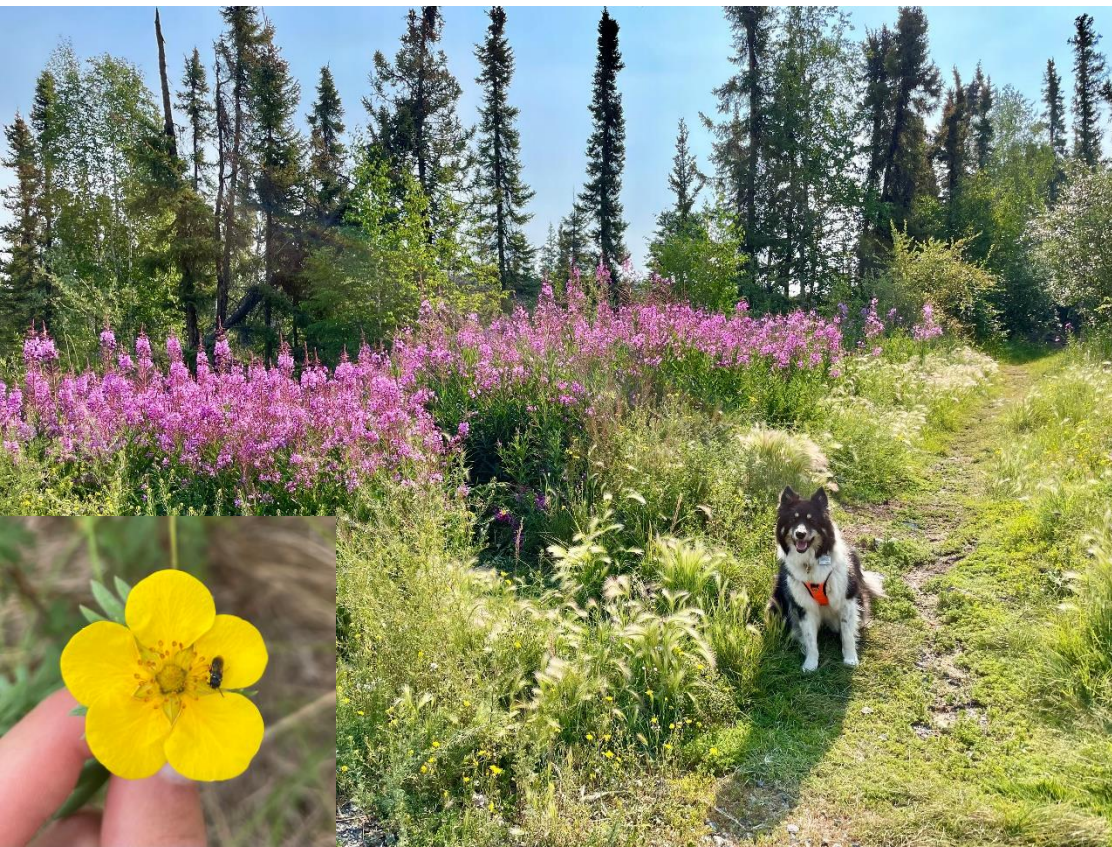
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Urban native plant patch (5 square metres) summer 2021 – 23 native plant species, reduced invasive species, all-season bloom, 19 different pollinator species identified! (Parkdale, Toronto, Canada)



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Monitoring for Pollinators!



Baseline

- current garden plans
- list of species of interest
- list of noxious, invasive
- **before and after photos**

What can we monitor?



PLANT SUCCESS



PLANT
ESTABLISHMENT



PUBLIC
IMPRESSIONS

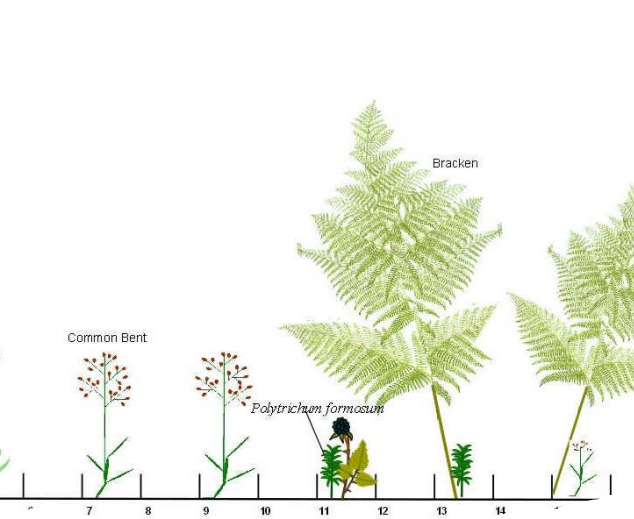
Species, Population, and Community Data



- occurrence, new records
- richness, abundance, diversity
- survivorship
- structure and composition

Species Lists and Surveys

- The easiest data to collect
- Add value by:
 - Repeating the sample over time
 - Frequency counts
 - Adding habitat associations



