

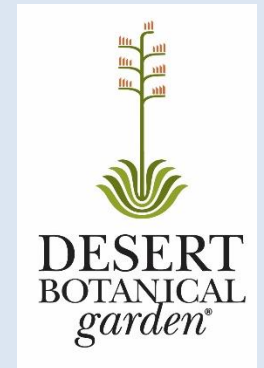


Planting for pollinators

Desert Botanical Garden

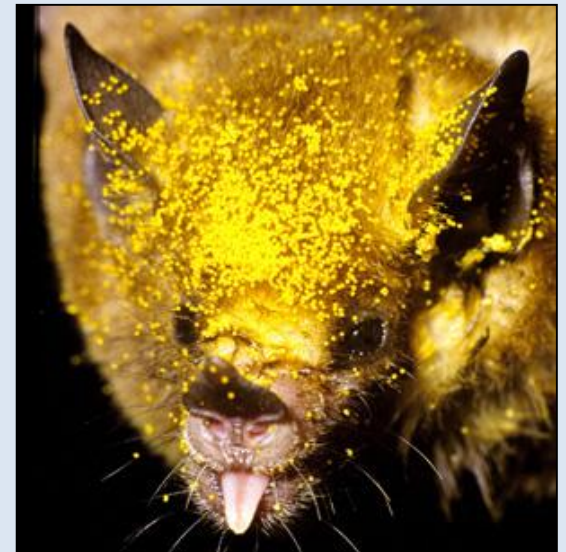
Dr. Kim Pegram

Insect Ecologist and Exhibits Specialist

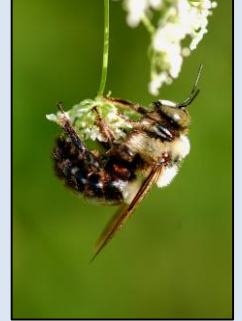


The importance of pollinators

- The majority of angiosperms (flowering plants) rely on animals for pollination
- Pollination is a valuable ecosystem service
 - 15-30% of US diet is a result of insect pollination
 - 80% of worldwide food plants rely on pollinators
 - Estimation of pollination services is \$112 billion annually



Biodiversity of pollinators



Pollinator numbers

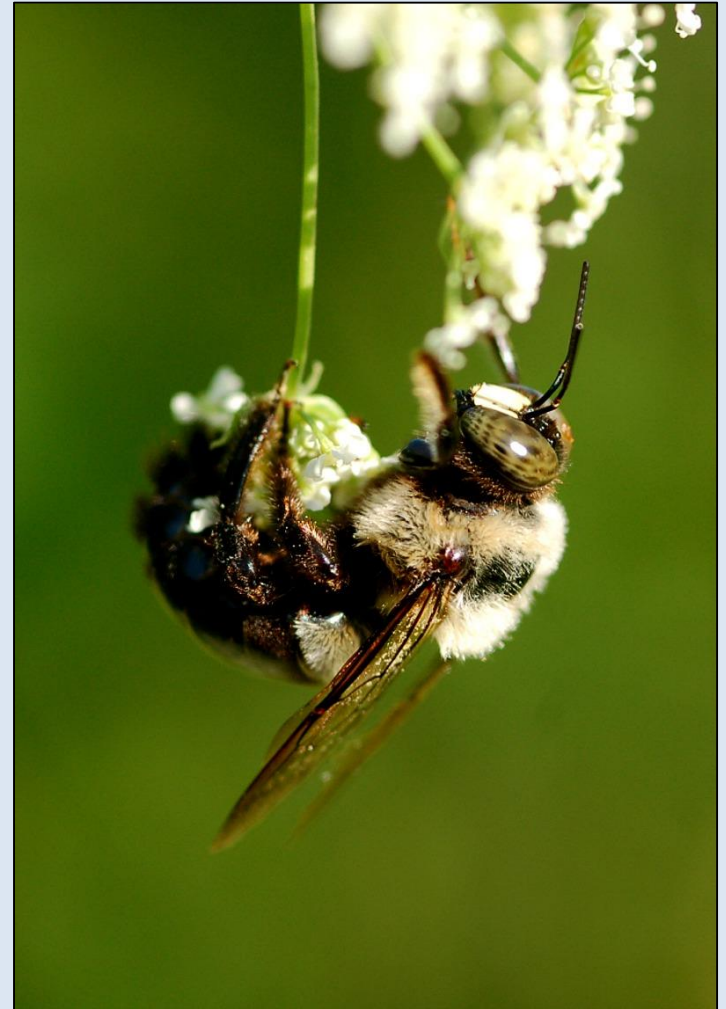


- Southwest has over 1,000 species of bees
- 330+ butterfly species in Arizona
- 18 species of hummingbirds



