

LANDSCAPE COMPONENTS THAT PROVIDE NATIVE BEE HABITAT

1. **Plant native bunch grasses:** provide pollen in early spring, and bumblebee nest & overwintering sites
2. **Plant native flowering plants that bloom from Mar-Nov:** blue/purple/yellow/ white
3. **Create cavities or hang a nest box**
4. **Leave a few spots of bare soil** (*for ground-nesting species*)
5. **Provide bundles of twigs or reeds** (*for cavity-nesting species*)
6. **Include rock piles or walls in your landscaping** (*creates nice nest sites*)



CREATING BREEDING HABITAT FOR BEES

Cavity Nest Bundles

- ❖ Aim for small (8-10 sticks), tight bundles to avoid middle sticks falling out
- ❖ Phragmites reeds, paper straws, small bamboo are all good sources
- ❖ Hang bundle in a dry location. Under an eave, porch roof, or other protected place
- ❖ Bundle should be secure (not move around in wind)
- ❖ Sticks east are nice to warm the bees in the morning
- ❖ Avoid locations with direct afternoon sun - too hot



COMMON STICK-DWELLING *OSMIA* of N. UTAH

Nest plugs:

Rough surface;
Made of mud



MARCH

- ❖ Orchard mason bee
(*O. lignaria*)

Osmia are dark blue or
black; some shiny metallic:



APRIL & MAY

Smooth,
concave surface;
Made of mud



- ❖ Sunflower mason bees
(*O. californica*)



Bright green
when fresh;
Made of chewed
leaves



- ❖ Sunflower mason bees
(*O. montana*, *O. texana*,
O. ribifloris, *O. coloradensis*)



CREATING BREEDING HABITAT FOR BEES

Build Your Own Solitary Bee Nest Box

DIRECTIONS:

- Drill nesting holes between 3/32" and 3/8" in diameter, 3-4" deep, at 3/4" intervals in preservative-free lumber
- Drill nesting holes 1/4" in diameter or greater at least 5" deep.
- The holes should be smooth inside, and closed at one end

THE DEPTH OF THE HOLES IS CRITICAL to maintain healthy gender ratios

- holes less than 1/4" diameter should be 3-4" deep.
- For holes 1/4" or larger, a 5-6" depth is required

LOCATION OF THE NESTING SITES IS IMPORTANT

- Nest boxes should be placed where they are sheltered from harsh weather, with entrance holes facing east or southeast to get morning sun.
- Nest boxes can be installed at any height from the ground, but 3-6ft is most convenient for monitoring. Put them on a building, fence, or stake, or place them in a tree. Fix them firmly so they don't shake in the wind.

EXCELLENT PLANTS FOR ATTRACTING BEES

PERRENNIALS

- **Cactus species**
- **Catmint:** *Nepeta cataria*
- **Whirling butterflies:** *Gaura* spp.
- **Flowering sage:** *Salvia* spp.
- **Narrow leaf Coneflower:** *Echinacea angustifolia*
- **Penstemon spp.** (multiple spp: *palmeri*, *spectabilis*, *strictus*)
- **Milkvetch:** *Astragalus* spp.
- **bearded Lupine:** *Lupinus barbiger*
- **desert Larkspur:** *Delphinium parishii*
- **wild bergamot:** *Monarda fistulosa*
- **Hyssop:** *Agastache* spp
- **Sunflower family:** *most species*
- **Evening Primrose:** *Oenothera* spp.
- **Goldenrod:** *Solidago* spp.
- **Globe Mallow:** *Sphaeralcea* spp.
- **Bunch grasses**



EXCELLENT PLANTS FOR ATTRACTING BEES

SHRUBS

- Fern bush
- Blue Spirea
- Desert Willow
- Rabbitbrush
- Antelope Bitterbrush
- Oregon Grape
- Manzanita
- Serviceberry
- Flowering Currant
- Dogwood



EXCELLENT PLANTS FOR ATTRACTING BEES

Trees

- Linden spp
- Willows (*early spring pollen collection*)
- Chokecherry
- Serviceberry
- Crabapple
- Flowering plum, cherry, peach & apple