Landscape Survey Methods

Transects and quadrats

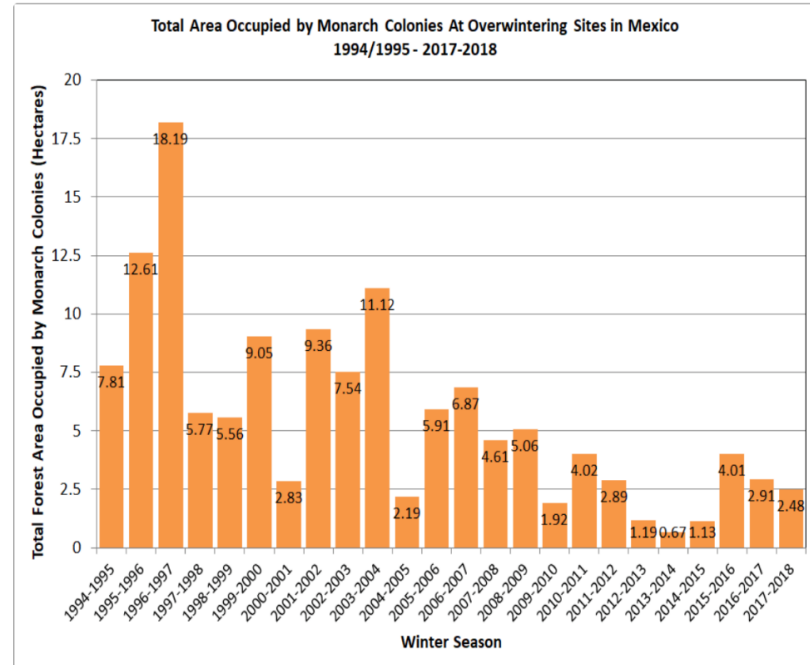
Lists and distribution

Species presence, dominance, frequency, density

Long Term Data: Monarch Butterfly Overwintering Counts

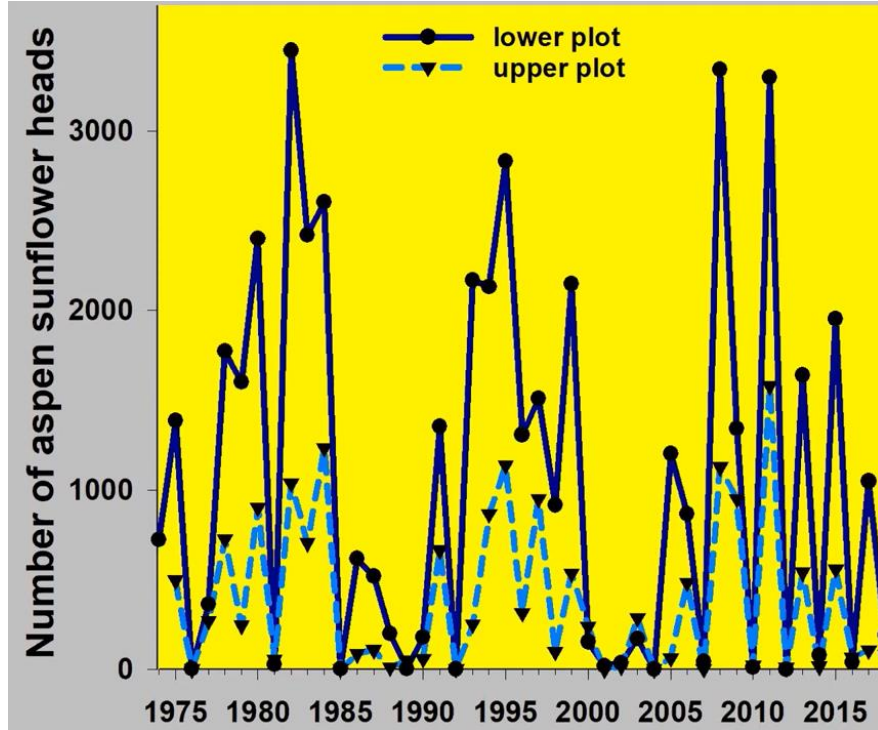


[This Photo](#) by Unknown Author is licensed under [CC BY](#)

