

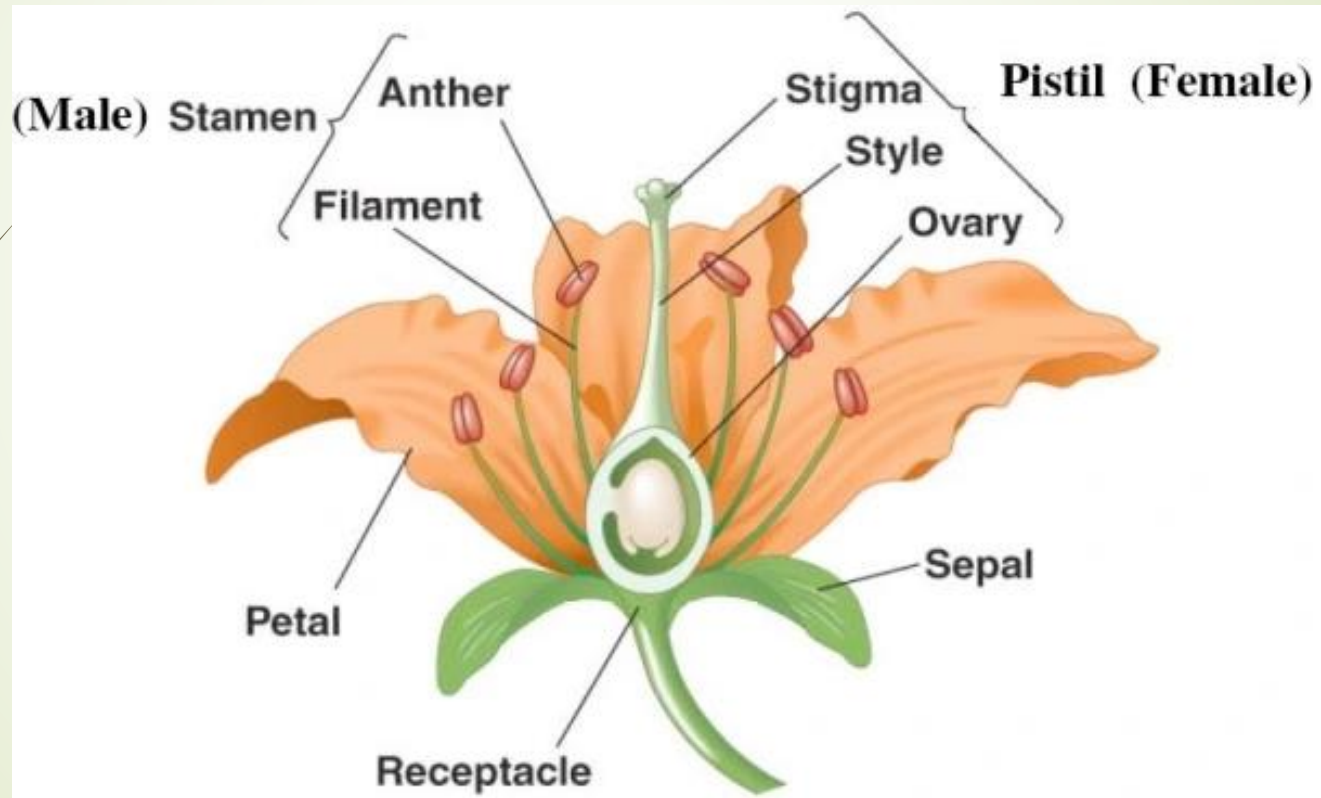


Gardening for Pollinators

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What is pollination?





Why bother?