ATTRACTING HUMMINGBIRDS

- 4 species you may see in UT: broad-tailed, black-chinned, rufous, & calliope
- Love red, orange, & pink tubular flowers, blooming late Apr to early Oct
- Avoid insecticides: they eat insects too, especially the nestlings

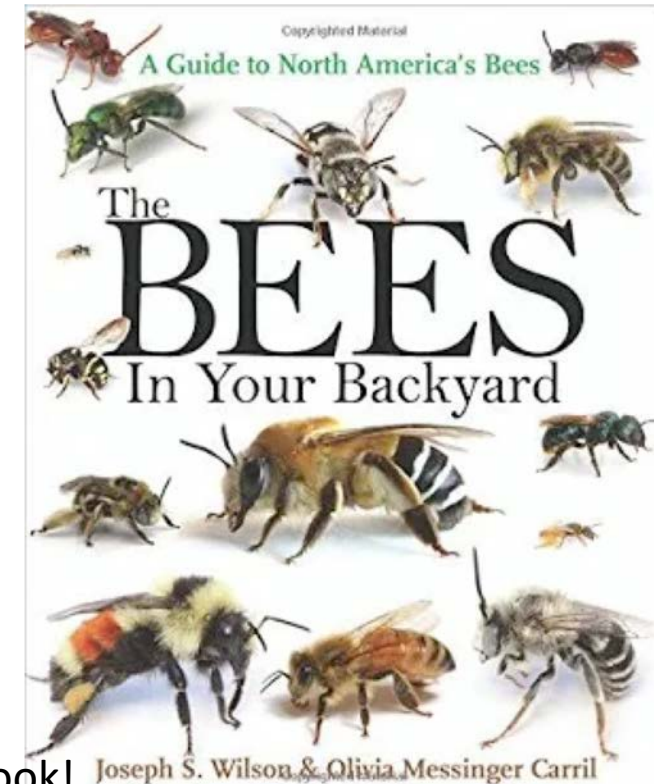
SUGGESTED PLANT LIST

- Red Hyssop: *Agastache* spp
- Red-blooming *Salvia* spp
- Red Penstemon spp (*Penstemon eatonii* is a UT native!)
- Red Monarda spp
- Hummingbird trumpet (*Zauschneria arizonica*)
- Sunflowers (*yes! Sunflowers!*)
- Columbine (*Aquilegia* spp.)
- Desert willow (*Chilopsis linearis*)



GET INVOLVED IN COMMUNITY SCIENCE

- <http://xerces.org/>
 - Pollinator Protection Pledge
<http://xerces.org/pollinator-conservation/pollinator-protection-pledge>
- iNaturalist: <https://www.inaturalist.org/>
- Bumblebee watch: <https://www.bumblebeewatch.org/>



Check out this book! Joseph S. Wilson & Olivia Messinger Carril

WHO IS STUDYING BEES? Thankfully, many scientists...

1. USDA-ARS Bee Biology and Systematics Laboratory: (in Logan, UT): federal research lab focusing on developing non-honeybee bee species as crop pollinators as well as bee biosystematics and plant-pollination systems <https://www.ars.usda.gov/pacific-west-area/logan-ut/pollinating-insect-biology-management-systematics-research/docs/aboutus/>
2. USGS Native Bee Inventory & Monitoring Lab: federal program emphasizes citizen science to ID native U.S. species and determine their geographic range <https://www.pwrc.usgs.gov/nativebees/>
3. The Xerces Society: NPO conducting research, monitoring, & restoration efforts for all invertebrates, with an emphasis on bees www.xerces.org
4. Scientific Beekeeping: Randy Oliver, commercial beekeeper conducting long-term scientific research to determine best practices for maintaining healthy beehives for both hobby and commercial beekeepers: <http://scientificbeekeeping.com/>
5. Utah Department of Agriculture & Food: UT State Agency focused on statewide beehive inspections, monitoring of diseases & parasites, innovating new hive inspection methods, etc. (*Stephen Stanko, one of the founding student leaders of the UofUBeekeeping Association now conducts research here!*)
6. Dr. Marla Spivak, University of Minnesota: MacArthur Fellow and Distinguished Professor studying honeybee genetics, diseases, queen rearing, and foraging behavior of honeybees www.beelab.umn.edu