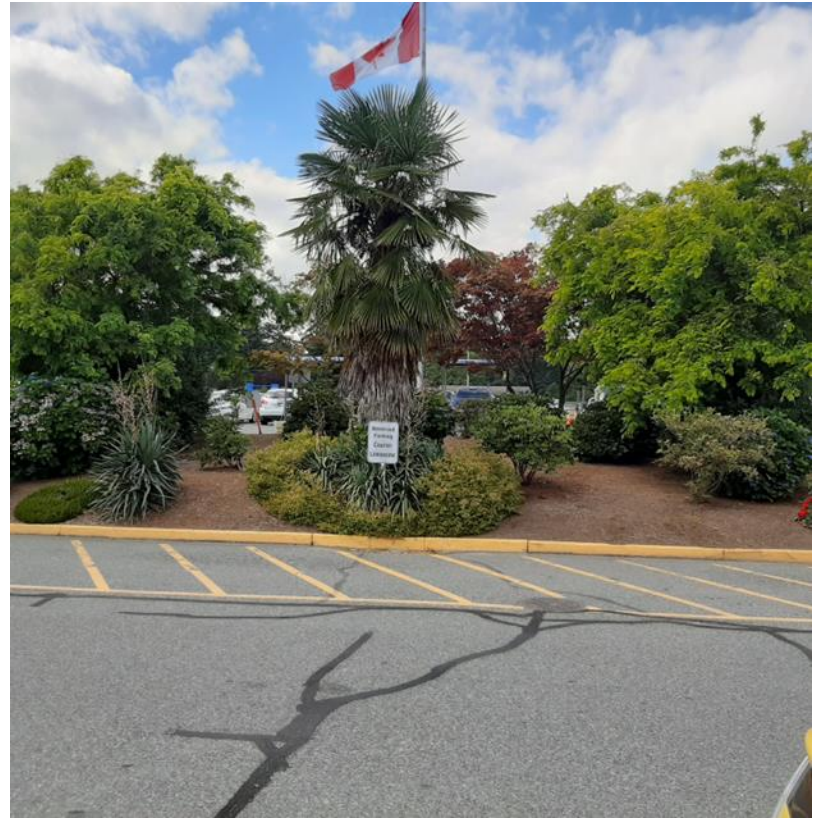


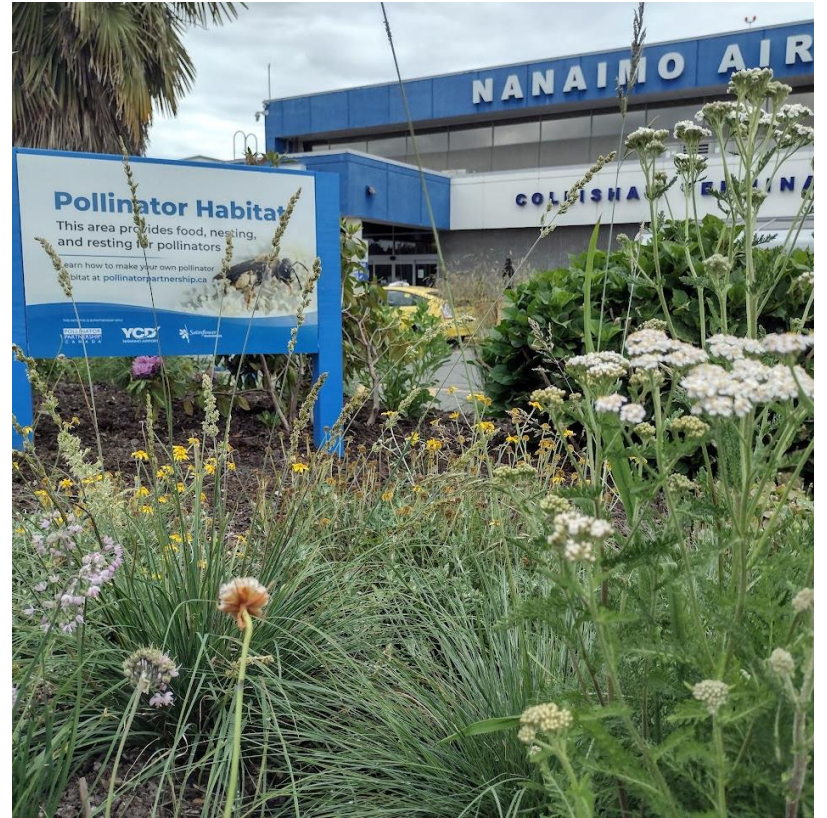
Data from 1994-2003 were collected by personnel of the Monarch Butterfly Biosphere Reserve (MBBR) of the National Commission of Protected Natural Areas (CONANP) in Mexico. Data from 2004-2018 were collected by the WWF-Telcel Alliance, in coordination with the Directorate of the MBBR. 2000-01 population number as reported by Garcia-Serrano et. al (The Monarch Butterfly : Biology and Conservation, 2004)

Long Term Data: Sunflowers and Frost

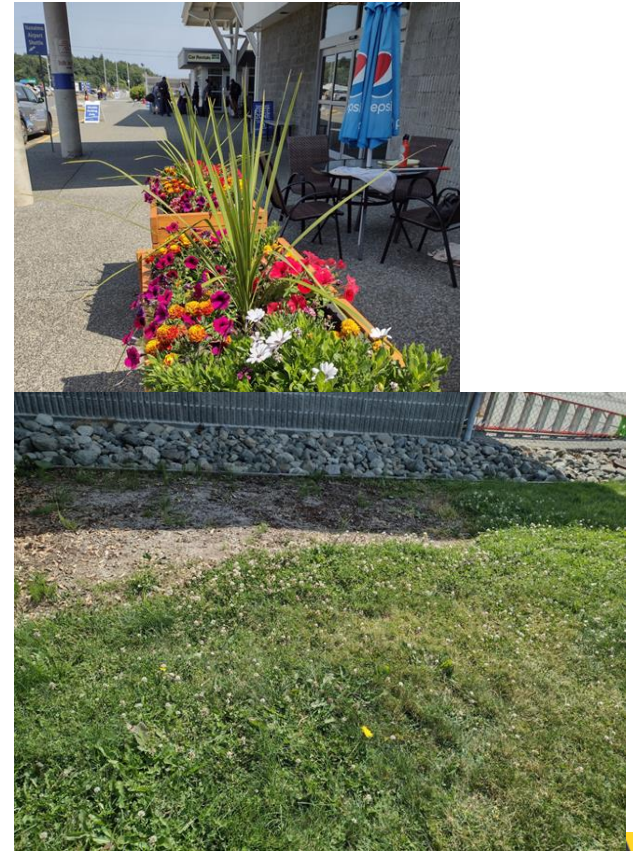
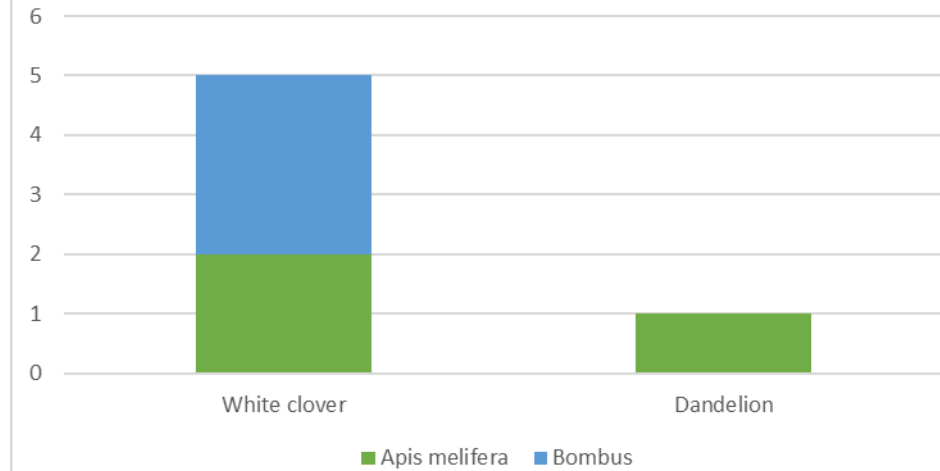


