HOW YOU CAN HELP THE BEES

BC EDITION

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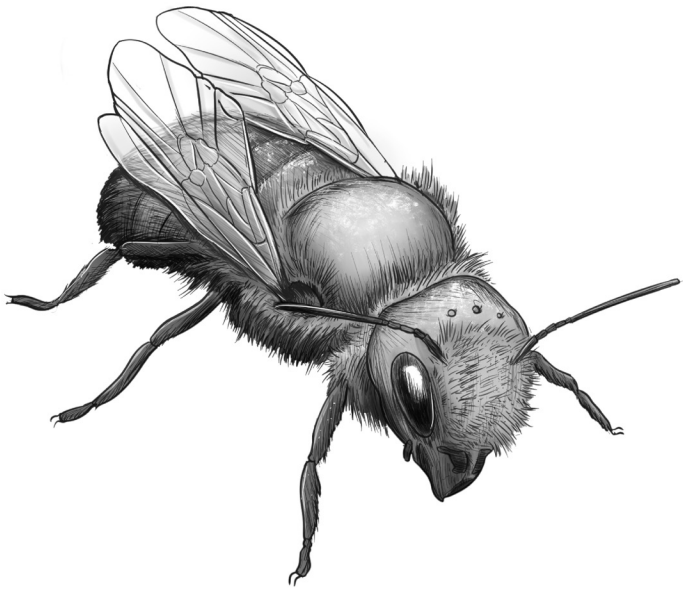
Blue Orchard Mason Bees

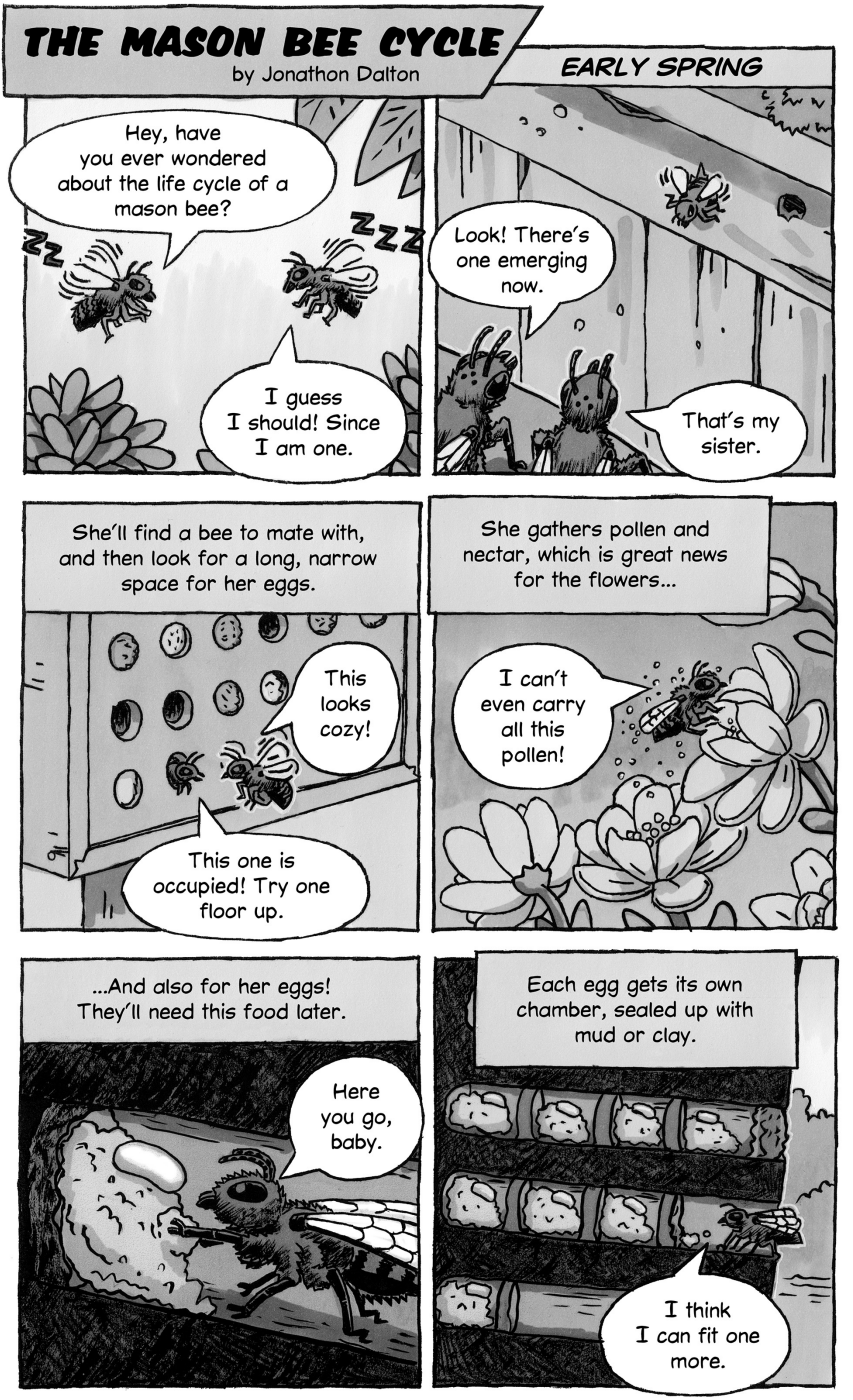
What are solitary bees?

