

NATIVE BEES: POLLINATOR SUPERHEROES

Why pollinators?

Pollinators are animals that move pollen between flowers and give plants a way to reproduce. At least 30% of our foods require an animal pollinator--without them, we wouldn't have many nuts, berries, fruits, and vegetables. Many of these pollinators are insects, which are also essential to healthy, resilient food webs and ecosystems.

We are focusing this guide on native bees, the most efficient of insect pollinators. There are over 500 species in Oregon (4,000 in the US!), many of which are solitary (no hive or colony) and have no desire or ability to sting. This guide focuses on four types of native bees that you are likely to see in Coos County, representing 4 different life histories.

Pollinators (and insects in general) are declining at alarming rates, threatening the health of our ecosystems. The good news: there is a lot we can do to support pollinators and reverse declines in our watershed **every month of the year** (see inside pages). **Here are 5 ways to start:**

- 1 **Plant a diversity of native plants** that bloom across the whole year to line up with when different pollinators are active.
- 2 **Include nesting and overwintering habitat.** Without a safe place to live, pollen/nectar only supports a tiny fraction of a pollinator's life cycle. About 70% of native bees nest in patches of bare ground, and the remaining 30% nest in cavities, such as plants with hollow or pithy stems (e.g., raspberry, elderberry, roses). Leaving parts of your yard a little more wild and untouched, reducing mowing, leaving leaves in the fall/winter, creating brush piles - gives pollinator larvae and overwintering adults a safe home. Messy gardening = pollinator habitat!



- 3 **Eliminate lawn whenever possible.** Very few species are able to live in lawns; consider replacing your lawn (or parts of it) with native plants.
- 4 **Minimize/eliminate pesticide and herbicide use.** Chemicals negatively impact pollinators (small and sensitive bodies), and also impact their food sources. If you need to use herbicides to reduce invasive plants, consider using methods that reduce drift and overspray; contact CoosWA for more info.
- 5 **Share what you're doing!** Humans are social creatures, and peer pressure/encouragement works! Put up a sign and tell your friends and neighbors what you're doing.

BACK YARD POLLINATOR HABITAT QUIZ

How pollinator-friendly are your space and maintenance habits?

Answer each question, thinking about the current state of your yard and garden habits. The higher the score, the better!

	Helpful Habits- Maximize these!
/4	How long do I have blooming plants? 0=no flowers, 1=flowers blooming 1-3 months, 2= 3-6 months, 3=6-9 months, 4=9-12 months Pollinators are active in many seasons and need access to sustenance in all
/4	Do I have native plants? 0% of my plants are native=0, 25%=1, 50%=2, 75%=3, 90+%=4 Silk tassel, red flowering currant, yarrow, douglas aster, etc.
/1	Do I provide water sources for pollinators? 0=no, 1=yes Consider providing small, shallow water sources with rocks, twigs, or corks in them
/2	Do I leave areas of bare soil for ground nesting bees? 0=no bare soil, 1=some spots, 2=large areas It may look ugly, but bare ground provides access to soil used for solitary bee tunnels
/1	Do I have plants with pithy or hollow stems? 0=no, 1=yes Bees nest in these stems. Some examples include elderberry and rose stems
/1	Do I prune in the spring and at varying heights? 0=no, 1=yes Pruning in the spring creates different size nesting sites for bees to use as cavity nests
/2	Do I leave portions of my yard untouched? 0=perfectly clean, 1=messy areas, 2=consistently messy! Messy gardening creates more habitat and mimics natural processes Messy=habitat=resilient ecosystems!
/1	Do I leave dead trees and logs? 0=no, 1=yes If they pose no fall or fire risk, dead trees and logs provide habitat and support biodiversity
/2	Do I leave leaves alone? 0=I dispose or destroy leaves, 1=I rake and move them, 2=I leave them Loose leaves provide nesting habitat for many beneficial insects! Consider using as mulch

Total

	Harmful Habits- Minimize these!
/4	Are there invasive species present? English ivy, gorse, Himalayan blackberry, Scotch Broom etc? 0=none, 1=isolated pockets, 2= 20-40% of plants are invasive, 3= 40-60%, 4=over 60% are invasives Removing invasive species opens space for more beneficial plants
/4	Do I use chemicals to manage pests or weeds? 0=no use, 1=rare use, 2=regular herbicide stump treating, 3=full herbicide sprays, 4=insecticide use Chemicals directly harm pollinators, contact your watershed council for advice/alternatives
/4	Do I have a lawn? 0=no lawn, 1=25% lawn coverage, 2=50% lawn, 3=75% lawn, 4=entire yard is lawn Consider partially or fully replacing lawns with native plants
/1	Do I mow frequently? 0=mow less than every 2 weeks, 1=mow frequently Mowing more than once every 2 weeks disrupts habitats
/1	Do I mow at a low mower height? 0=no I mow at the highest setting, 1=yes I mow at a low setting Consider raising the mower to the highest setting to leave habitat intact
/1	Do I use fabric or plastic barriers? 0=no I avoid fabric and plastic, 1=yes I use plastic and fabric Impenetrable layers limit ground nesting bee habitat, minimize use
/1	Do I prune dead plants in the fall or winter? 0=no I prune in late spring, 1=yes I prune in fall/winter In the fall and winter bees nest in dead plants. Pruning them destroys nests and kills baby bees
/1	Do I mulch with artificial mulch? 0=no I use natural material, 1=yes I use artificial mulch Artificial mulch can introduce harmful chemicals and blocks soil access
/1	Do I apply mulch heavily? 0=no I rarely mulch, 1=yes I mulch heavily Mulch can limit access to soil; consider applying lightly or using leaves instead