Courtesy of David Inouye and the Rocky Mountain Biological Lab

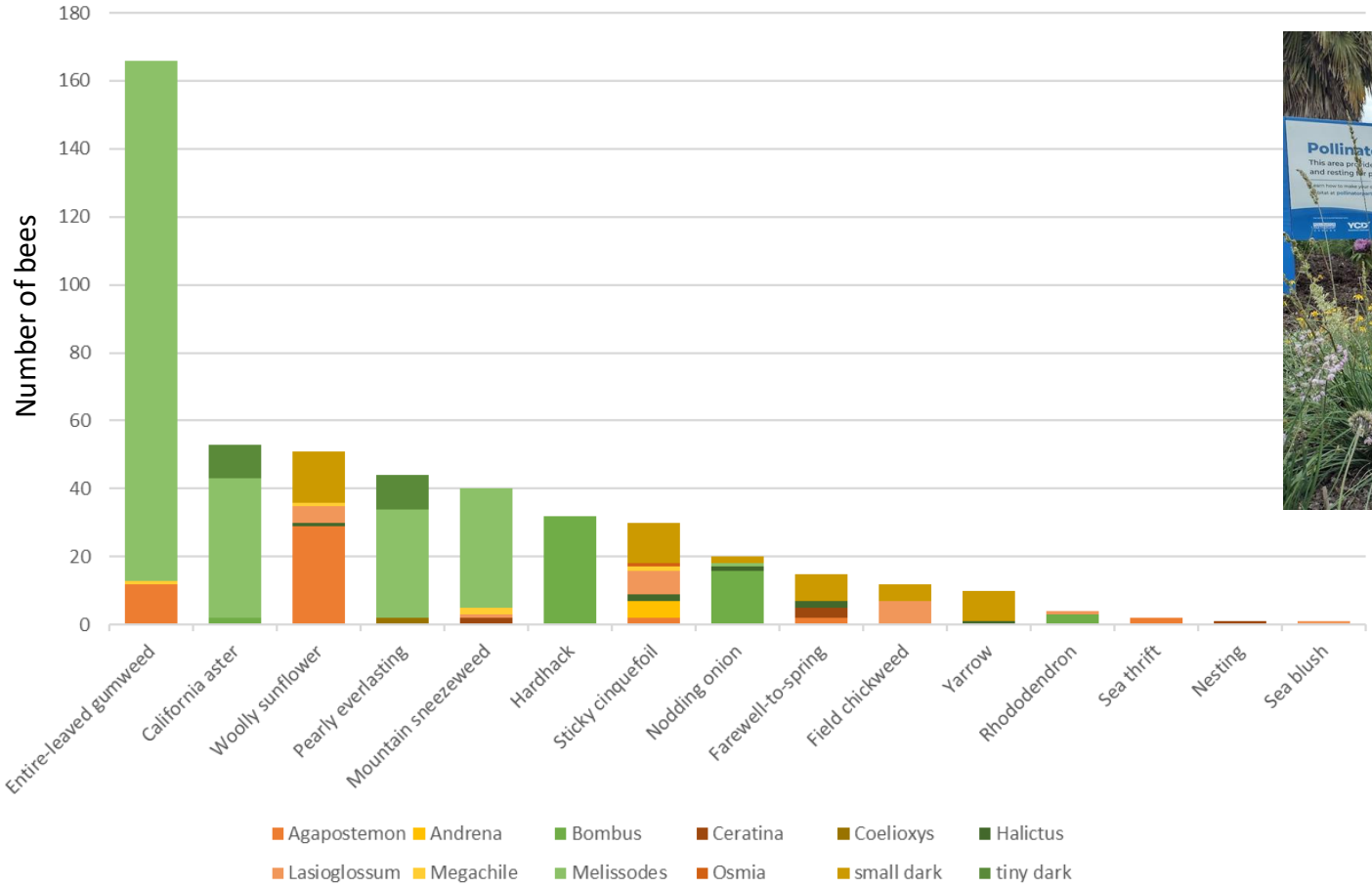




Bees Nanaimo Airport Ornamental Gardens 2023



Native Bees Nanaimo Airport Pollinator Garden 2023



Community Science Programs

iNaturalist



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Ashutosh Shinde - Mantid from Thane, India

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ACADEMY OF
SCIENCES



NATIONAL
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iNaturalist is a joint initiative of the
California Academy of Sciences and the
National Geographic Society.