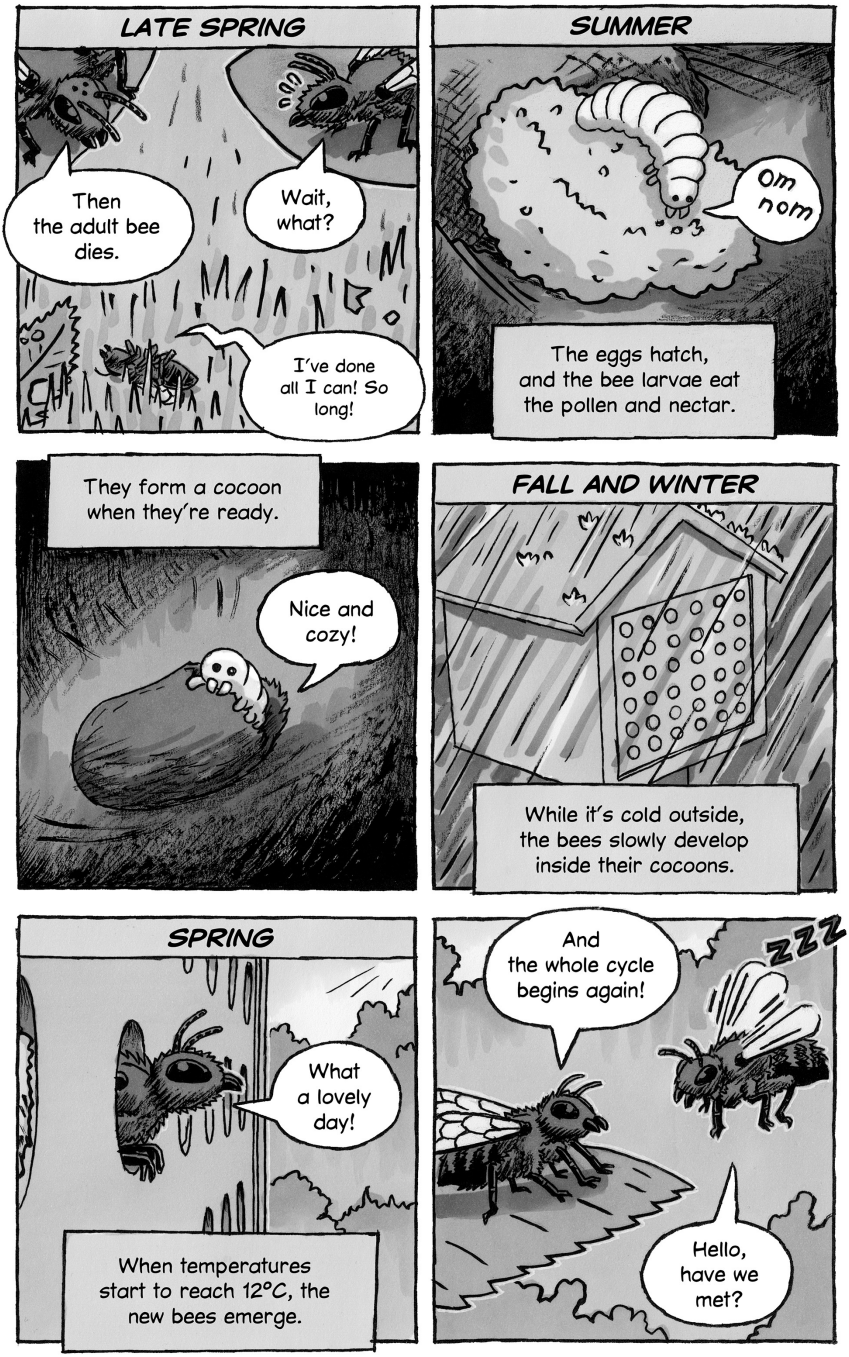
- Did you know that there are over 400 species of native bees in BC?
- Most bees don't live in colonies. *Solitary bees* don't typically produce honey, but they are some of the most important pollinators on the planet. This book is focused on one of BC's prominent, managed solitary bee species, the Blue Orchard Mason Bee, but many of these project ideas are beneficial to insects in general.