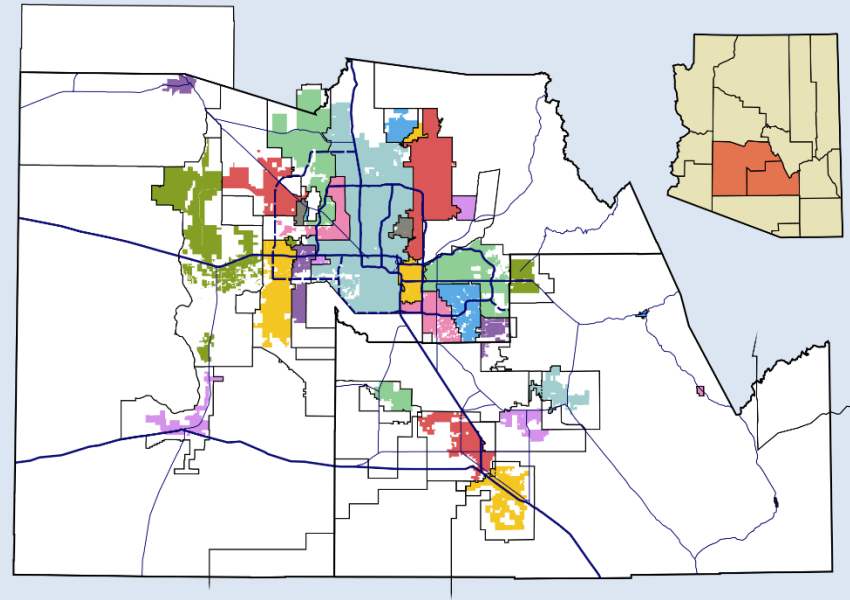
Pollinator decline

- Estimated that 200 vertebrate and 10,000 insect pollinator species are at risk
- Due to loss of habitat and pesticide use