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**Common Flower Flies***(Genus Syrphus)*

2

© Sep '24

**Northern Amber Bumble Bee***(Bombus borealis)*

2

© Aug '24

**Genus *Lasioglossum***

2

© Aug '24

**Subgenus Hylaeus**

2

© Aug '24

**Perplexing Bumble Bee***(Bombus perplexus)*

2

© Aug '24

**Yellow-banded Bumble Bee***(Bombus terricola)*

2

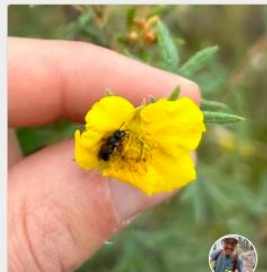
© Aug '24

**Cryptic Bumble Bee***(Bombus cryptarum)*

7

2

© Aug '24

**Subgenus Hylaeus**

2

© Aug '24



545
OBSERVATIONS

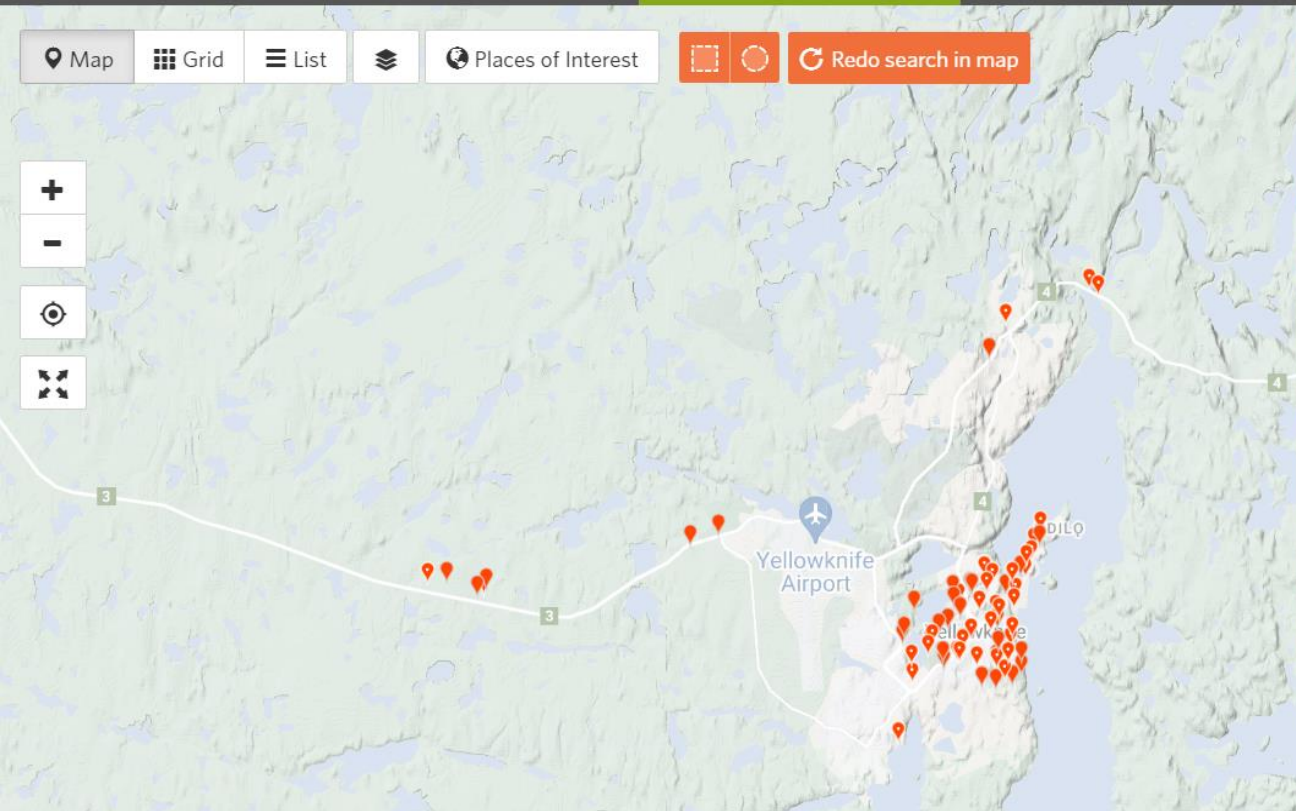
44
SPECIES

33
IDENTIFIERS

1
OBSERVER

Map Grid List Places of Interest

Redo search in map



Western Honey Bee
(*Apis mellifera*)
Anson Dr, Yellowkn... • Aug 12, 2023



Research Grade 3 3mo

Perplexing Bumble Bee
(*Bombus perplexus*)
Wiley Rd, Yellowkn... • Aug 14, 2023



Research Grade 3 3mo

Western Honey Bee
(*Apis mellifera*)
Anderson Thompson... • Aug 9, 2023



Research Grade 3 3mo

Perplexing Bumble Bee
(*Bombus perplexus*)
Anderson Thompson... • Aug 9, 2023



Research Grade 2 3mo

Yellow-banded Bumble Bee
(*Bombus terricola*)





Perplexing Bumble Bee
(*Bombus perplexus*)



Frigid Bumble Bee
(*Bombus frigidus*)



Yellow-Banded Bumble Bee
(*Bombus terricola*)



Mining Bees
(Genus *Andrena*)



Masked Bees
(Genus *Hylaeus*)



Mason Bees
(Genus *Osmia*)



Cryptic Bumble Bee
(*Bombus cryptarum*)



Fuzzy-Horned Bumble Bee
(*Bombus mixtus*)



