Creating Habitat for Pollinators

Pollinator Steward Training
2024

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Creating Habitat for Pollinators

- Review: co-evolution, how bees live
- Ways of creating habitat
- Habitat elements
- Regional considerations
- Habitat options/resources


STOP

Over 4,000 Native Bee Species in North America!




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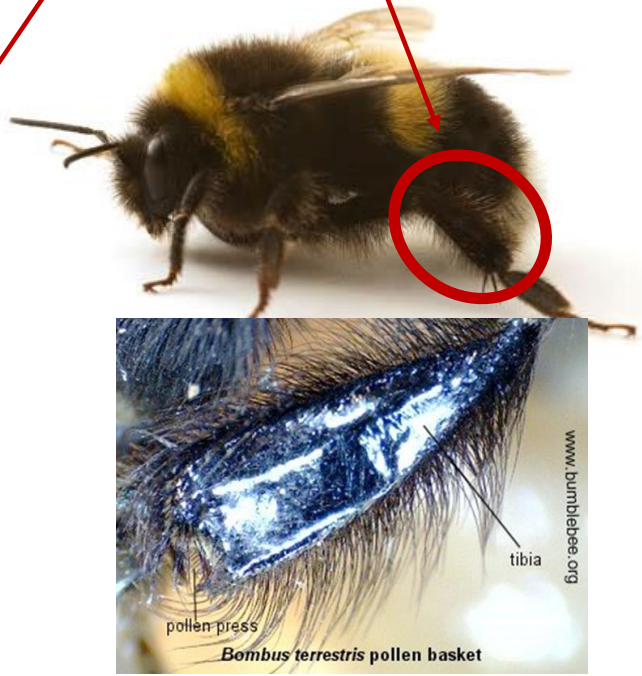
Pollen carrying hairs

Only bees have these grocery bags!



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Rabeling et al. 2013
Current Biology

Invasive species

Pesticides

Habitat loss

Parasites, Diseases

Climate change

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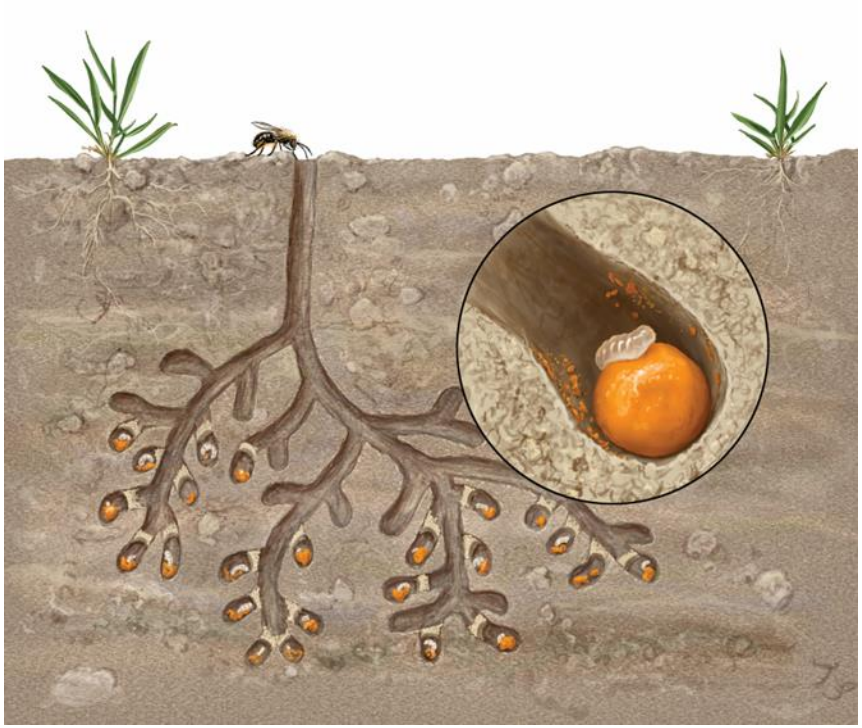
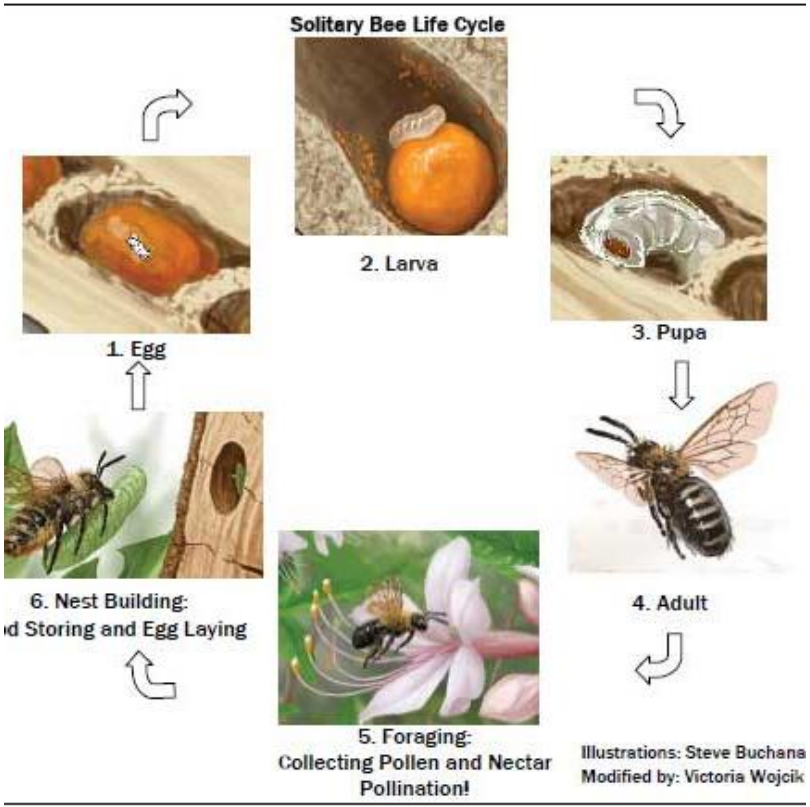
So, what can you do to help?

1. Habitat!
2. Outreach/education
3. Support conservation




Solitary Bee Life Cycle
1. Egg
2. Larva
3. Pupa
4. Adult
5. Foraging:
Collecting Pollen and Nectar
Pollination!
6. Nest Building:
d Storing and Egg Laying
Illustrations: Steve Buchana
Modified by: Victoria Wojcik