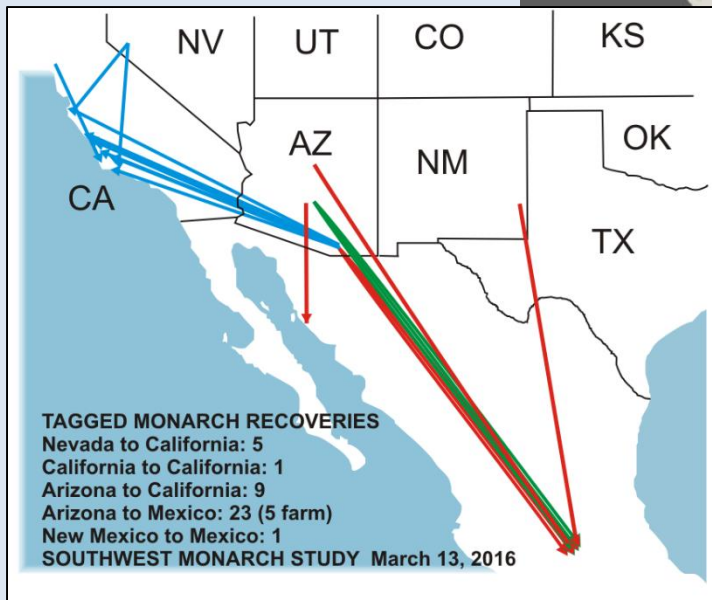
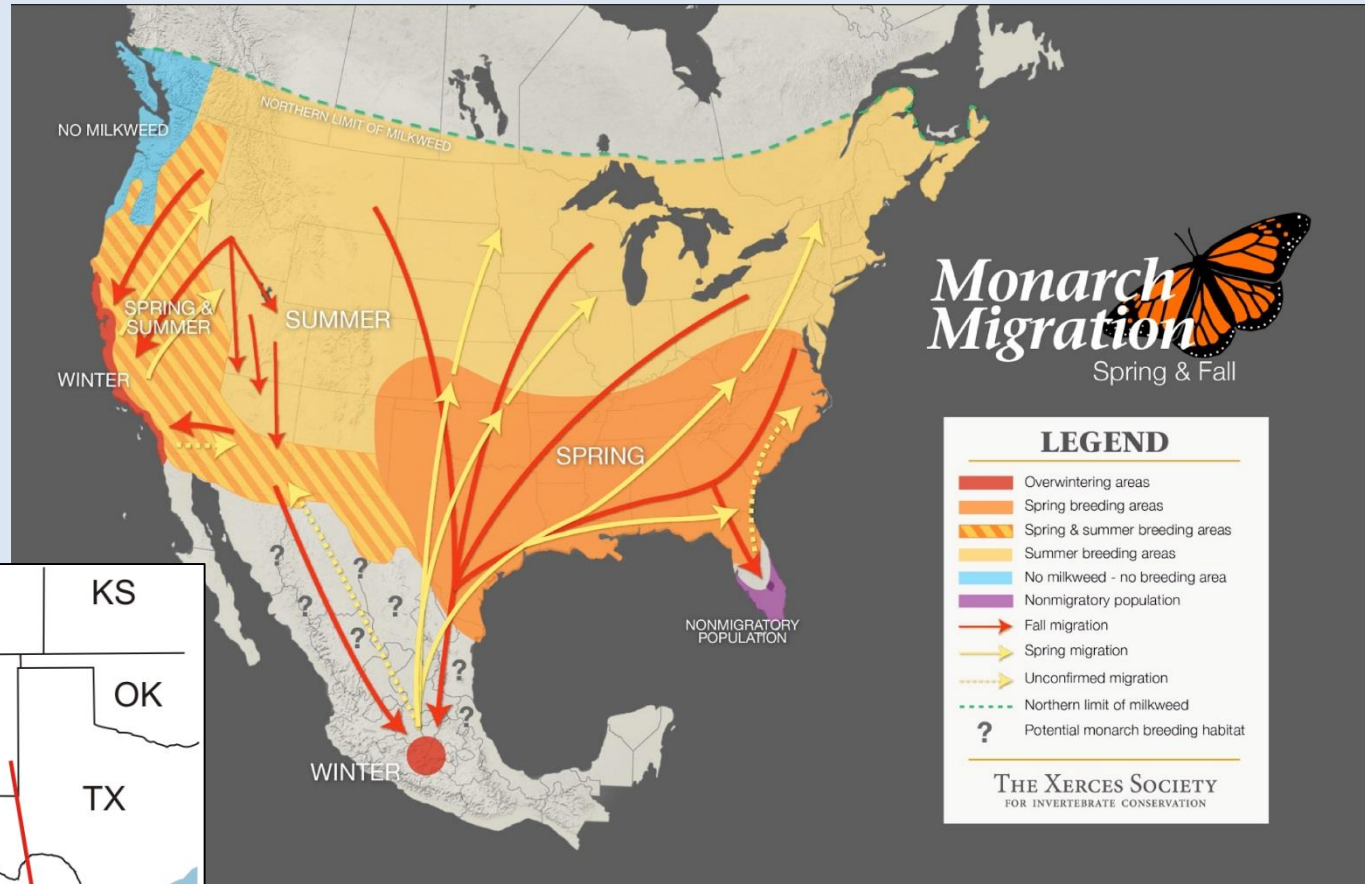


Development in Phoenix

- Large land area developed without many native resources
- Create “habitat stepping-stones” for migratory animals