- Over 60% of food crops need a pollinator
 - Pollination is a \$3.1 billion industry – both pollinated food and pollination products
- Pollinators have been in decline
 - Loss of habitat
 - Lack of ecosystem diversity
 - Excessive pesticide applications



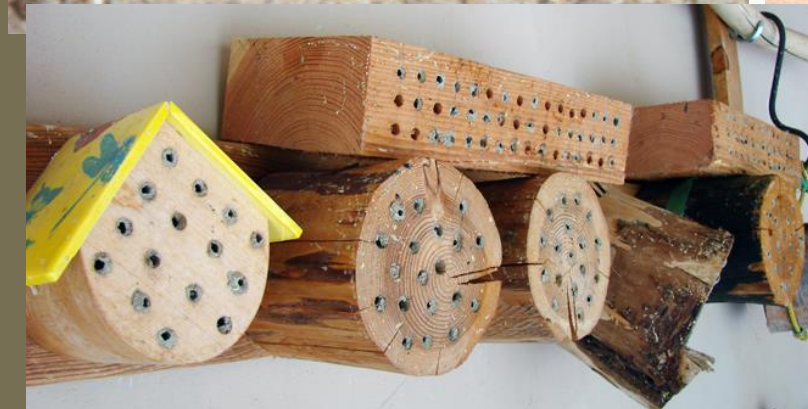
How do we provide for them?