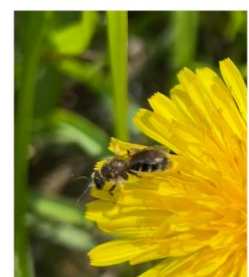
Heath Bumble Bee
(*Bombus jonellus*)



Cellophane Bees
(Genus *Colletes*)



Leafcutter Bees
(Genus *Megachile*)



Sweat Bees
(Genus *Halictus*)



Orange-Rumped Bumble Bee
(*Bombus melanopygus*)



Yellow-Fronted Bumble Bee
(*Bombus flavifrons*)



Yellowish Cuckoo Bumble Bee
(*Bombus flavidus*)



Bumble Bee-Like Digger Bees
(*Anthophora bomboides*)



**Orange-Legged
Drone Fly**

(Eristalis flavipes)



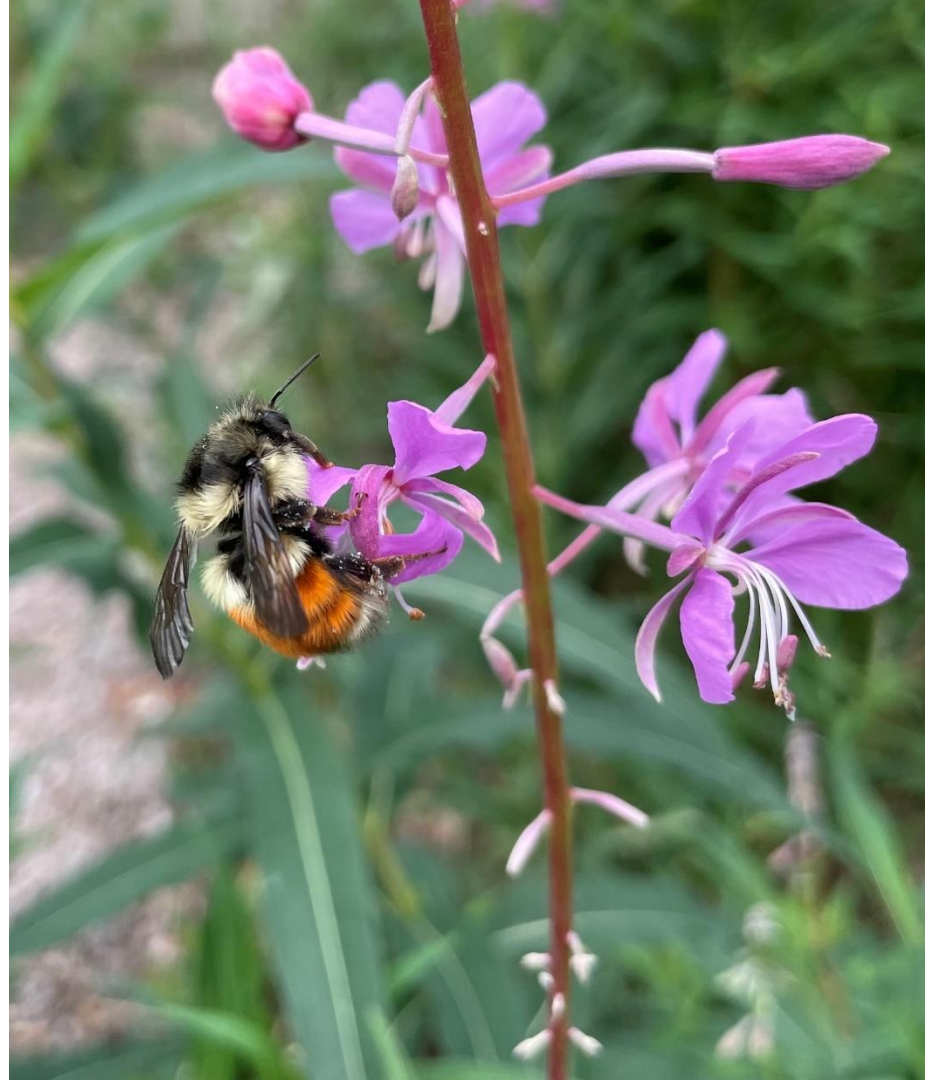
Golden-Belted Bumble Bee

(Bombus kirbiellus)