Habitat for Pollinators

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Habitat Elements

1. Nesting/overwinter habitat:

ground

scrubby/woody

cavity

2. Floral resources:

Native, non-invasive

Diverse

Continuous

Host

3. Pesticides:

no insecticides

limit others

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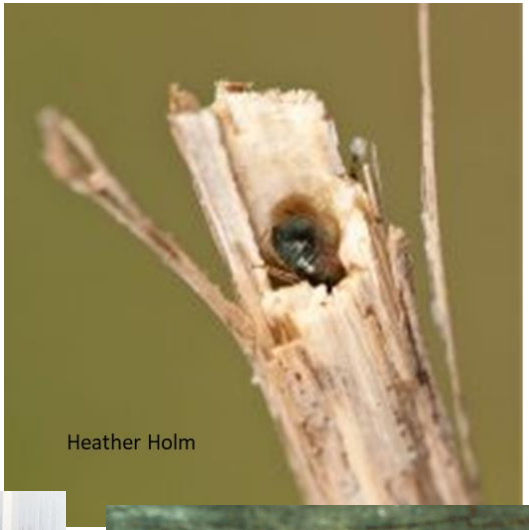
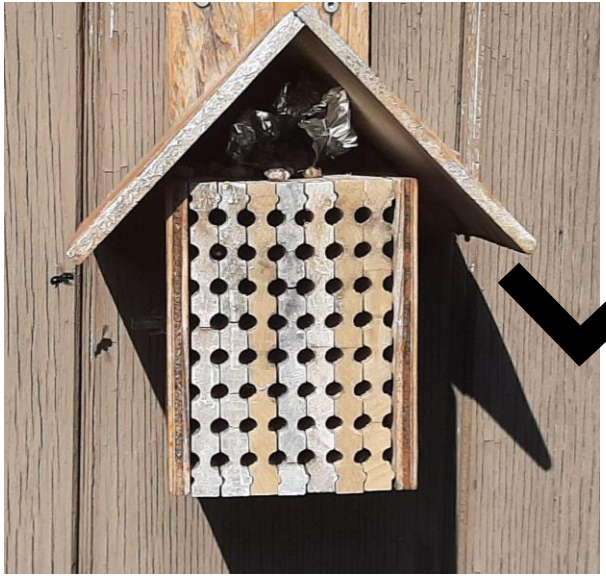
Don Keirstead

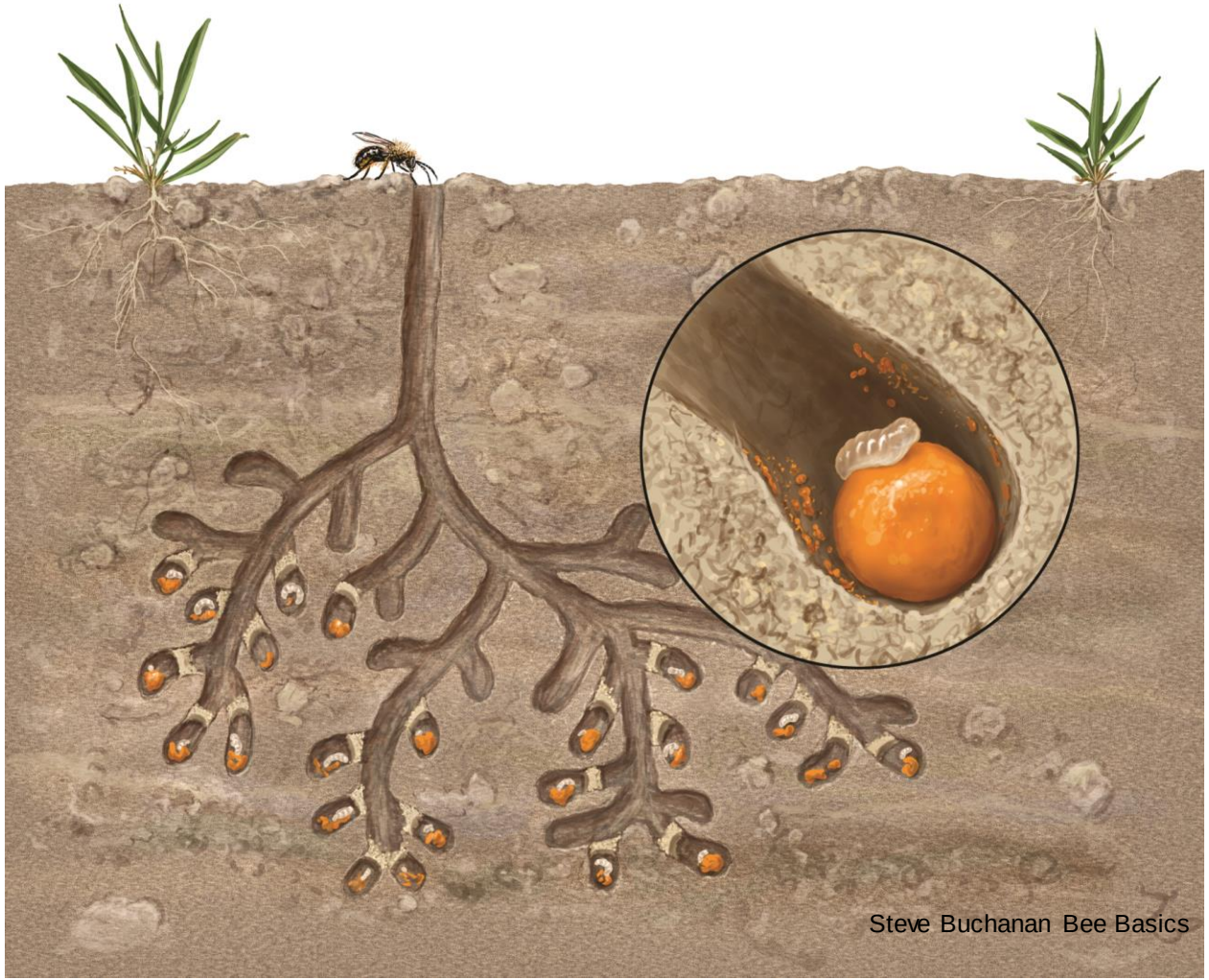

Heather Holm


M. J. Raupp



- Depth at least 15cm
- Width 8mm or less
- Secure
- CLEANABLE!

Bee Houses


Steve Buchanan Bee Basics


Matthew Shepherd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(c) Kathy Keatley Garvey

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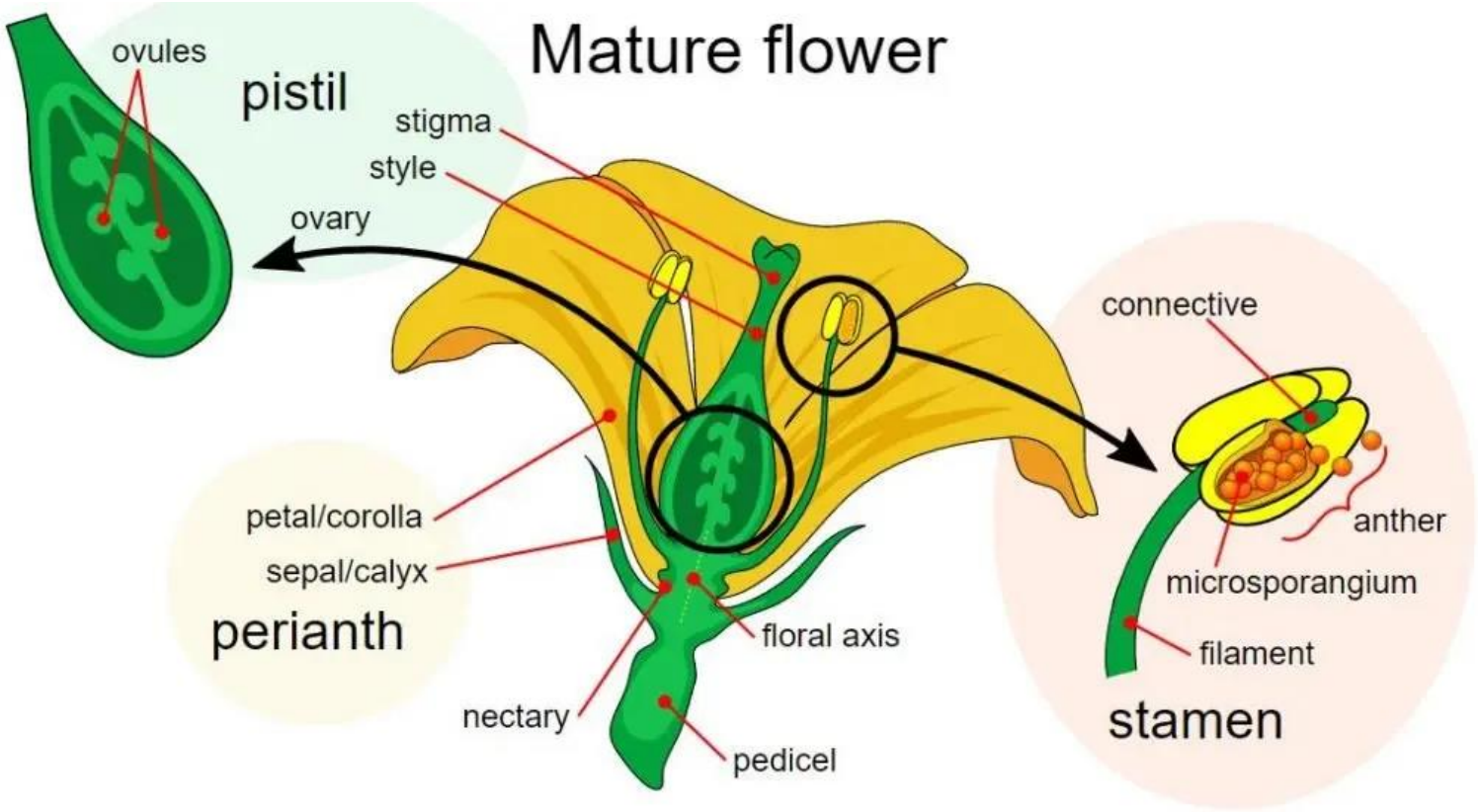

