

# POLLINATORS, CLIMATE CHANGE, & YOUR GARDEN

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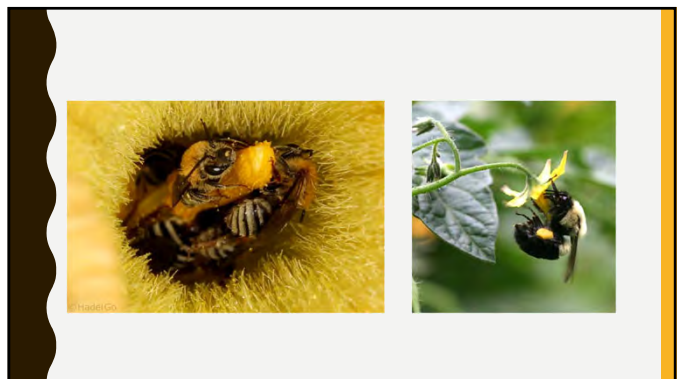


**SAVE THE BEES**

**Honeybee colony collapse disorder**  
 A major cause of honeybee colony collapse disorder is the loss of bees to parasites and diseases. The loss of bees is also caused by the loss of their natural habitat and the use of pesticides.

**Honeybee colonies 1940-2000**

The number of honeybee colonies in the U.S. has declined by 80% since 1990. This is due to a combination of factors, including the loss of natural habitat, the use of pesticides, and the spread of parasites and diseases.

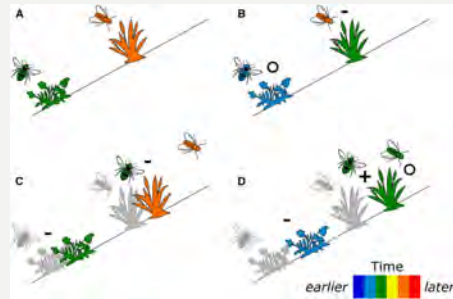


## SPECIALIST VS GENERALIST

- A **generalist species** is able to thrive in a wide variety of environmental conditions and can make use of a variety of different food sources.
- A **specialist species** can thrive only in a narrow range of environmental conditions or has a limited diet.



## PHENOLOGICAL MISMATCH



## YOUR GARDEN, YARD, FARM



## YOUR GARDEN – PLANTING, MAINTAINING

- Try to have something that blooms all year
- Native plants
- Avoid ornamentals with inadequate nectar and pollen source
- Have a diverse array for different pollinators
- Try not to spray insecticides if possible
- Be careful not to plant invasive, naturalizing weeds



## check

### NORTHWEST

**PLANT** Sink flower bulbs now for spring bloom. Most tulips and hyacinths are good for two or three years. For longer-lasting species, try daffodils, English or Spanish bluebells (*Hyacinthoides*), glory-of-the-snow (*Chionodoxa*), lilacs, grape hyacinth (*Muscari*), ornamental onions (*Allium*), and spring or summer snowflakes (*Leucophaea*).

Order willowow mix for fall planting. Most blend of few natives (California poppy and forewell-to-spring) with non-natives that naturalize well (Barbador's burton, Queen Anne's lace, and Shirley poppy).

### MAINTAIN

Cooler weather and

stimulates berry berries, and the tomatoes to be



### ROCKY MOUNTAIN

**PLANT** Try a new flower bulb—Norfolkia for henriqueti. Twinkle for a golden night

## POLLINATOR ATTRACTING PLANTS WINTER-EARLY SPRING (FEB-APRIL)

- \*Vine maple (*Acer circinatum*)
- \*Tall Oregon grape (*Berberis aquifolium*, formerly *Mahonia*)
- \*Camass (*Camassia* spp.)
- ~Crabapple (*Malus floribunda*, \**Malus fusca*)
- ~Willow (*Salix* spp.)
- \*Columbia Desert Parsley (*Lomatium columbianum*)
- \*Pungent Desert Parsley (*Lomatium grayi*)

\*=native species ~ = native species available (from the OSU Horticulture Department)