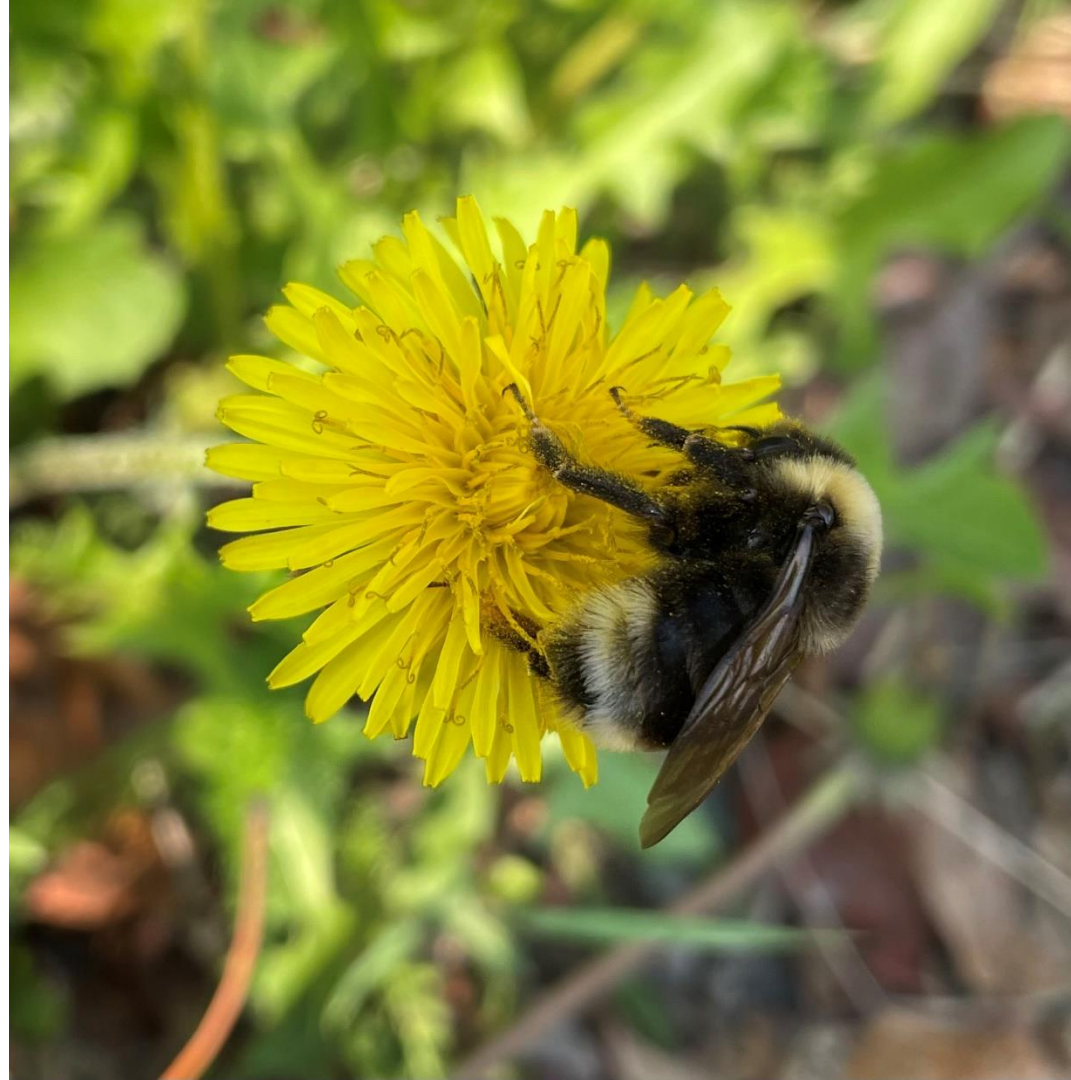
Orange-Rumped Bumble Bee

(Bombus melanopygus)



**Ashton's Cuckoo
Bumble Bee**

(Bombus ashtoni)





Showy Locoweed
(*Oxytropis splendins*)



Fireweed (*Chamaenerion angustifolium*)



Bumble Bees Observed

Perplexing Bumble Bee (*Bombus perplexus*)
Frigid Bumble Bee (*Bombus frigidus*)
Yellow-Banded Bumble Bee (*Bombus terricola*)
Cryptic Bumble Bee (*Bombus cryptarum*)
Fuzzy-Horned Bumble Bee (*Bombus mixtus*)
Heath Bumble Bee (*Bombus Jonellus*)
Orange-Rumped Bumble Bee (*Bombus melanopygus*)
Yellow-Fronted Bumble Bee (*Bombus flavifrons*)
Yellowish Cuckoo Bumble Bee (*Bombus flavidus*)

Other Bees Observed

Masked Bee (Genus *Hylaeus*)
Bumble Bee-like Digger Bee (*Anthophora bomboides*)
Leafcutter Bees (Genus *Megachile*)

Other Pollinators Observed

Orange-Legged Drone Fly (*Eristalis flavipes*)
Hummingbird Clearwing Moth (*Hemaris thysbe*)
Northern Aerial Yellowjacket (*Dolichovespula norvegicoic*)

Prickly Wild Rose (*Rosa acicularis*)



Bumble Bees Observed

Perplexing Bumble Bee (*Bombus perplexus*)
Frigid Bumble Bee (*Bombus frigidus*)
Yellow-Banded Bumble Bee (*Bombus terricola*)
Cryptic Bumble Bee (*Bombus cryptarum*)
Fuzzy-Horned Bumble Bee (*Bombus mixtus*)
Yellow-Fronted Bumble Bee (*Bombus flavifrons*)

Other Bees Observed

Mining Bees (Genus *Andrena*)
Leafcutter Bees (Genus *Megachile*)

Other Pollinators Observed

Orange-Legged Drone Fly (*Eristalis flavipes*)
Dusky Drone Fly (*Eristalis obscura*)
Orange-Spined Drone Fly (*Eristalis nemorum*)

Shrubby Cinquefoil (*Dasiphora fruticosa*)



Bumble Bees Observed

Perplexing Bumble Bee (*Bombus perplexus*)
Frigid Bumble Bee (*Bombus frigidus*)
Yellow-Banded Bumble Bee (*Bombus terricola*)
Cryptic Bumble Bee (*Bombus cryptarum*)
Fuzzy-Horned Bumble Bee (*Bombus mixtus*)
Heath Bumble Bee (*Bombus Jonellus*)