https://difference-between.com/science/nectar-and-pollen/

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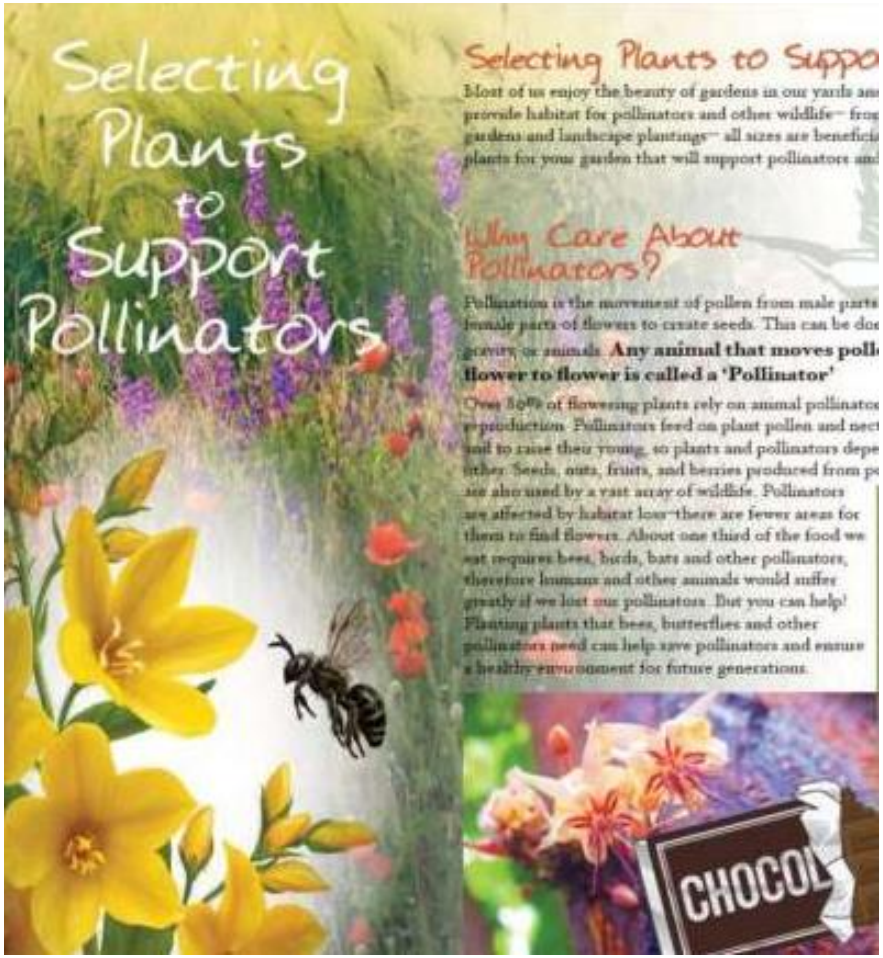

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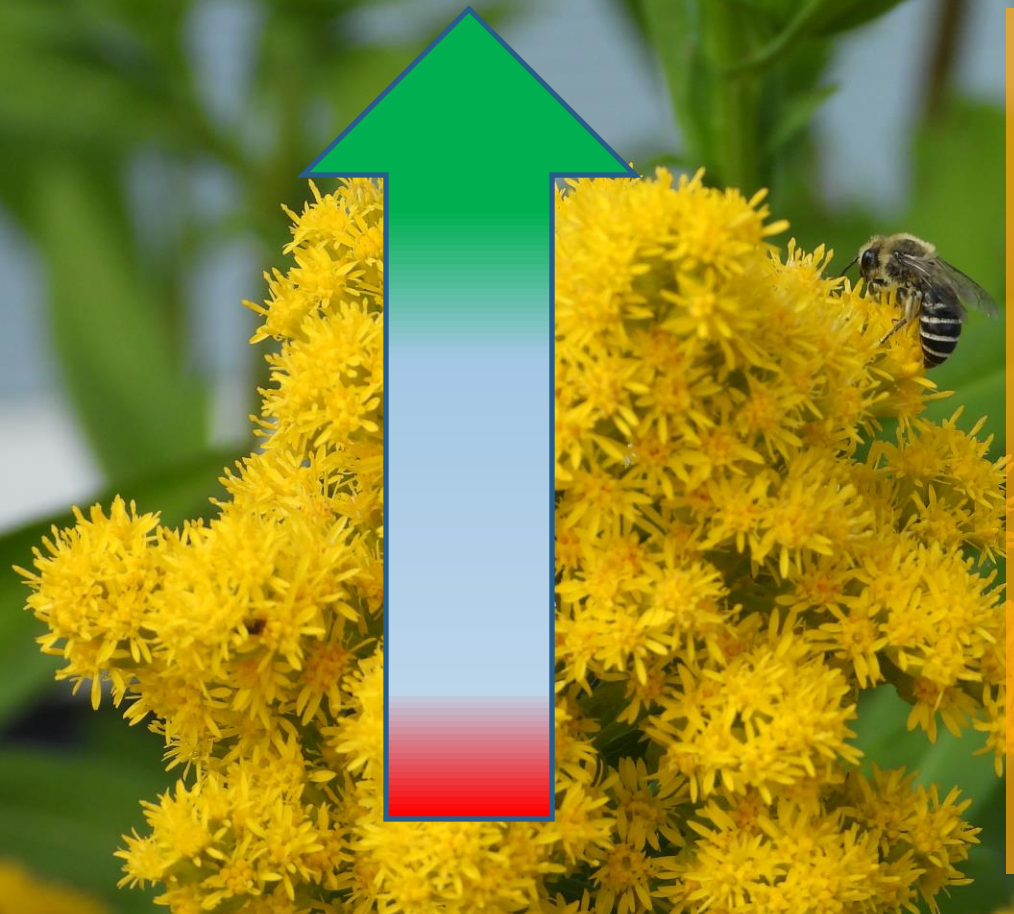
Plant Selection for Pollinator Support