- Pollinators need what every other animal needs
 - Shelter
 - Water
 - Food

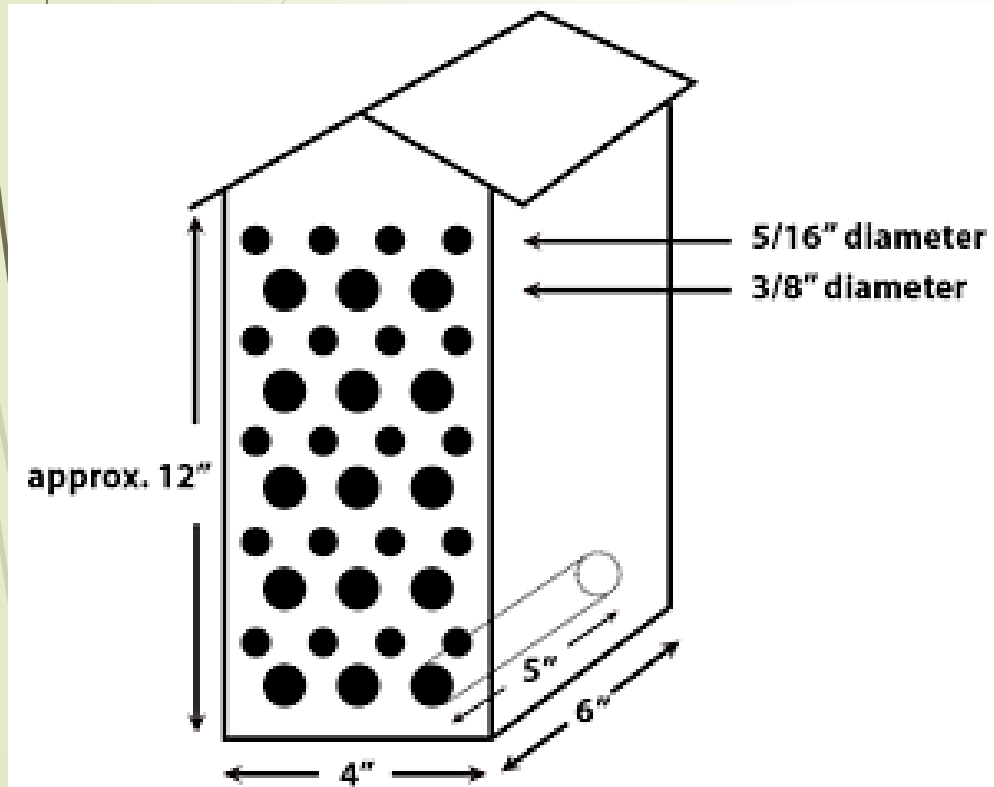


Shelter

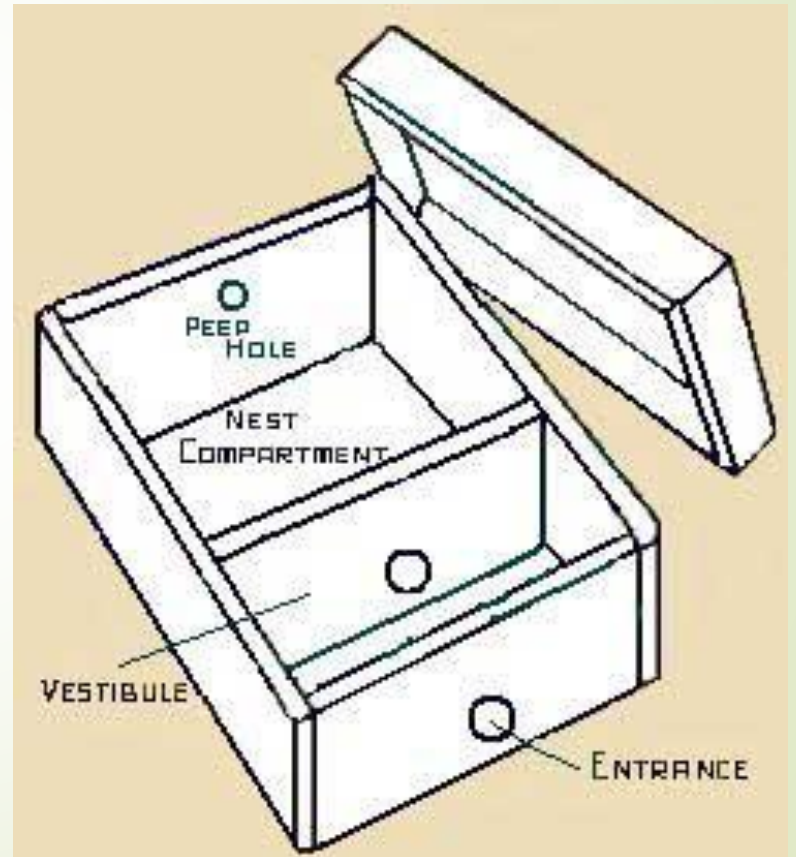
- Nesting and Overwintering sites
 - Honeybees – Hivebox
 - Un-mulched areas - ground nesting bees
 - Bee condos, rotting logs, stumps, twigs with pithy center – wood nesting bees



Bee Condos



Bumblebee Hives



Shelter

- Hummingbirds nest in deciduous trees & shrubs
 - Often Elms & sycamores
 - 10-20 ft above ground
 - Near or above water
 - Reuse nest from year to year
- Migrate South every Winter



© 2013 Thomas Strich and Maria Mahar

www.hummingbirdpictures.net

Shelter

- ➡ Butterflies and Moths
 - ➡ Less formal shelter
 - ➡ Shady areas to cool off
 - ➡ Shrubs & Trees
 - ➡ Large flat rocks to warm



Shelter



- For beetles and flies
 - Loose debris to hide
 - Mulch, logs, rocks
 - Trees with loose bark
 - Shrubs to stay away from predators

Water

- For insects:
 - Shallow puddles and moist areas are needed
 - Rocks and pebbles provide minerals for butterflies



Water

- For Hummingbirds
 - Most of food is water
 - Still needed for Washing, Cooling, and Drinking
 - Keep water shallow & clean
 - Shallow birdbath / pan
 - Garden sprinkler
 - Waterfall/ stream
 - Misters



Food!



Food (plants) for Thought

- Important to create a diverse habitat
 - Attract many different pollinators
 - Bloom at different times
 - Lessens impact of disease of one plant species



Millie Davenport, ©2015 HGIC, Clemson Extension

Food plants



- Pollinators will be attracted to larger areas of flowers
 - At least 3 ft x 3 ft – bare min.
 - Allows them to be more efficient and easier to forage

Food plants

- ▶ Plant with the seasons in mind
 - ▶ Choose plants that will provide nectar and pollen during different times of the year
 - ▶ Early Spring, Late summer/ Fall are crucial times
 - ▶ Not much else is blooming
- ▶ Herbs and annual flowers often flower until the first frost and can help provide season-long



