

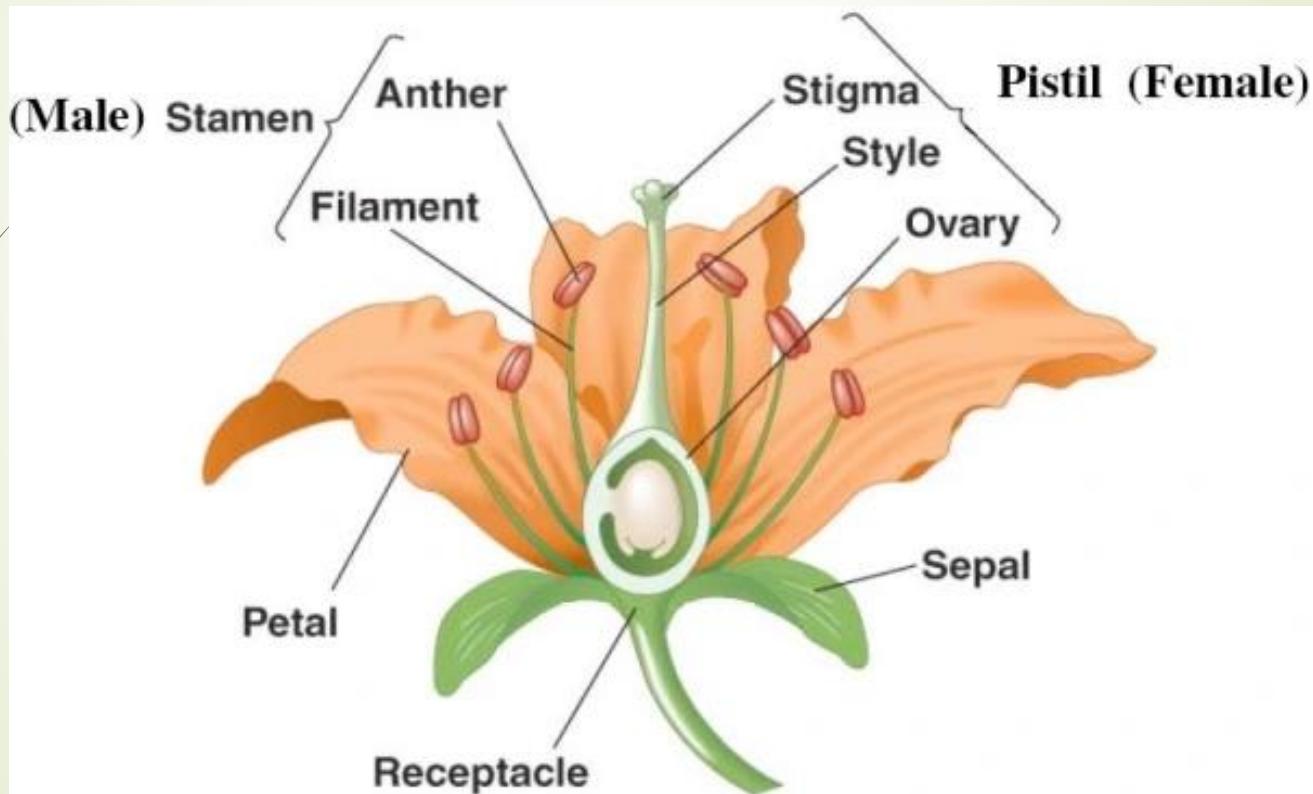


Gardening for Pollinators

Adam J Leonberger

Franklin County Extension Agent for Horticulture

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?

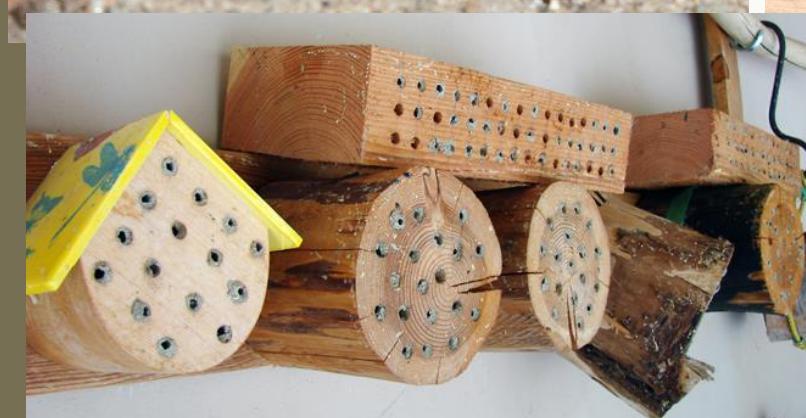
- ▶ Pollinators need what every other animal needs
 - ▶ Shelter
 - ▶ Water
 - ▶ Food