Local natives

Natives

Non-natives

- Non-invasive
  - Forage plants
  - Bred ornamentals
- Invasive

Never plant invasive plants

Invasive can crowd out natives, reduce diversity

Remove if possible

Check pollinator seed mixes

Check your local Invasive Species Council

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Check your local Invasive Species Council

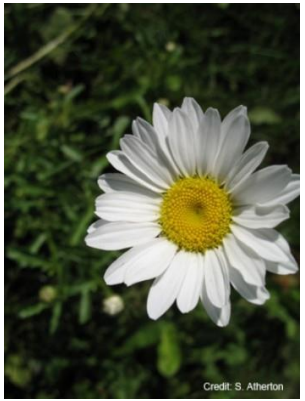
Search online for plants that are invasive in your region (these are invasive in BC)

Common periwinkle

Bachelor's buttons

Queen Anne's lace

Butterfly bush



Oxeye daisy

Yellow archangel

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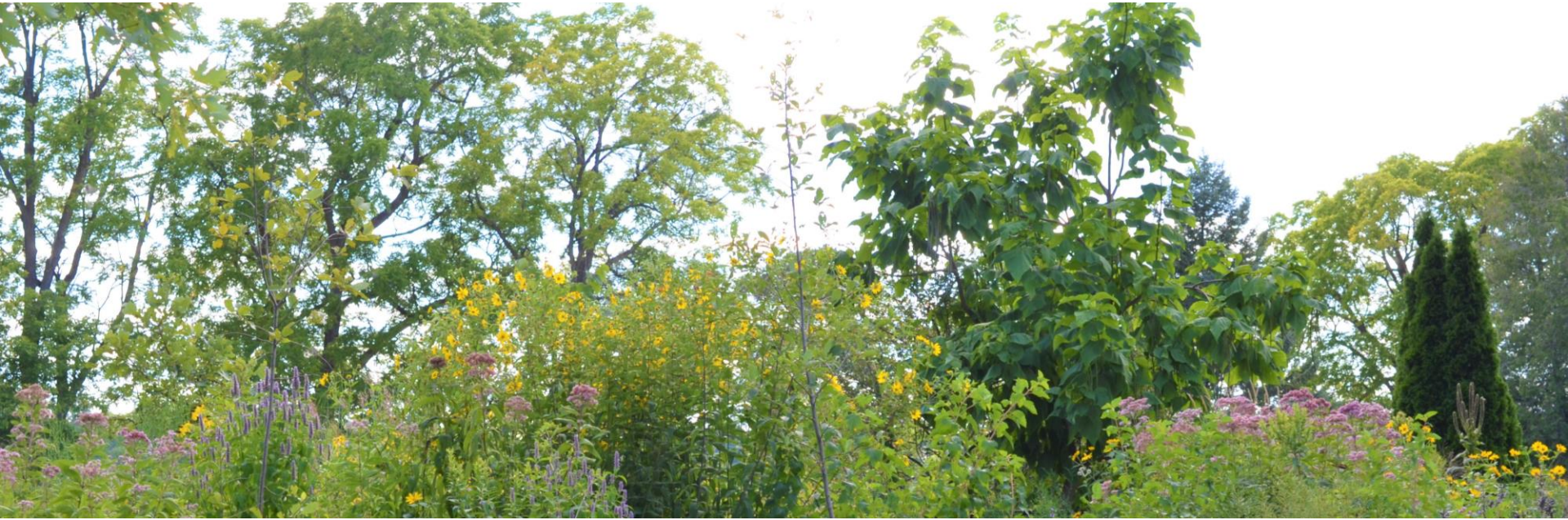
Why use Native Plants?

- Help restore biological diversity (plants, wildlife etc.)
- Provide the best nutrition for native pollinators
- Promote respect for and support unique habitats in your region
- Promote respect for Indigenous Peoples and culture
- Increase effective size of surrounding habitat
- Teach us about nature
- Benefit future generations
- Reduce water usage, fertilizers, chemical pesticides, power mowers (noise, fuel, pollution)

Non-natives, non-invasive



Plant diversity (structural, bloom time)

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Flower Traits	 Bees, wasps	 Beetles	 Butterflies	 Moths	 Flower flies	 Filth flies
Color	White, yellow, blue, ultraviolet	White, green	Bright red, purple	Red, purple, pink, white	white, yellow, ultraviolet	Pale, dark brown, purple
Nectar guides	Present	None	Present	None	Present	None
Odor	fresh, mild, pleasant	None, strongly fruity, or foul	Faint but fresh	Strong, sweet; most at night	Fresh, mild, pleasant	Putrid
Nectar	usually present	Sometimes present	Ample; deeply hidden	ample;; deeply hidden	Usually present	Usually absent
Pollen	Limited; often sticky, scented	Ample	Limited	Limited	Limited, often sticky, scented	Modest
Shape	Shallow, with landing platform; tubular	Large, bowl-shaped	Narrow tube with spur; wide landing pad	Regular; tubular without a tip	Shallow, with landing platform	Shallow, funnel-like, or complex with trap

Adapted from USDA-FS https://www.fs.fed.us/wildflowers/pollinators/What_is_pollination/syndromes.shtml

Pollination Syndromes

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Succession

Successive blooms provide continuous floral resources

February → **June**


June Plum


Satinflower


Sea Blush


Common Camas


Woolly Sunflower

July → **October**


Farewell-to-Spring


Douglas' Aster


Canada Goldenrod


Entire-leaved Gumweed


Yampah

Photos curtesy K. Miskelly






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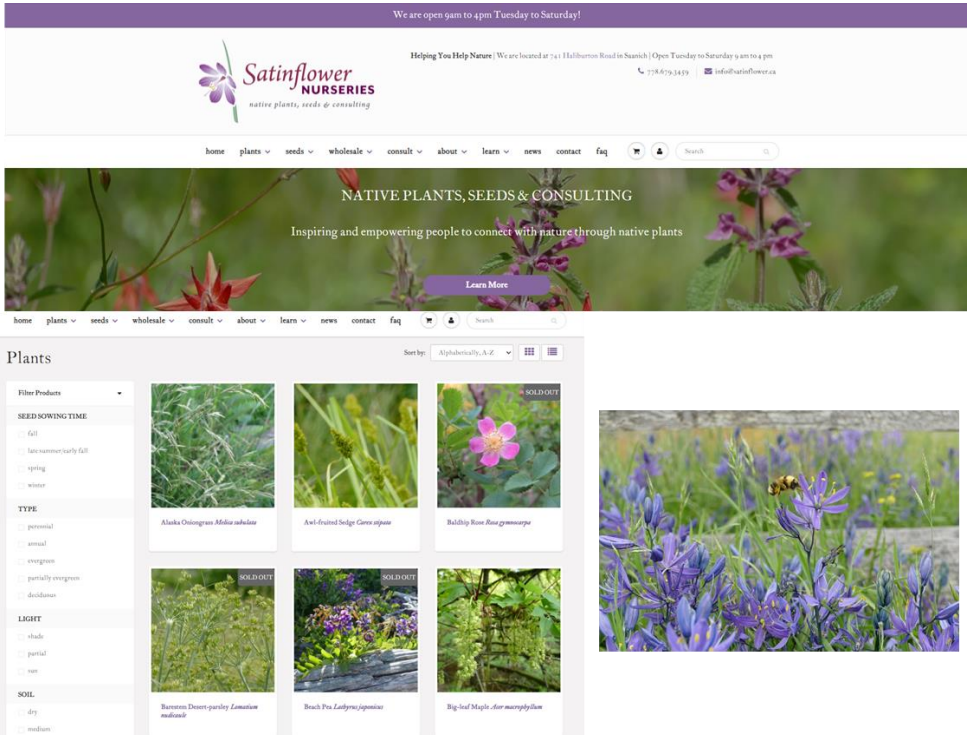
Plant material