Food Plants



- Spring/ Early Summer
 - Serviceberry, Yellowwood, Locust, Redbud, Buckeye
 - Wild columbine, larkspur, Foxglove, Blazing Star
- Late summer/ Fall
 - New England Asters, Tall Coreopsis, Joe-pye Weed, Sneezeweed, obedient plant, Cardinal Flower,

Avoid Doubles

- Avoid hybrids with 'double' flowers
 - Used natural mutations to create
 - Usually anthers (pollen – producing) are misformed as flower petals instead
 - No room for pollinators to get in



Food plants

- Limit pesticide usage
 - Native plants are adapted to climate, pests, and diseases
 - Good garden sanitation is key
 - Proper mulch and hand pull weeds
 - Use 'soft' pesticides only when necessary
 - Strong stream of water
 - Insecticidal soap
 - Sulfur/ Bordeaux mixture/ Copper



Food Plants

- Diverse planting will encourage predaceous insects to help with pest



Food Plants

■ For Butterflies:

- Important to provide host plants for caterpillars
- Very specific plants for different species
- Example:
 - Black Swallowtail caterpillar only feeds on plants in carrot family
 - Dill, Carrots, Fennel, Parsley etc.



Food Plants

For Hummingbirds

- Native plants are preferred
 - Use annuals to help fill in when native perennials bloom
- Bright red flowers that have deep throats

➤ Examples

- Buckeyes
- Rose Mallow
- Trumpet vine
- Cross vine
- Cardinal Flower
- Phlox
- Bee Balm
- Foxglove
- Columbine



Food Plants



➤ Be sure to add plants that attract a lot of insects

➤ Hummers need lots of insects to provide protein to chicks



Hummingbird Feeders

- Set out mid- April
 - Out before they migrate through
- Keep them at least 15 ft from house
 - They don't like the confinement
- Place ripe fruit near by to increase feeder acceptance
- By late July, begin southward migration
 - Leave up as long as possible, they **will** migrate regardless of food availability



Other Foods

- Help entice with them with:
 - Laying out slices of over-ripe fruit
 - Mash fruit and stale beer together and soak in sponge
 - Set out Hummingbird Feeders
 - 4 parts water + 1 part sugar



Other foods

UK researchers find pesky lawn weeds good for pollinators

BY KATIE PRATT

LEXINGTON, KY. For many homeowners, dandelions and white clover are nothing more than a nuisance, but University of Kentucky entomology researchers have found they are a welcome presence to many pollinator species.