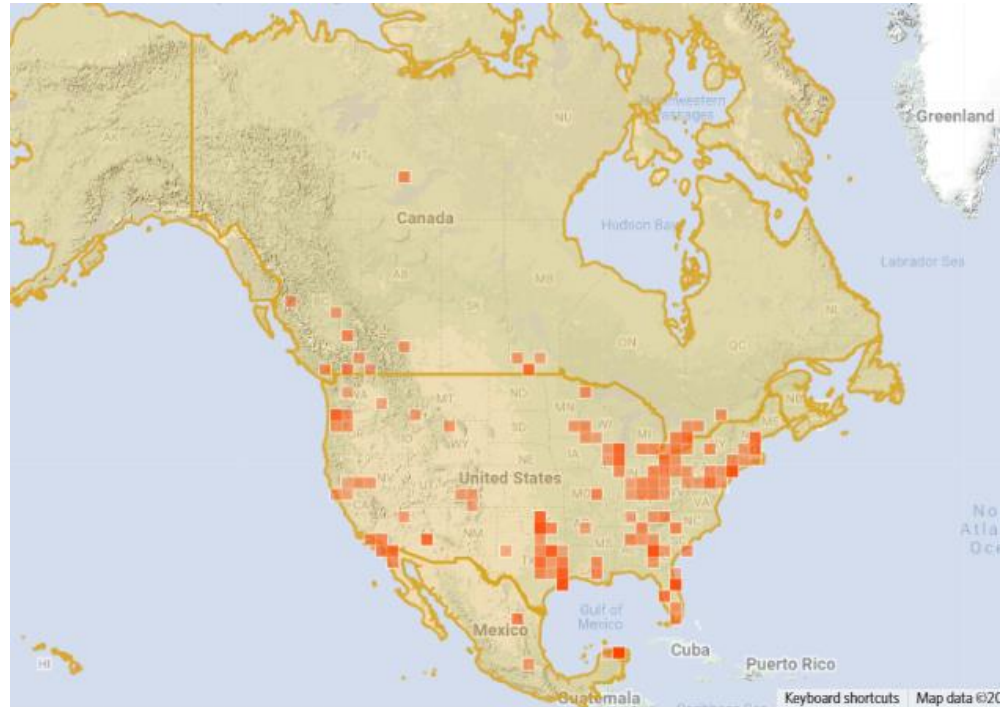
Other Bees Observed

Mining Bees (Genus *Andrena*)
Masked Bee (Genus *Hylaeus*)
Leafcutter Bees (Genus *Megachile*)

Other Pollinators Observed

Dusky Drone Fly (*Eristalis obscura*)
Orange-Spotted Drone Fly (*Eristalis anthophorina*)

Pollinator Week Bioblitz



Community Science Programs

Bumble Bee Watch

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1

Welcome to Bumble Bee Watch!

2

*The yellow faced bumble bee (*Bombus vosnesenskii*) on arrowleaf balsamroot. Photo by Rich Hatfield.*

3

4

5

6

7



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Community Monitoring Programs

- <https://www.bumblebeewatch.org/>
- iNaturalist – regional databases, project specific monitoring, checked by other local experts
- www.ebird.org
- <https://www.e-butterfly.org/>
- <https://nationalmothweek.org/how-to-submit-data-2/>
- BAMONA - <https://www.butterfliesandmoths.org/>

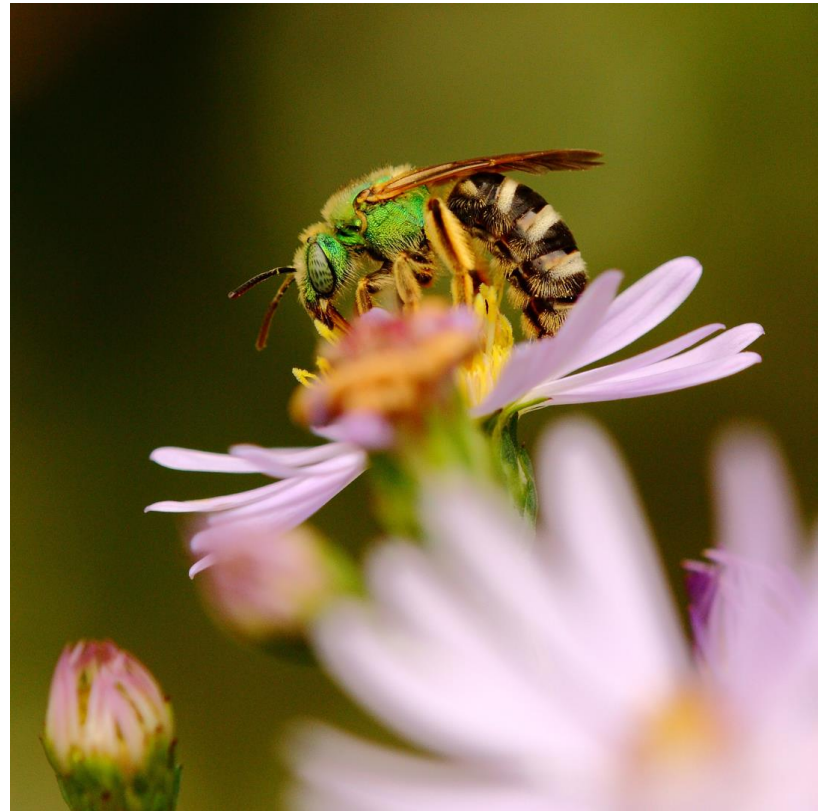


Wrap Up and Next Session:

- Recordings and resources will be shared on the Course Information page by next week.
- Tuesday, April 8th, 4 pm PST/7pm EST
 - Module 7: Expand Your Impact! This will be our final module.
 - More info on the Step 1 and Step 2 Forms will be discussed next week.



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