ANNUALS	PERENNIALS
Whole plant dies at the end of the growing season	Some vegetative parts survive and grow year to year (above ground– trees, shrubs, vines; herbaceous below ground roots, bulbs, corms)
Reproduce from seed	Can reproduce from seeds too
Need bare ground for seed to germinate	From seed take 1-2 years min to bloom
Flower in first year from seed (stratification)	From plugs/pots will flower right away
Seeds primarily, also plugs	

Plant material

SEEDS	PLUGS/POTS
Less expensive than plants	More expensive (increasing with size)
Cover larger areas	Immediate bloom
Full coverage areas	Precise placement options
Filling in around plants	Can take some time to fill in space
Timing critical	Larger planting window if water available



How do I find native pollinator plants?

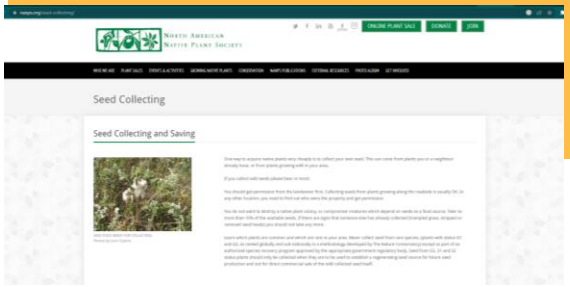
- google local native nurseries
- look for native plants at regular plant stores (ask for native pollinator plants!)
- online vetted distributor (e.g. Stover Seed)

Other options

Plant/seed swap with other native plant enthusiasts from your own gardens (and communities)

Larger public/private lands: Harvest and clean seed

Salvage plants development areas



WATCH PROJECT PROTOCOL OVERVIEW WEBINAR:

Habitat Elements

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2. Floral resources:

Native, non-invasive

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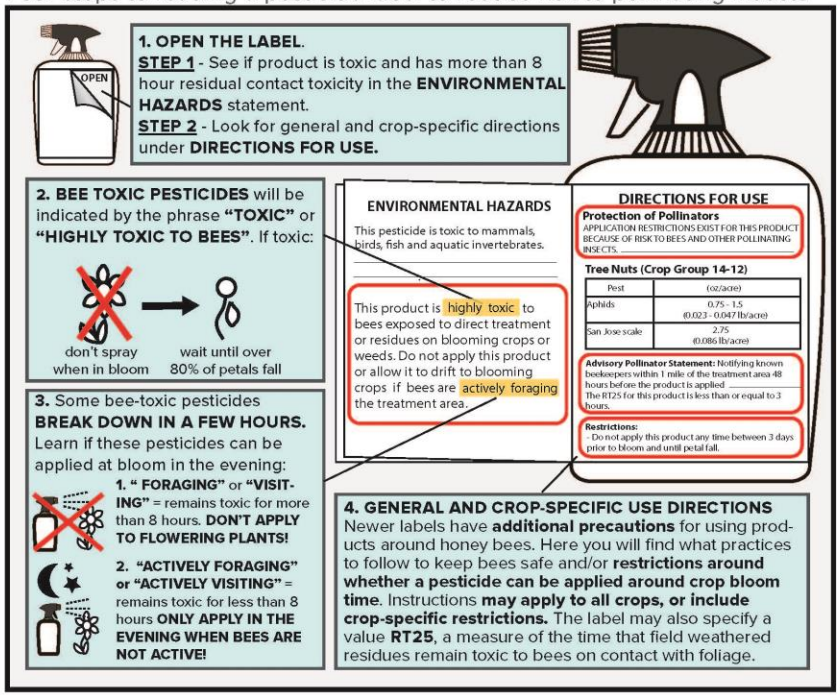
limit others

PROTECT POLLINATORS
READ PESTICIDE LABELS

NAPPC

Four steps to reading a pesticide label to reduce risk to pollinating insects



www.pollinator.org/pesticide-education

Graphic by Iris Kormann and Andony Melathopoulos - Oregon State University; Rose Kachadoorian and Gilbert Uribe - Oregon Department of Agriculture
Text on reverse of card by the NAPPC Pollinator Health Task Force