UK entomologist Dan Potter and Jonathan Larson, University of Nebraska extension



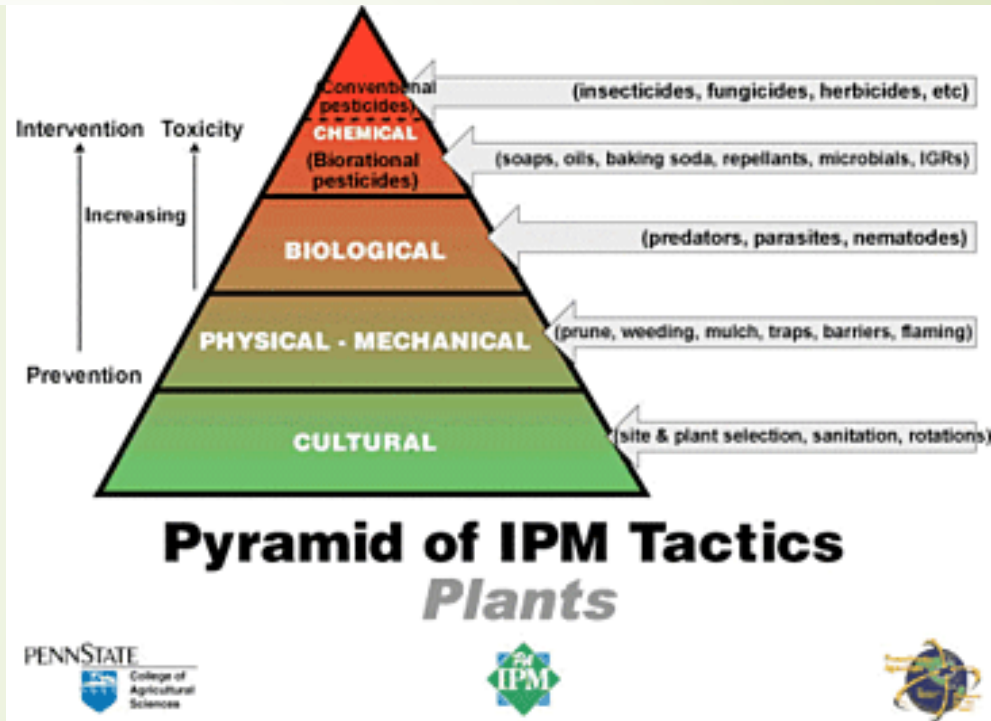
A bumble bee on white clover

PHOTO: Katie Pratt, UK Agricultural Communications

- Lawn weeds are helpful to pollinators too!!!
 - Limit pesticide applications here too.
 - Clover provides fertilizer for lawn
 - If applications are necessary: Mow lawn before to remove blooms

Other areas of the yard

- Minimize other pesticide applications
 - Use Integrated Pest Management (IPM) practices to limit necessity
 - Sanitation
 - Proper spacing
 - Mulching
 - Water during dry periods



Other areas of yard

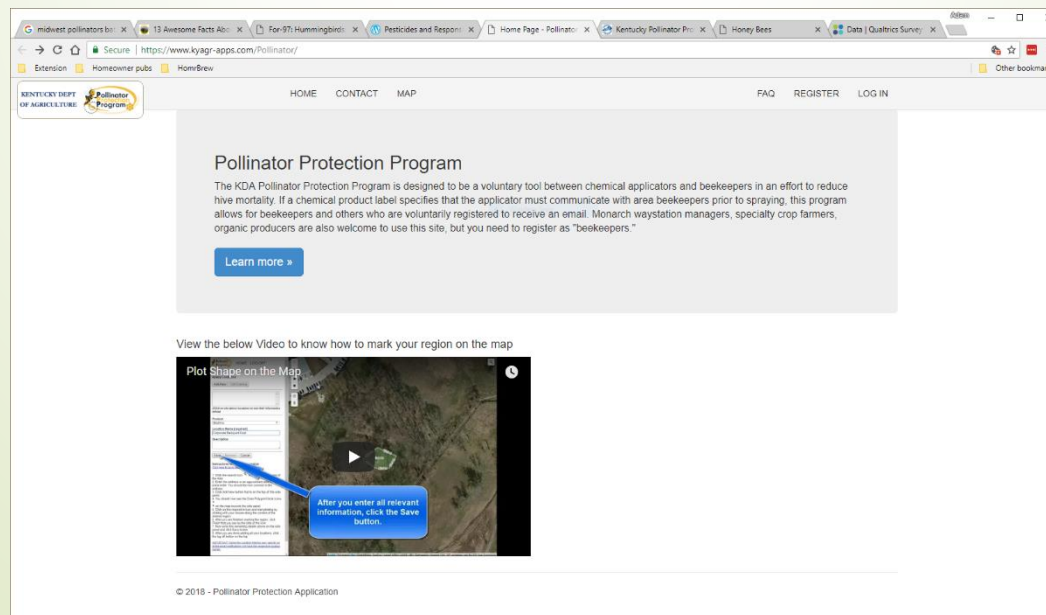
- If sprays are necessary,
 - Spray when the pollinators aren't visiting
 - Don't spray when in flower
 - Spray in the evening (dusk) when they go home
 - Use the 'softest' pesticide
 - Ex: Horticultural oils, Insecticidal soaps
 - Ex: Copper, Sulfur
 - Use low pressure sprays, creates larger droplets that don't drift as much
 - Harder to get good coverage