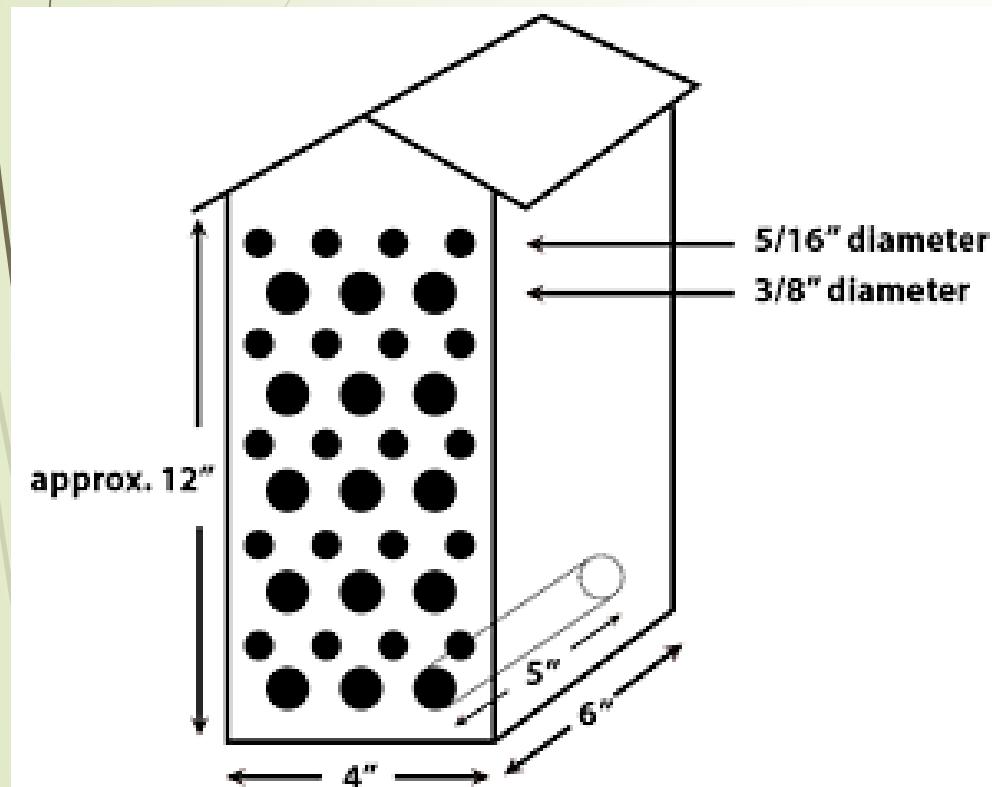


Shelter

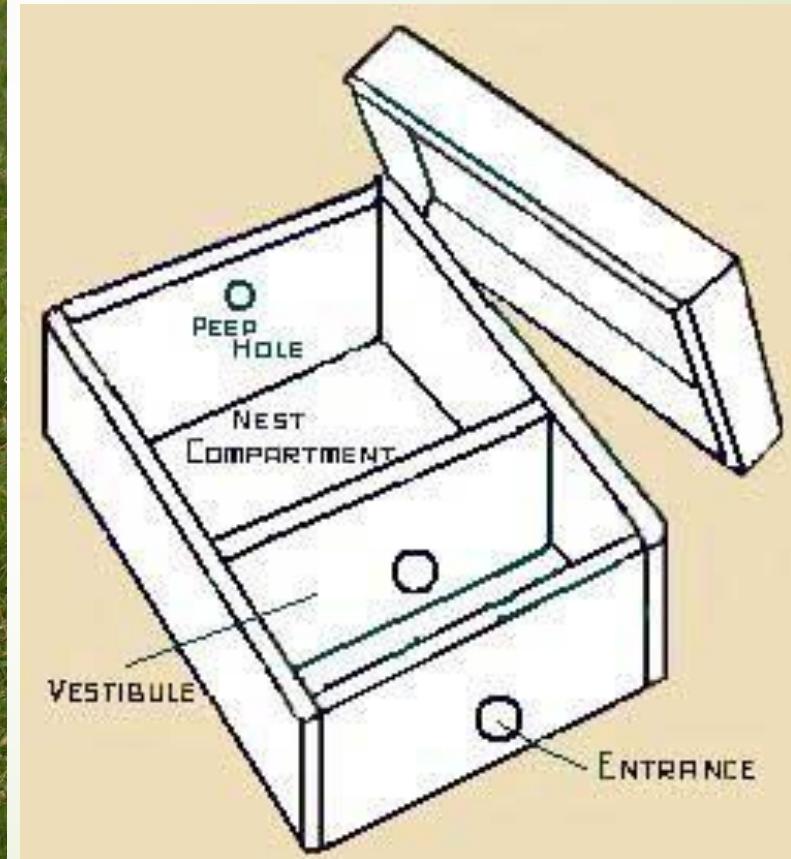
- ▶ Nesting and Overwintering sites
 - ▶ Honeybees – Hivebox
 - ▶ Un-mulched areas - ground nesting bees
 - ▶ Bee condos, rotting logs, stumps, twigs with pithy center – wood nesting bees



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!