Will mason bees sting me?

Male mason bees don't have stingers and female mason bees are extremely unlikely to sting you.




THE MASON BEE CYCLE
by Jonathon Dalton
EARLY SPRING
Hey, have you ever wondered about the life cycle of a mason bee?
ZZz
ZZZ
I guess I should! Since I am one.
Look! There's one emerging now.
That's my sister.
She'll find a bee to mate with, and then look for a long, narrow space for her eggs.
This looks cozy!
This one is occupied! Try one floor up.
She gathers pollen and nectar, which is great news for the flowers...
I can't even carry all this pollen!
...And also for her eggs! They'll need this food later.
Here you go, baby.
Each egg gets its own chamber, sealed up with mud or clay.
I think I can fit one more.


LATE SPRING
Then the adult bee dies.
Wait, what?
I've done all I can! So long!
SUMMER
Om nom
The eggs hatch, and the bee larvae eat the pollen and nectar.
They form a cocoon when they're ready.
Nice and cozy!
FALL AND WINTER
While it's cold outside, the bees slowly develop inside their cocoons.
SPRING
What a lovely day!
When temperatures start to reach 12°C, the new bees emerge.
And the whole cycle begins again!
ZZZ
Hello, have we met?

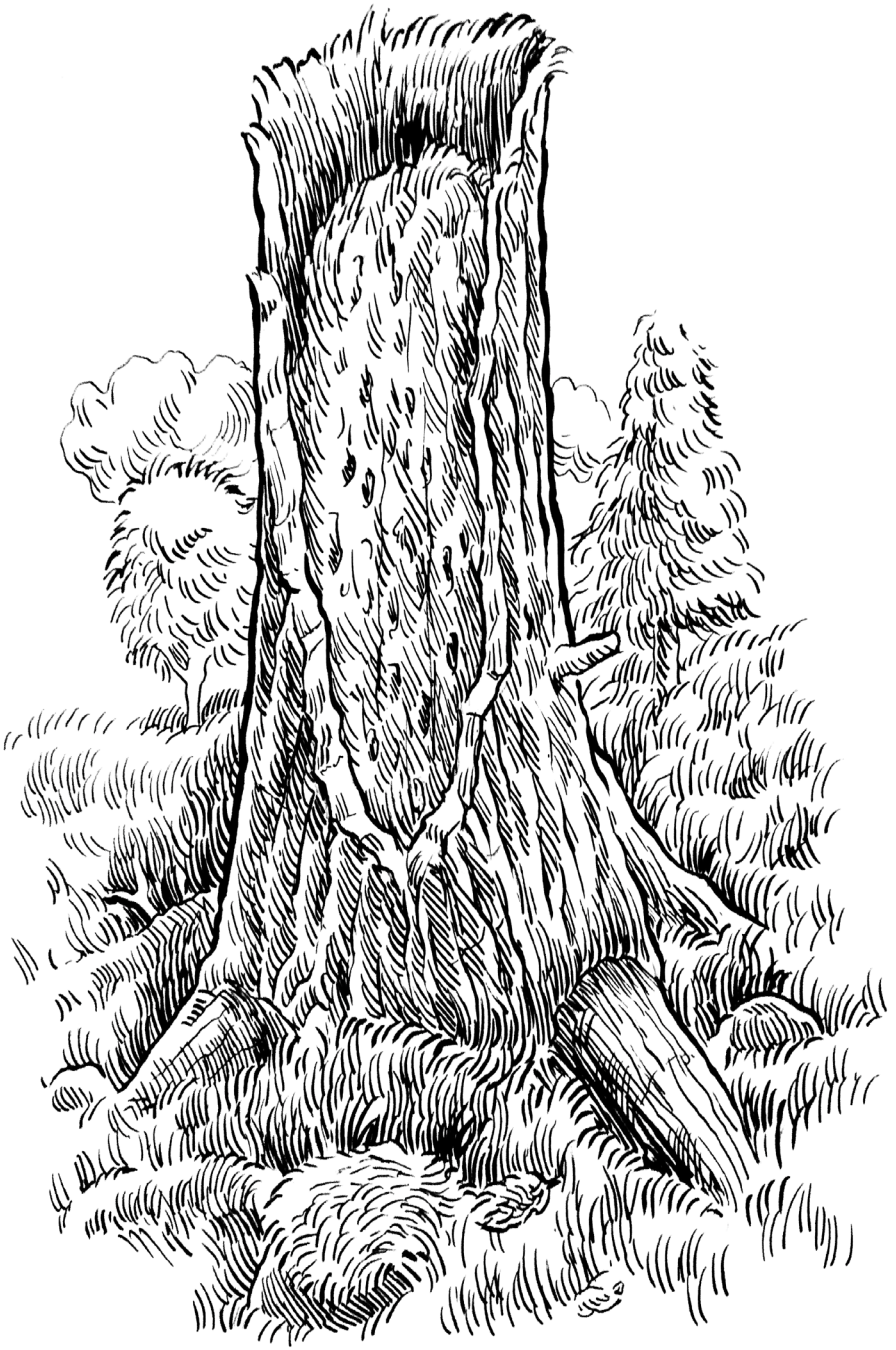
Natural Habitat

- The design of man-made Mason Bee habitats is based on natural bee habitats. Mason Bees build nests "...in long, narrow spaces like hollowed plant stems, tunnels excavated by beetles in logs or snags and in the spaces between rocks."[1]

Mini Project: A Sacred Space

Have a "sacred space" in your garden where you do not rake the leaves, till the soil, walk, or trim the plants. This protected space allows beneficial insects, such as beetles, to live and burrow. 1 meter square is a good size, but more is merrier.

1 "Mason Bee." Canadian Wildlife Federation: cwf-fcf.org/en/resources/encyclopedias/fauna/insects/mason-bee.html.



How You Can Help Today
Bee Water Dish

SUPPLIES

For all of these projects, we recommend using repurposed materials.