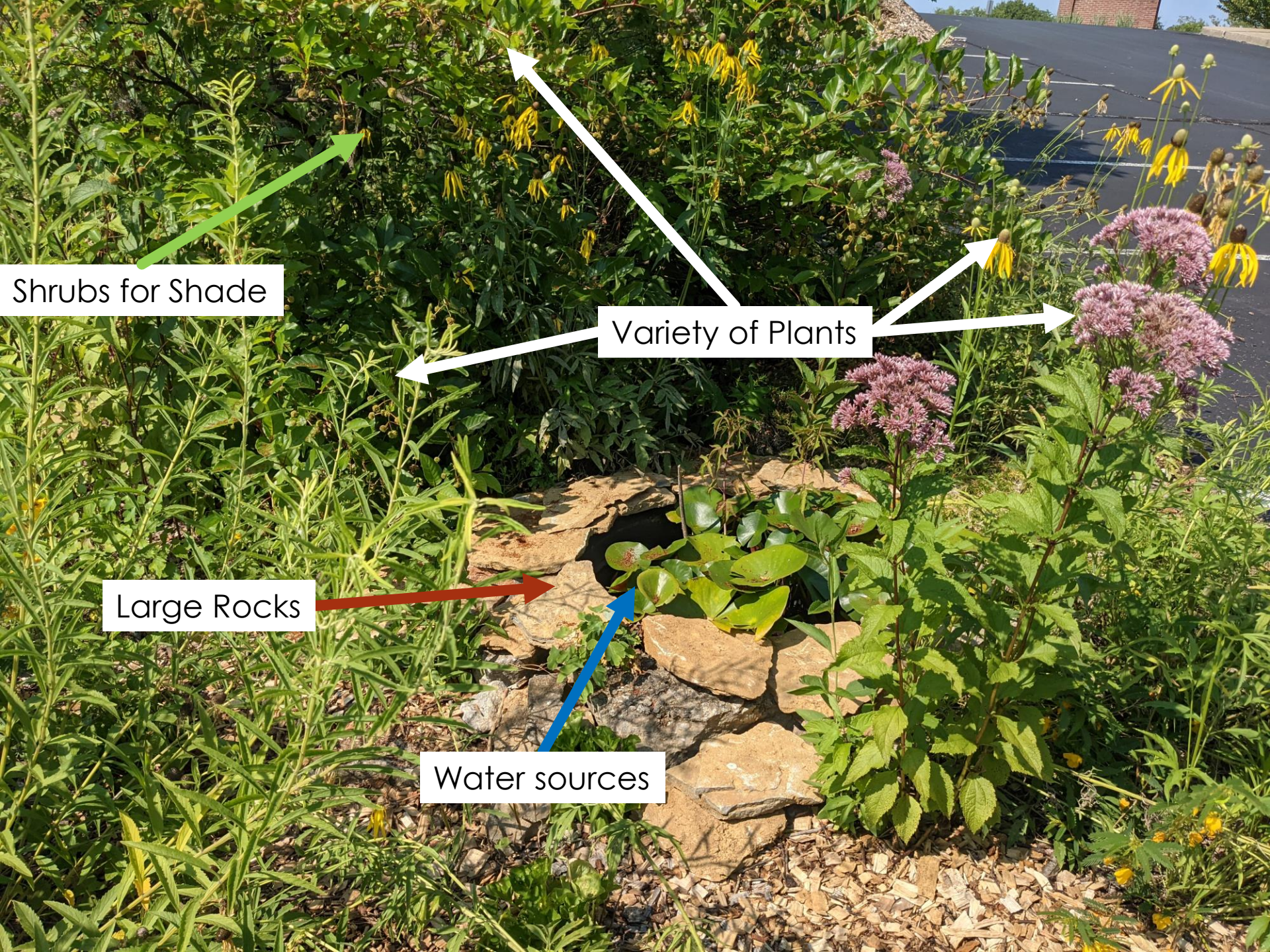


Other areas of yard



- Follow label's Pollinator Protection Plan,
 - Alert any beekeepers in the area a 48 hours before hand.
 - KDA has on-line anonymous program that applicators can use to notify beekeepers within 5 miles of fields to be treated
 - <https://www.kyagr-apps.com/Pollinator/>





Shrubs for Shade

Variety of Plants

Large Rocks

Water sources

Questions?