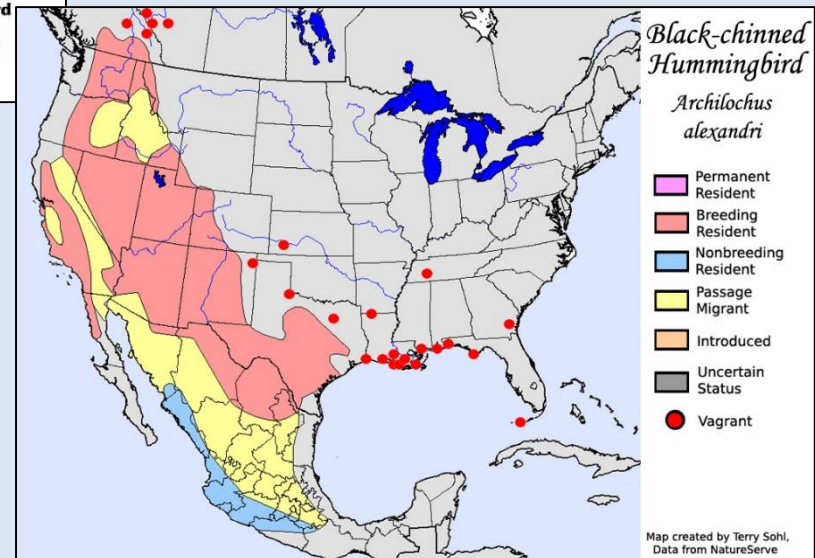
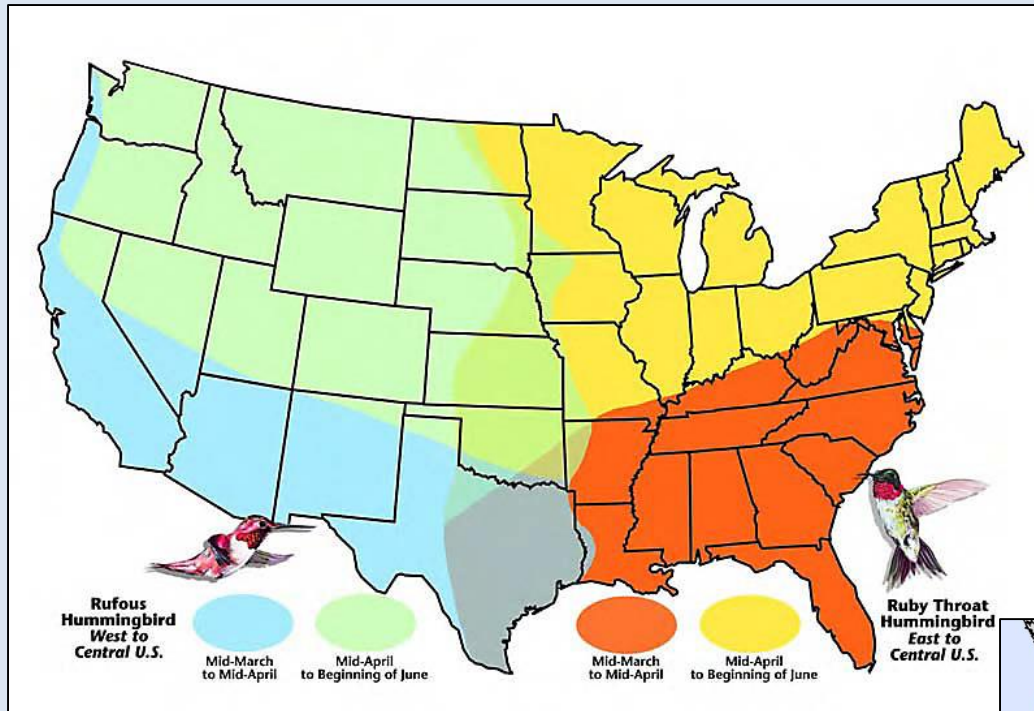