Total
 Helpful Habits Harmful Habits Final Score
 - =

The higher your score, the more supportive your habitat is for pollinators!



SUPPORTING NATIVE POLLINATORS

YEAR-ROUND IN THE COOS WATERSHED



COOS Watershed Association

cooswatershed.org

engagement@cooswatershed.org
(541) 888-5922
381 N 2nd St (PO Box 388)
Coos Bay, OR 97420

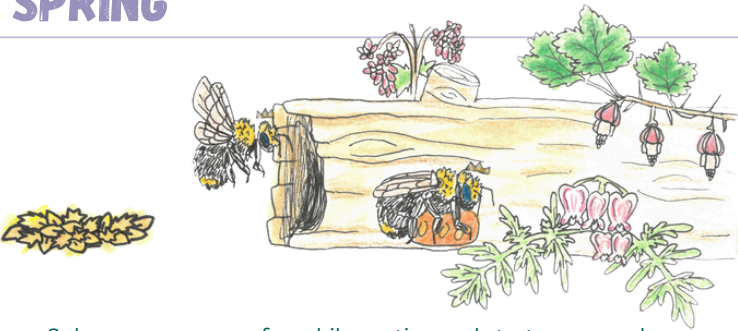


Supporting environmental integrity and economic stability in the Coos watershed since 1994

NATIVE BEE LIFECYCLES

Art Credit: Danni Danielson

SPRING



Solo queen emerges from hibernation and starts a new colony

SUMMER



Worker bees hatch, forage, and protect the colony; the next queen hatches

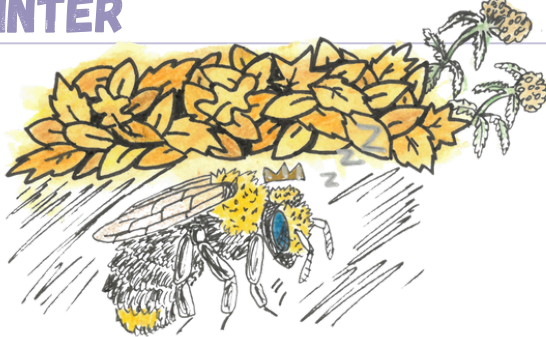
FALL



Colony dies off, including worker bees and previous queen

The new queen overwinters alone

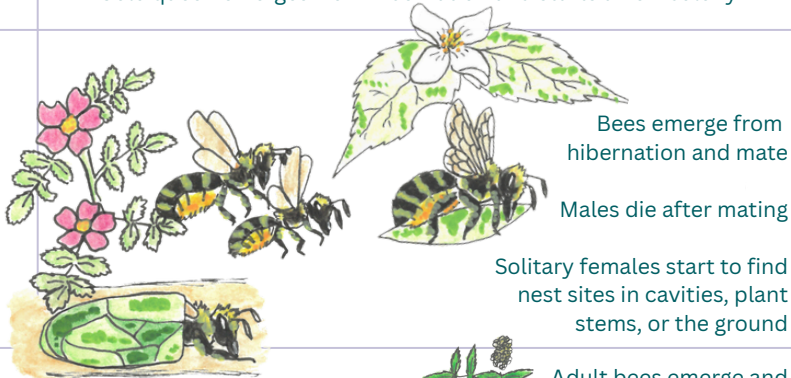
WINTER



The new queen overwinters a few inches under loose soil or leaves

Yellow-Faced Bumble Bee
(*Bombus vosnesenskii*)

Leaf Cutter Bee
(*Megachile* sp.)

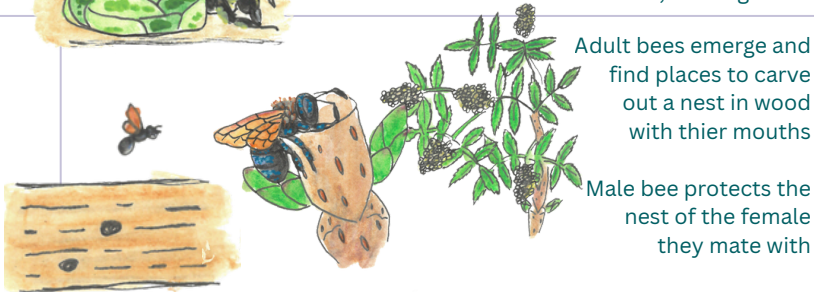


Bees emerge from hibernation and mate

Males die after mating

Solitary females start to find nest sites in cavities, plant stems, or the ground

Carpenter Bee
(*Xylocopa* sp.)