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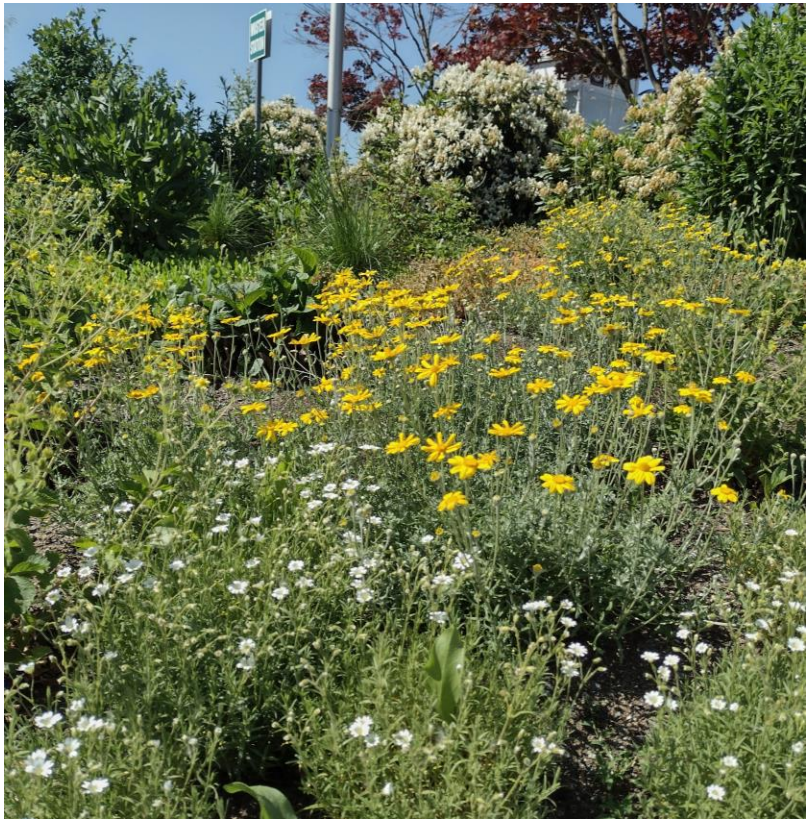
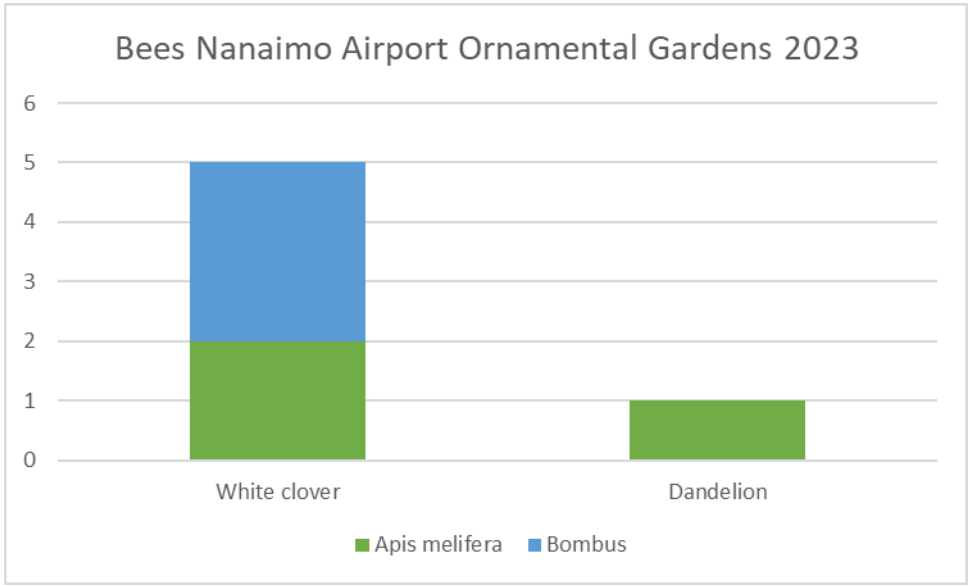
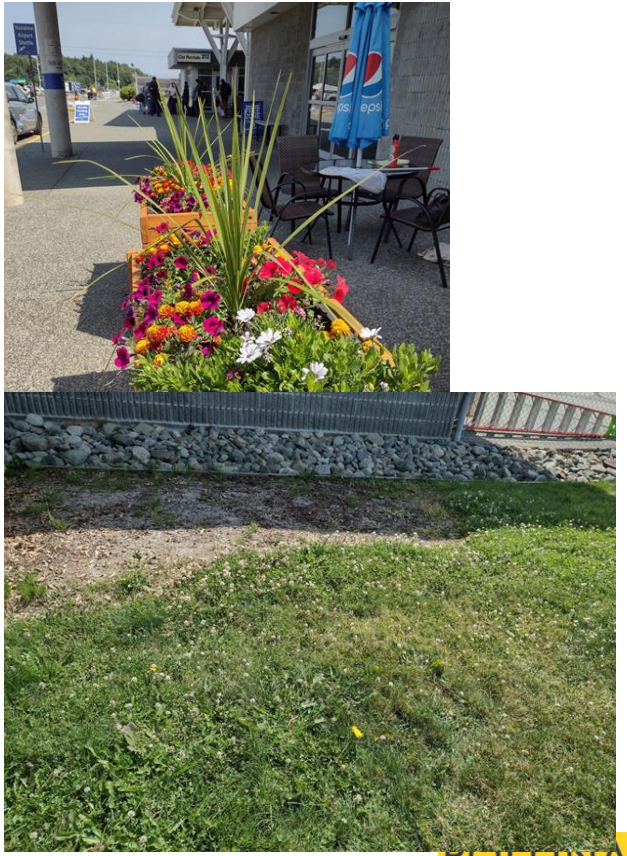



NANAIMO AIR
Pollinator Habitat
This area provides food, nesting,
and resting for pollinators
earn how to make your own pollinator
bitat at pollinatorpartnership.ca
YCD





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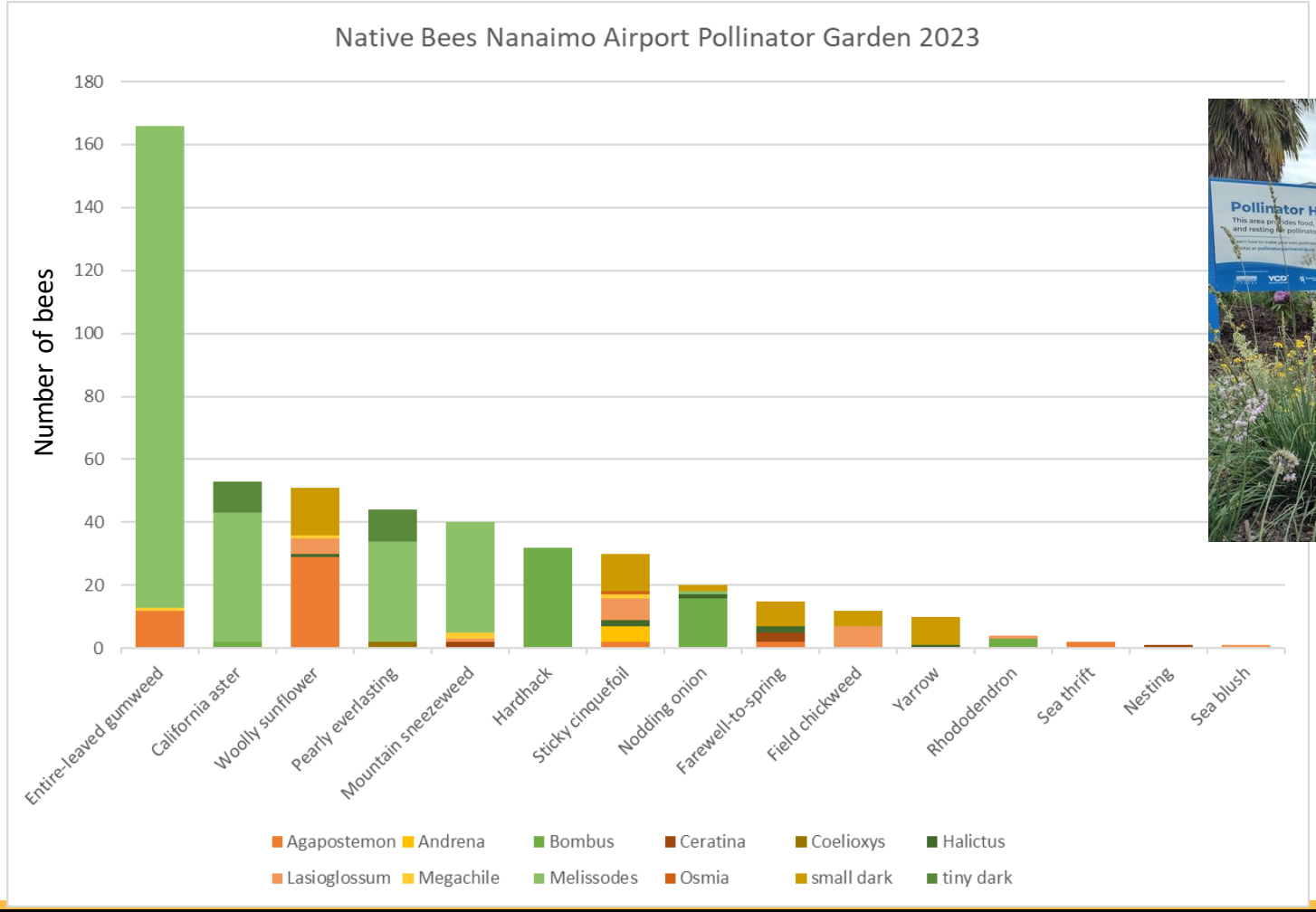