## POLLINATOR ATTRACTING PLANTS SPRING-EARLY SUMMER (APRIL-JUNE)

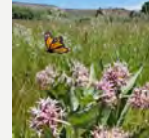
- \*Western serviceberry (*Amelanchier alnifolia* spp.)
- Borage (*Borago officinalis*)
- ~California lilac (*Ceanothus* spp.)
- ~Tickseed (*Coreopsis* spp.)
- ~Geranium (*Geranium* spp.) – [~watch for shiny geranium and herb Robert when at the nursery!~]
- \*Globe gilia (*Gilia capitata*)
- ~Lupine (*Lupinus* spp.)
- ~Chokecherry (*Prunus virginiana*)
- ~Bee balm (*Monarda* spp.)
- \*Buckwheats: sulfur flower buckwheat (*Eriogonum umbellatum*) arrowleaf/heartleaf buckwheat (*E. compositum*),



\*=native species ~~=native species available

## POLLINATOR ATTRACTING PLANTS MID-LATE SUMMER (JULY-SEPTEMBER)

- Blue giant hyssop (*Agastache foeniculum* and spp.)
- California poppy (*Eschscholzia californica*)
- \*Oregon gumweed (*Grindelia stricta* or *integrifolia*)
- \*Sneezeweed (*Helenium autumnale*)
- \*Showy tarweed (*Madia elegans*)
- Catmint (*Nepeta x faassenii*) !!
- Russian sage (*Perovskia atriplicifolia*)
- Phacelia (*Phacelia* spp.)
- ~Stoncrop (*Sedum* spp.)
- \*Milkweed (*Asclepias fascicularis*, *Asclepias speciosa*)
- \*Fire weed (*Chamerion angustifolium*)
- \*Oceanspray (*Holodiscus discolor*)



\*=native species ~~=native species available  
~mint species can be very invasive, catmint is not, but watch for other mint species especially lemon balm~

## POLLINATOR ATTRACTING PLANTS LATE SUMMER – FALL (SEPTEMBER-NOVEMBER)

- Michaelmas daisy (*Aster amellus*)
- \*Goldenrod (*Solidago canadensis*)
- \*Asters: Douglas aster (*Symphotrichum subspicatum*), Eaton's aster (*Symphotrichum bracteolatum*), Henderson's aster (*Symphotrichum hendersonii*), Oregon golden aster (*Heterotheca oregona*), roughleaf aster (*Eurybia radulina*), hoary aster (*Dieteria canescens*)
- \*Buckwheats: barestem buckwheat (*E. nudum*), tall woolly buckwheat (*E. elatum*)
- \*Hummingbird trumpet or California fuchsia (*Epilobium canum*)



## POLLINATOR WATER SOURCE



## NESTING BEES



## HOVER FLY



## BEE HOUSES

Structures Straws, tubes, wood with holes drilled in them, may need screen

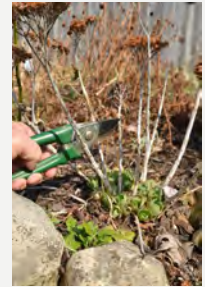
- Can be a source for disease and parasites
- Need to be maintained and cleaned every year
  - Emergence tub to empty the nest
  - Pipe cleaners
  - Half cup bleach per gallon



## YOUR GARDEN – CLEAN UP

Don't be tidy!

- Leave bare ground – avoid mulch and weed cloth
- Leave the leaves
- Leave the stems (cut at 18-20 inches)
- Gather stems and place out of the way



### Planning your garden – think like a pollinator.



## BEE LAWN

- More drought tolerant, needs less fertilizer

- Dutch white clover
- Yarrow
- Thyme (pink chintz)
- Self heal (Prunella)
- Roman Chamomile
- English lawn daisy
- Portland Lawn Seed



## COVER CROPS FOR HOME GARDENS

- Flowering **Cover crops** such as crimson clover, buckwheat, vetch, alfalfa and mustard attract **bees** and beneficial insects



## QUESTIONS???