Adult bees emerge and find places to carve out a nest in wood with thier mouths

Male bee protects the nest of the female they mate with

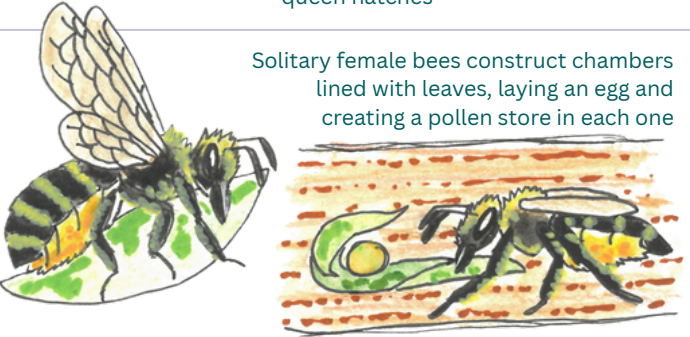
Sweat Bee
(*Agapostemon* sp.)



Bees begin to emerge and find a patch of bare soil

Then they dig a tunnel and start laying eggs

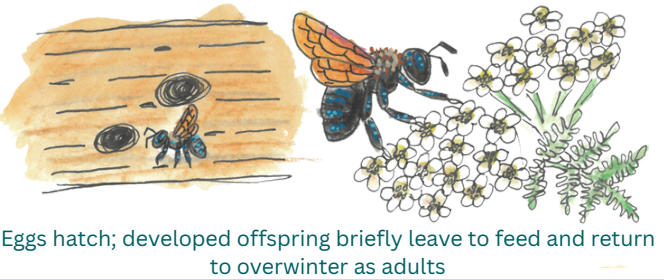
Solitary female bees construct chambers lined with leaves, laying an egg and creating a pollen store in each one



Through summer they build their nest, create cells, lay eggs, provide pollen stores



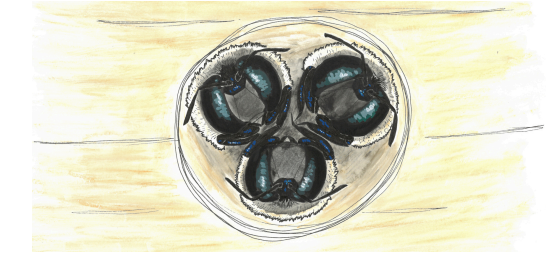
Bees forage, pollinate, and mate throughout the summer



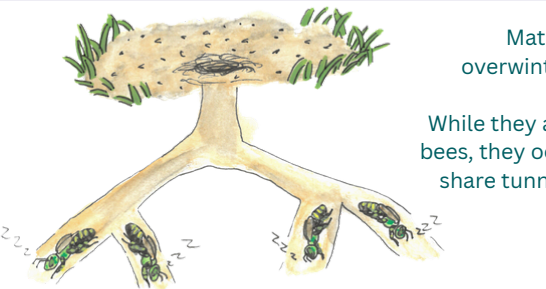
Eggs hatch; developed offspring briefly leave to feed and return to overwinter as adults



In warm climates, populations have a second generation in the fall



Adults overwinter "huddled" together in the nest they were born in



Mated females overwinter in nests

While they are solitary bees, they occasionally share tunnel systems

What Can We Do?

- Prune dead flower stalks and plants (NOT in fall)
- If removing leaves, wait until late spring
- Avoid tilling soil as bees are emerging at this time
- Avoid using fabric and plastic barriers
- Provide water sources - small, shallow, with rocks, twigs, or corks in them

- Mow less! Try to go 2-3 weeks between mowing
- Raise the height of the mower to the highest setting
- Avoid using chemicals in your garden and lawn
- Mulch with small pebbles, compost, or plant debris
- If mulching with wood, use a light layer
- Try to leave patches of bare soil where you can

- Leave dead flower stalks over the winter
- Leave leaves on the ground - if you can't leave them on the lawn, consider placing in flower beds and around plants as mulch
- Avoid pruning any plants with pithy or hollow stems as they may have nesting bees in them
- Plant native plants when the rain starts

- Leave anything that functions as habitat intact - bare soil, dead plants, leaves
- Minimize disturbances
- Embrace the messy parts of your yard - they are full of life all winter long (the life might just be sleeping!)
- Plant native plants and flowering bushes in rainy season
- Create brush or rock piles to make habitat
- Leave dead trees that do not pose a fall or fire risk

Plant a variety of natives that together bloom year-round!