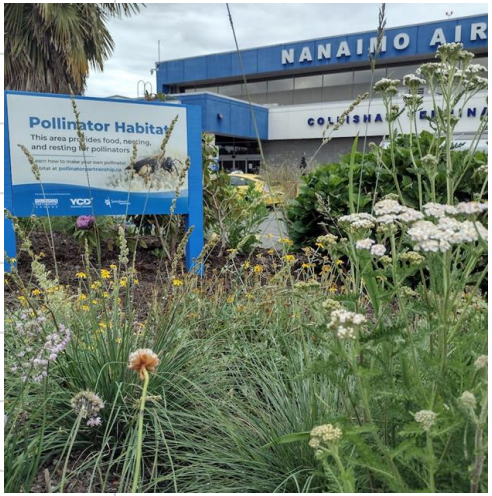

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Peninsula Streams

Satinflower NURSERIES
native plants, seeds & consulting

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Finger Tip Nails and Esthetic Studio
Lake Hill Elementary
BC Taxi Assn
Hajee Cleaning Services
West Coast Zenthai - Massage & Acupuncture
Galey Farms
Chicken Hut
T-Bone Construction
Ambassador Park
Lakehill Baseball And Fastball Association
Mt Douglas Cross Rd
Gur Kirpa Developments
Checked in Victoria Vacations
Bicycle Repair Station
Balance Home Cleaning
Don Mann Excavating Ltd
Green Image Lawn and Garden
JEMPOY'S LECHON
Trail Parking
Tripp Station Bike Park
George Trino Substation
Tufturf.ca
Maria's Aesthetic Studio
Lazaro Landscaping
Camping in A Can
GS Driving School
Century Park
Hien's Auto Repair
The Root Cellar Village Green Grocer
Feltham Park
The Cumberland road little free library
Braefoot Park Centre
O'Callaghan Exteriors Ltd
ICBC Driver Licensing
De Dutch
Camas Park
Logan Accounting
École Beausoleil
Subway
Kelly Asian SPA
Esso
TD Canada Trust Branch and ATM
984 McKenzie Apartments
Braefoot Park
Braefoot Elementary School
BCLIQUOR Saanich
PhysioCare At Home - Victoria
Arabic Translation & Interpretation Services
White Spot Saanich (Quadra)
Annie Park
Reynolds Secondary School
Enroot Canada Visa and Immigration
Synergy Health Centre
Proton Driving School
Glamour Eyebrow Threading Salon
Falcon Works Plumbing

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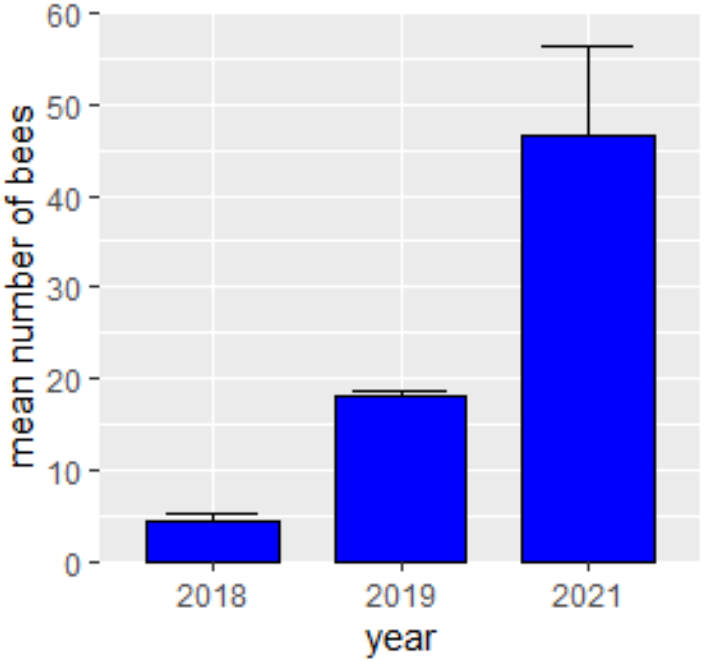