Materials Needed:

- Stones or marbles
- A shallow dish

Step 1

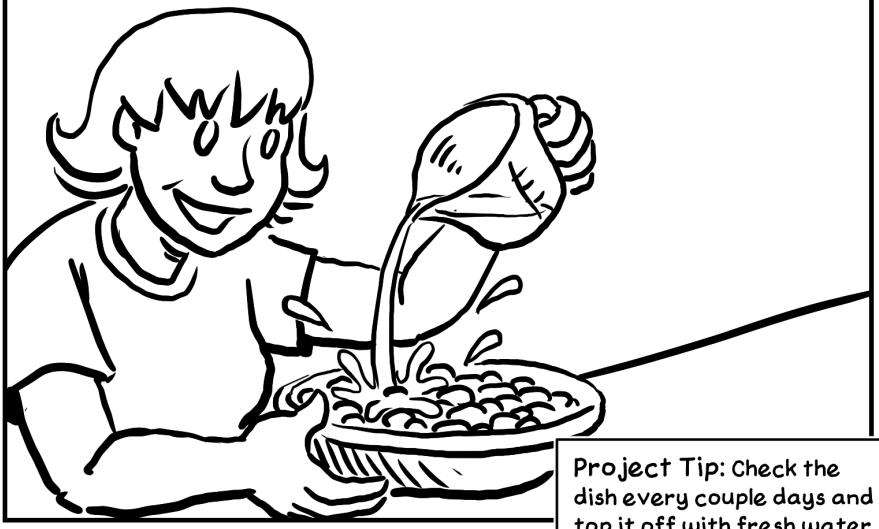
Find stones in a park (be careful to not disturb any animal habitats) or marbles, and clean them thoroughly with regular hand soap.

Step 2

Find a shallow ceramic or glass dish (thrift stores have plenty of these) and add the marbles or stones.

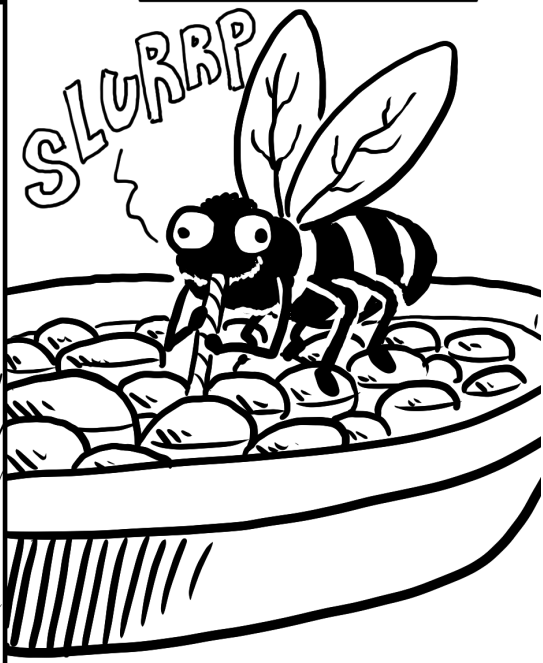
STEP 3

Top up the dish with water and leave it outside. Insects now have a place to refresh themselves. No lawn or garden is required.



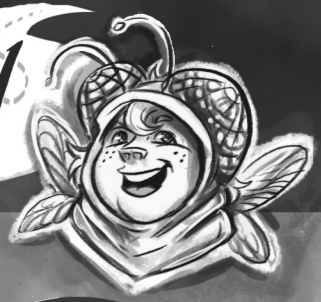
Project Tip: Check the dish every couple days and top it off with fresh water.

Concerned about Mosquitos?
Modify this project to help prevent mosquitoes from breeding in the dish: Instead of marbles or rocks, partially fill the dish with sand and top it off with water. Insects don't need open water to drink; they can drink from a substrate saturated with water.



PUT OUT CLAY OR MUD

How to Make a... BEE Hotel!