Linda Morgan

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



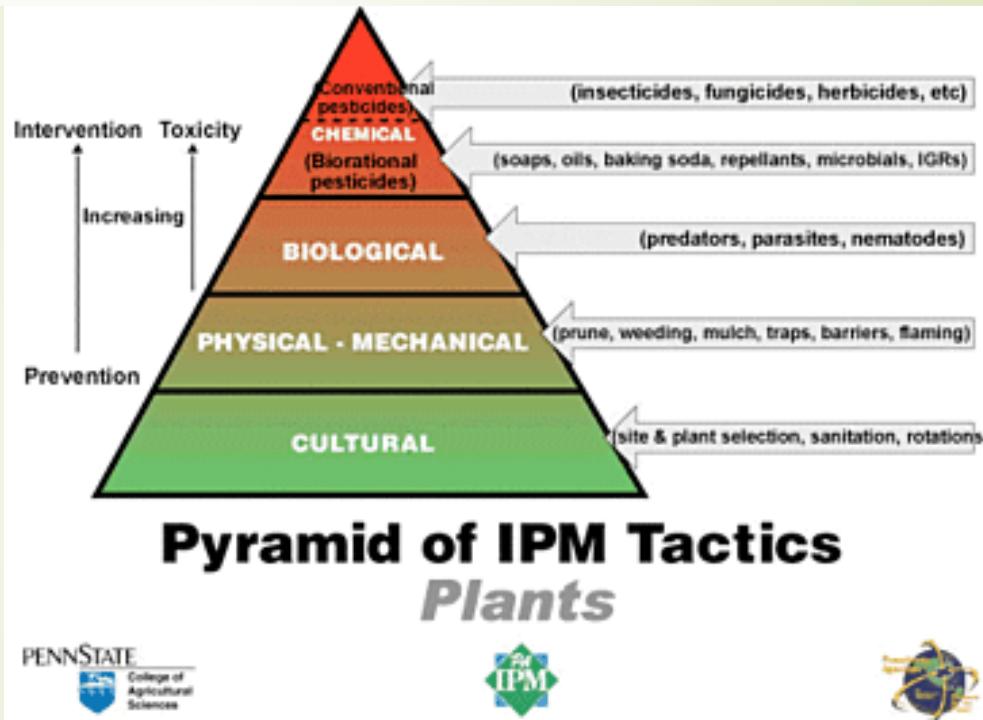
A bumble bee on white clover

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

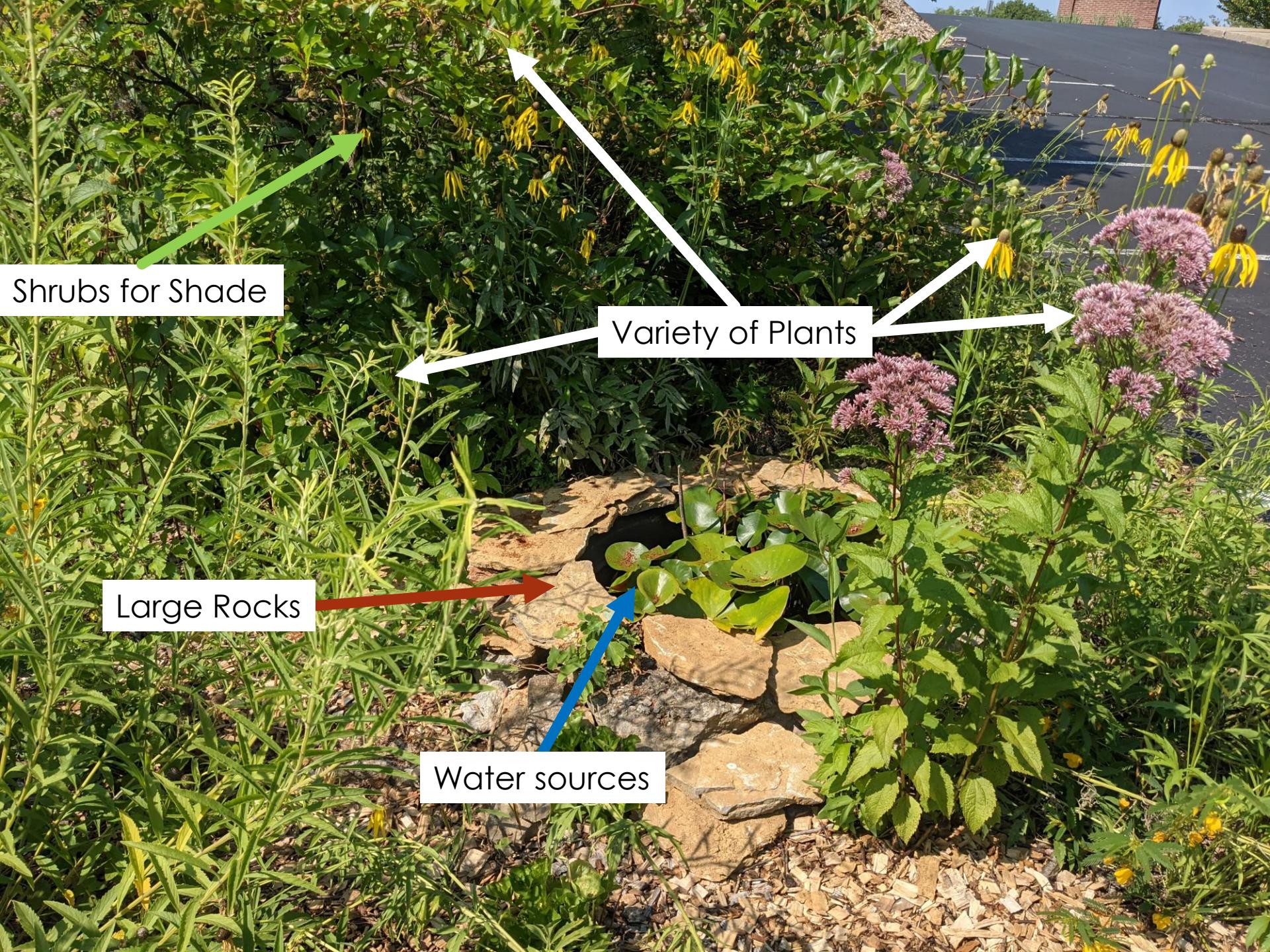


Other areas of yard



- 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/>

A screenshot of a web browser showing the Kentucky Pollinator Protection Program. The page has a header with the Kentucky Dept of Agriculture logo and navigation links for HOME, CONTACT, MAP, FAQ, REGISTER, and LOG IN. The main content area is titled 'Pollinator Protection Program' and describes the program as a voluntary tool for applicators and beekeepers to reduce hive mortality. It includes a 'Learn more >' button. Below this, there is a video player with the text 'View the below Video to know how to mark your region on the map' and a thumbnail showing a map with a plot shape. A blue callout box points to the video thumbnail with the text 'After you enter all relevant information, click the Save button.' The footer of the page includes a copyright notice: '© 2018 - Pollinator Protection Application'.



Questions?