Monarch migration through AZ



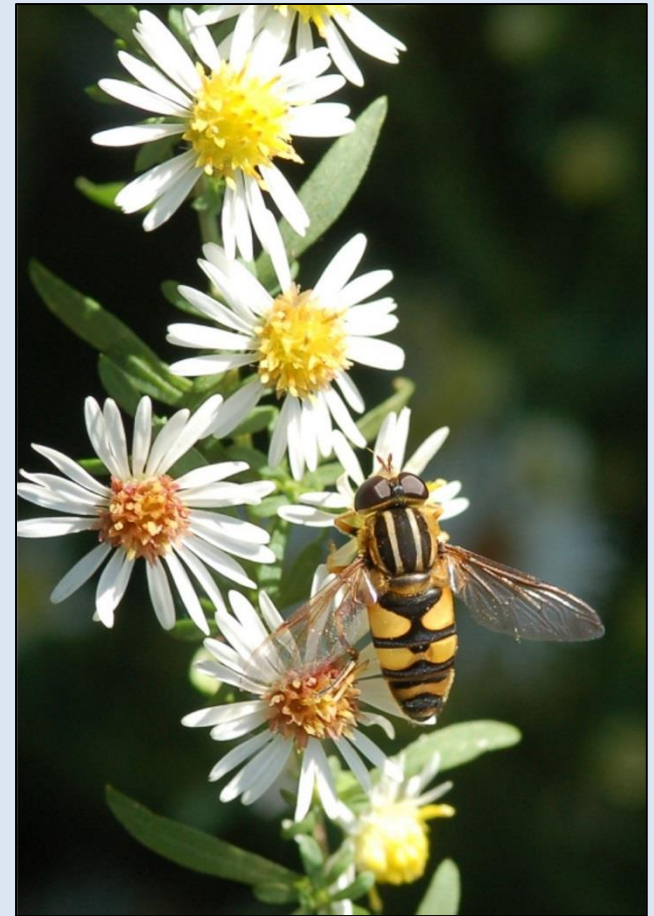
Southwest Monarch Study, swmonarchs.org

Hummingbird migration and breeding



How can we support pollinators?

- Choose native plants that will flower throughout the year
- Don't use pesticides
- Provide abiotic resources



Plant perspective

- Plants need pollinators to carry pollen from one plant to another
- Then the plant can produce fruit and seeds
- Adapted to attract and sometimes reward pollinators



Chemical cues (scent)



Visual cues (color, shape, size)

Pollinator rewards

- Pollen
- Nectar
- Also, floral tissues, shelter, brood shelter, oils, and meeting places



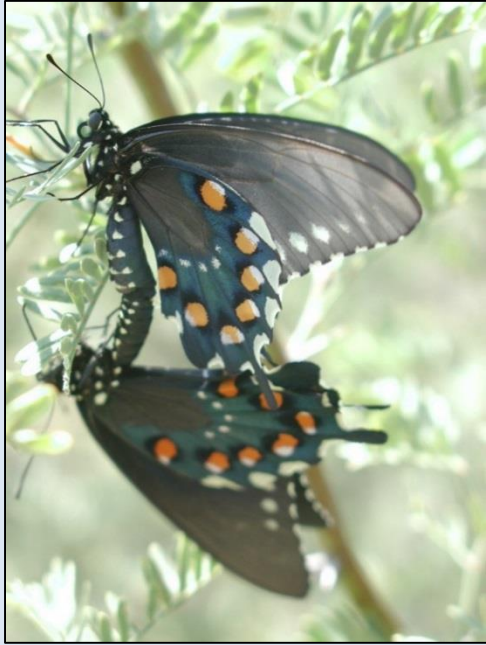
Pollinator perspective

Pollinators need those rewards to survive

- Butterflies need to visit about 40-100 flowers a day to get the nectar they need
- Hummingbirds need 1.5 – 3 times their body weight in nectar
- Lesser long-nose bat needs 21 saguaro flowers per night



Pollinators also need shelter



Caterpillars need hostplants to eat

- Many caterpillars are specific about what plants they eat
- They need a lot of food



Monarch (*Danaus plexippus*)



Milkweed (*Asclepias* spp.)

Other habitat components

- Sunny spots for warmth
- Access to water
- Insect hotels (native bee and insect habitat)
- Nesting material



Registering pollinator habitat

You can register monarch habitat as a Monarch Waystation through Monarch Watch
monarchwatch.org/waystations/



Or participate in the Million Pollinator Garden Challenge
millionpollinatorgardens.org

See examples of pollinator habitat

Harriet K. Maxwell Desert
Wildflower Trail



Center for Desert
Living Trail

Additional resources

- Desert Botanical Garden-dbg.org-gardening and horticulture-Desert Gardening Guides
- *Gardening for Butterflies* – The Xerces Society
- *Pollinators of the Sonoran Desert* – Arizona Sonoran Desert Museum
- *Attracting Native Pollinators* – The Xerces Society Guide
- *Wild About Gardening* – Tucson Botanical Gardens
- North American Pollinator Protection Campaign-www.pollinator.org
- USDA Forest Service-Pollinators-
<http://www.fs.fed.us/wildflowers/pollinators/index.shtml>
- USDA-Insects and Pollinators-
<http://www.nrcs.usda.gov/wps/portal/nrcs/main/national/plantsanimals/pollinate/>
- Mountain States Wholesale Nursery-www.mswn.com

Thank you!

QUESTIONS?

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