Materials

a Well-Cleaned Plastic Milk Jug or Pop Bottle or Old Plastic Cup

Paper Straws or Bamboo

(A Variety of sizes encourages males & females)

String*

*Not this much (it's just to hang it up.)

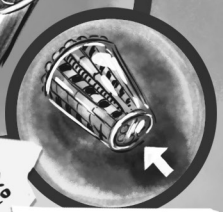
Steps

1

Make Sure tubes are clean & clear.

2

Stuff tubes into cup, leaving no wiggle room.



(make sure back is sealed - otherwise you'll create a "wind-tunnel")

3

Place the hotel in a sheltered but Sunny area in early March.

4

Keep an eye on the hotel - don't let pests, parasites or Mould move in!

Final Product

Warning!!

Insect "hotels" won't work for generation after generation of bee. After each generation, pollen mites, fungi, and parasites that kill the bees can build up, so these habitats must be cleaned or destroyed in early spring, after the first generation of bees has emerged.

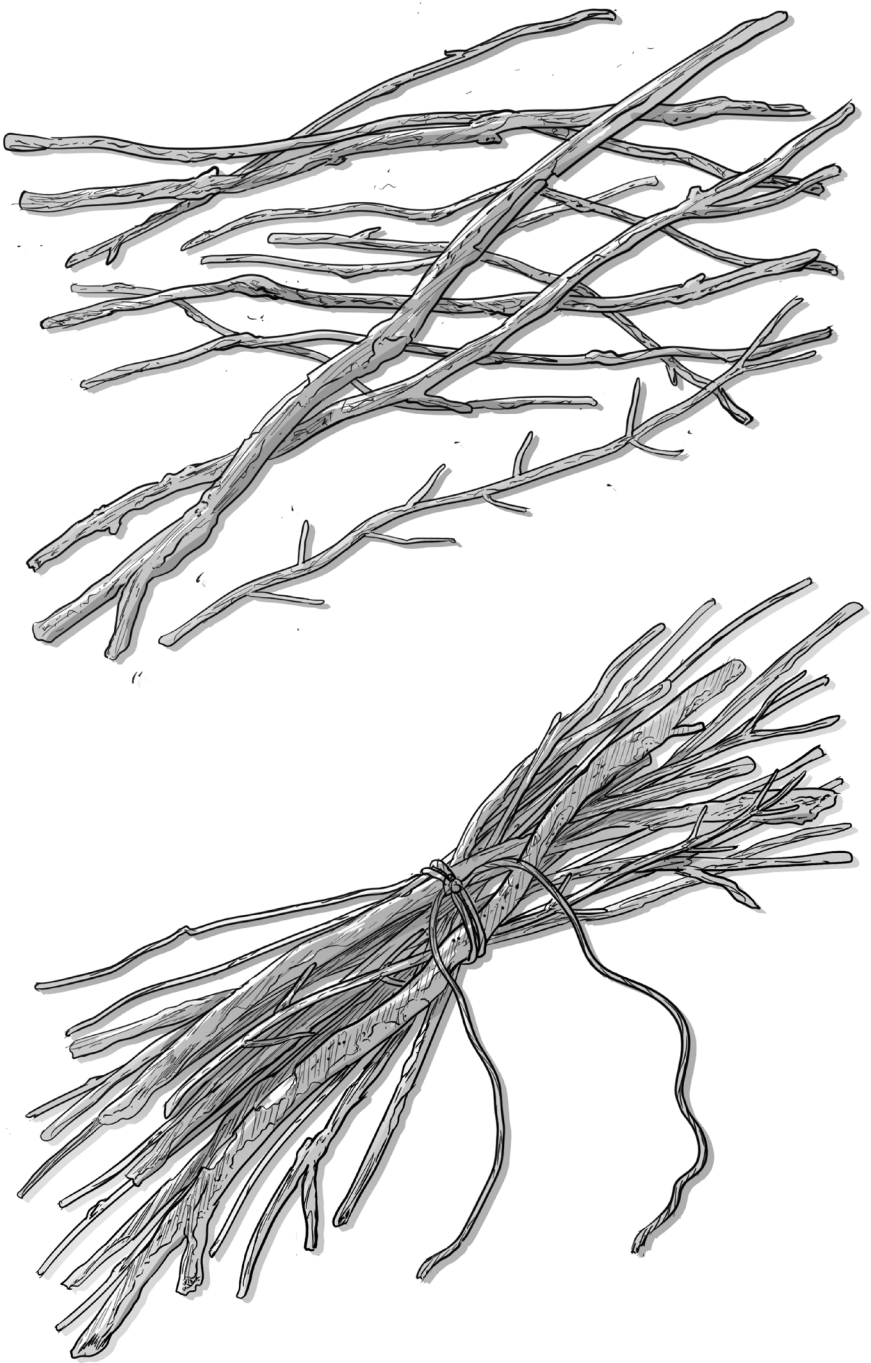
Stick Bundle

Small Project

Material Needed

- Sticks (Anything over 20 cm will do nicely)
- Long, sturdy string or rope

Gather the sticks and tie them together in a bundle. Leave this in your garden to attract all kinds of beneficial insects.



MAKING YOUR OWN POLLINATOR GARDEN

Tips

- Avoid using pesticides