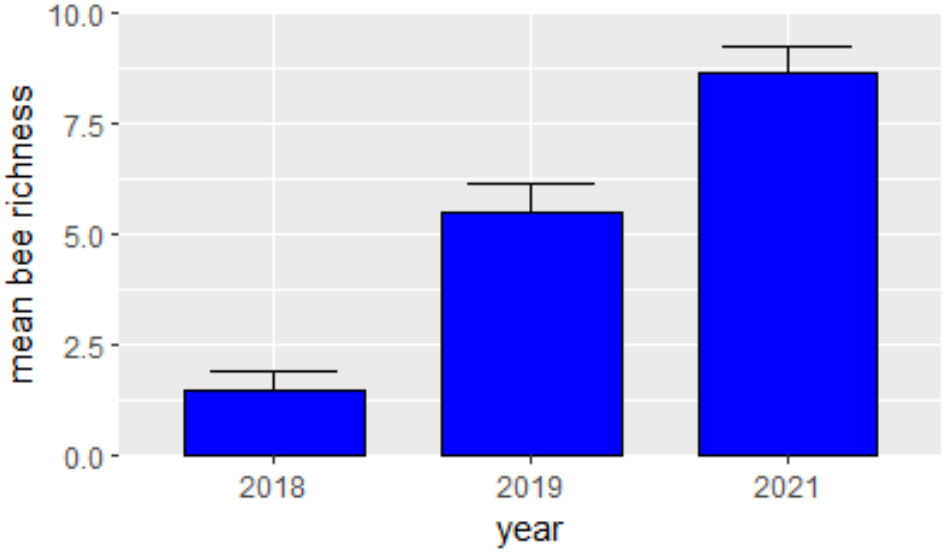

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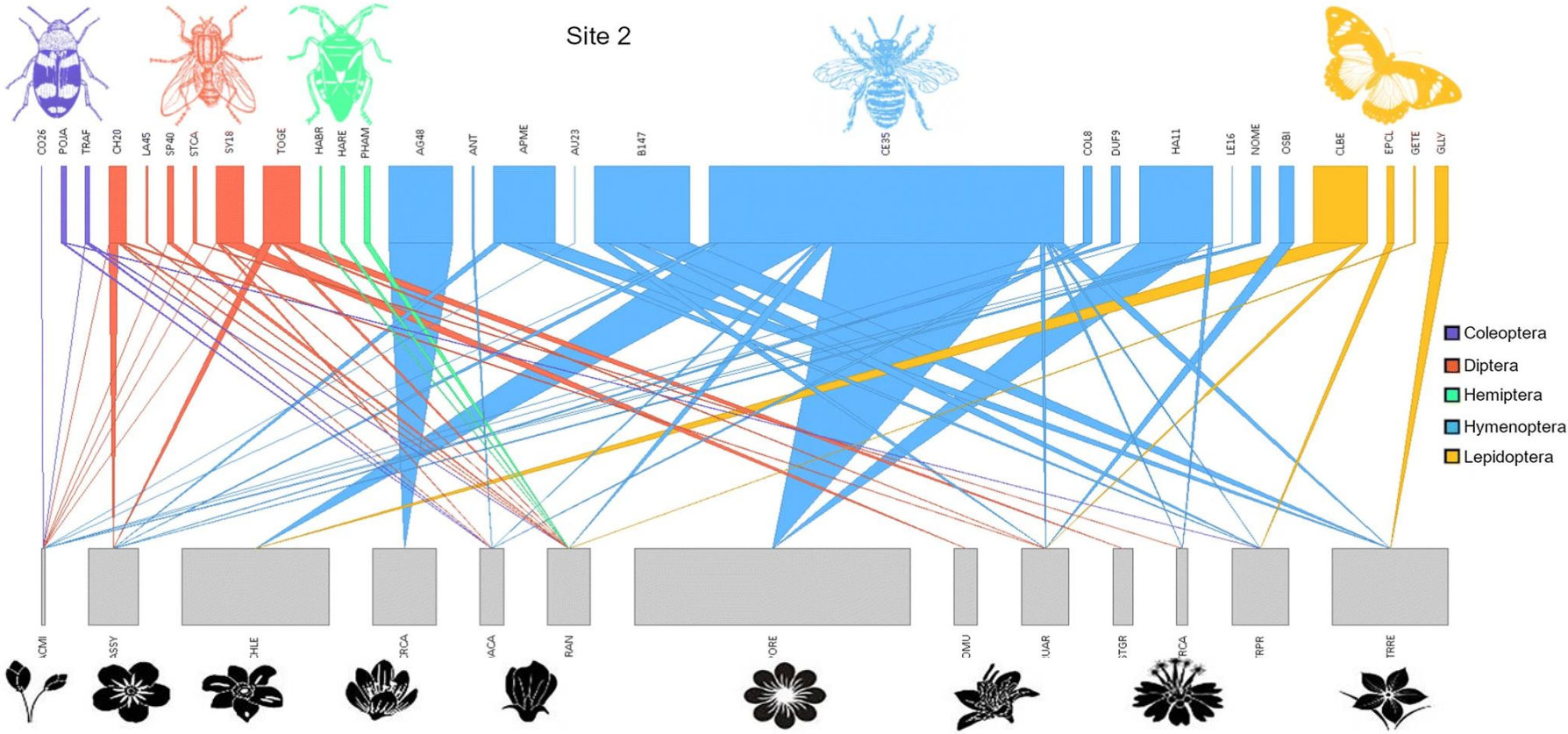
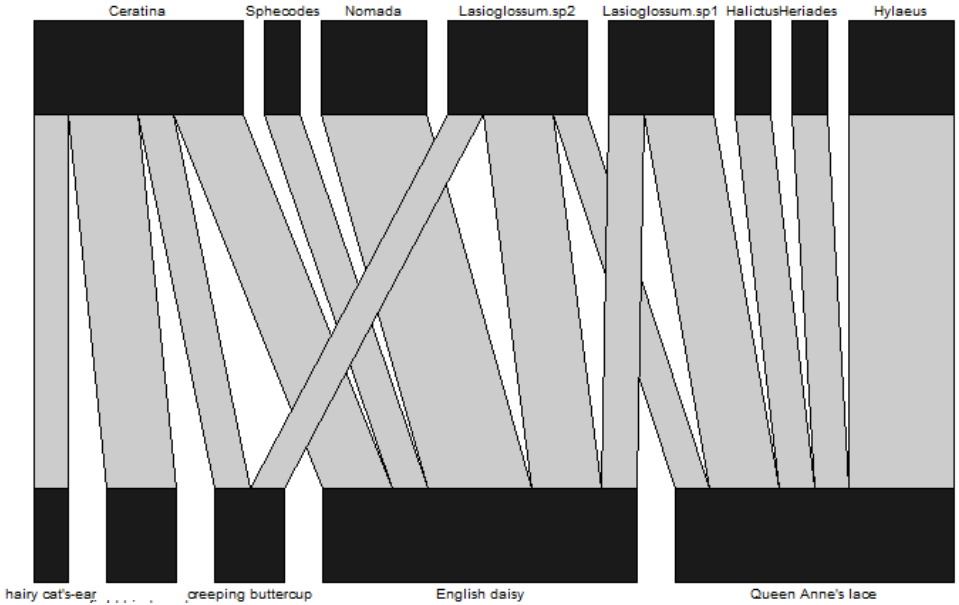


Arceo-Gómez, G., Barker, D., Stanley, A. et al. Plant–pollinator netw ork structural properties differentially affect pollen transfer dynamics and pollination success. Oecologia 192, 1037–1045 (2020)



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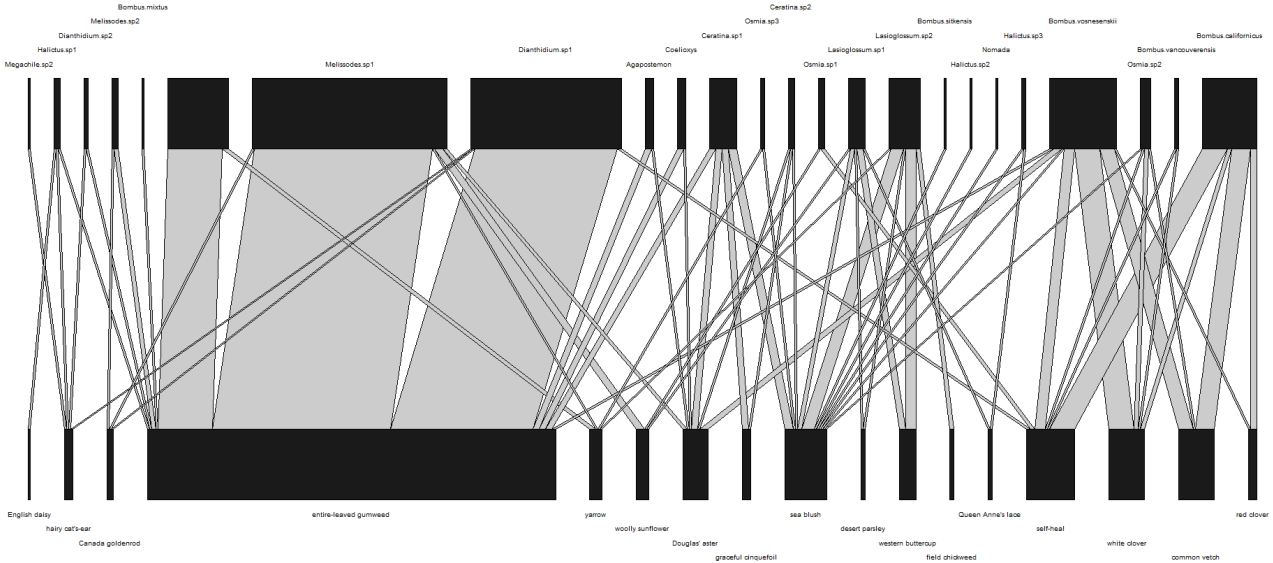

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OUR FUTURE FLIES WITH POLLINATORS

Pollinators provide many ecosystem services that support the health of plants, people, and the planet.
Get involved at www.pollinator.org.

Meet these plants and pollinators, and learn how you can help them at https://www.pollinator.org/poster-2020.
Art by Fiorella Ikeue

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Los polinizadores proveen de los servicios ecosistémicos que mantienen la salud de las plantas, la gente y el planeta. Involucrate a www.pollinator.org.

Les pollinisateurs assurent plusieurs services écosystémiques qui contribuent à la santé des plantes, des personnes et de la planète. Impliquez-vous en visitant www.pollinator.org.