- Nicole Read writes, in the Mason Bee Resource Guide: "Flowering plants that are sold through big box stores and nurseries are often laden with pesticides that can […] kill bees. Planting organic seeds yourself is the best way to avoid this, but if that is a challenge, then try to look for plants that are organically grown."
- Create contiguous habitat: rather than a small patch of flowers here or there, try to form as large a "chunk" of habitat as possible
- Mix different colors and heights of flowers together
- Use native plants
- Plant flowers that bloom in succession - bee season is from March to October and it's best to provide year-round food

Recommended Plant List

Blueberry, Blackberry, Aster, Cotoneaster, Catmint, Beggar's tricks, Crabapple, Catnip, Borage, Cranberry, Chives, Coneflower, Crocus, Dahlia, Cornflower, Foxglove, Hyssop, Cosmos, Heliotrope, Lavender, Goldenrod, Hazelnut, Raspberry, Pumpkin, Heather, Sunflower, Sedum, Primrose, Yarrow, Squash, lupins, sage, heathers and heaths, sunflowers, comfrey, bee balm, currants, thimbleberry, strawberry, pieris japonica, shrubs, bunching grass

Recommended Tree List

Willow, apple, plum, cherry

Local Pollinator Plant List with Care Instructions

Lavender

Height	2 to 3 feet
Spread	2 to 4 feet
Planting	Spring (if planting later, in the Fall, use larger plants to ensure Winter survival)
Spacing	2 - 3 feet apart
Soil	Can thrive in poor to moderately fertile soil
Light	Full sun
Water	Dry to medium
Warnings	Keep away from moist areas

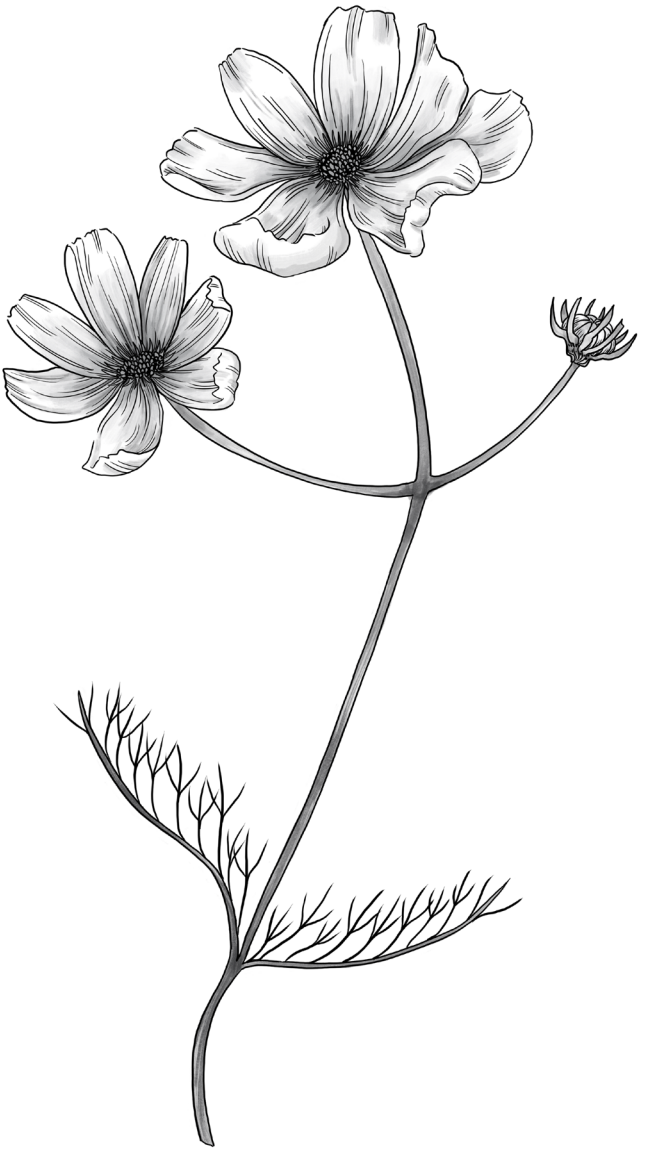
Nodding Onion

Height	1 - 1.5 feet
Spread	0.25 - 0.5 feet
Planting	Spring
Spacing	Ideally planted in small groups
Soil	Dry to medium well-drained soil; can thrive in harsh conditions such as gravelly soil. Does well in rock gardens.
Light	Ideally, full sun. Partial shade tolerable.
Water	Dry to medium
Warnings	Overall, a hardy plant, but can be susceptible to bulb rot in overly moist conditions.


zZZzzz

Cosmos

Height	1 to 4 feet
Spread	2 to 3 feet
Planting	Plant after the danger of frost has passed
Spacing	¼-Inch deep and 12–18 inches apart
Soil	No special preparation needed - err on the side of less rich soil.
Light	Full sun
Water	Medium
Warnings	Water regularly, but be careful not to overwater. Cosmos can tolerate dry soil.



Calendula (Marigold)

Height	1 - 2 feet
Spread	1 to 2 feet
Planting	Plant after the danger of frost has passed
Spacing	10 - 12 inches apart
Soil	Moderately fertile, well-drained
Light	Full sun to partial shade
Water	Medium
Warnings	A hardy plant with few serious problems. Watch out for slugs and snails on young plants.

Foxgloves

Height	3 - 5 feet
Spread	1 - 2.5 feet
Planting	Late summer (ideal), fall, or spring
Spacing	Approximately 30 inches apart
Soil	Rich and well drained
Light	Full sun to partial shade
Water	Medium - don't let the soil totally dry out, but beware overly soggy conditions or standing water.
Warnings	Can be harmful to children or pets if eaten.

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A practical guide full of tips and projects for helping local bees and insects

Thank you for picking up this little book.

We are facing a lot of problems in our world. It can be overwhelming, and it can be hard to know how to help and what to do.

There will not be a world to live in if we lose our insects.

Without insects, we will not have food in the grocery stores. We will not have animals. All life on earth, including humans, relies on insects, and bees, to keep our ecosystems alive.

And, very quickly - at a rate that could mean extinction within the next 100 years - we are losing these precious creatures. It's not too late to help, even if you can't keep bees in your backyard.

This book is free. If you don't want a physical copy, download a free PDF:

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