

# Pollinators of Texas

Wizzie Brown

Extension Program Specialist- IPM

Texas A&M AgriLife Extension Service



1



## Insect orders with pollinators

Hymenoptera

Lepidoptera

Coleoptera

Diptera

2



# Coleoptera: Beetles

3



## Coleoptera

Probably first insect pollinators of plants in Jurassic period

Flower preference:

- Bowl-shaped with sexual organs exposed
- White, to dull white or green
- Strongly fruity
- Open during the day
- Moderate nectar producers
- May be large solitary flowers
- May be clusters of small flowers

4



## Diptera

Generalist foragers

Sparse hairs

### Fly Flowers

- Pale and dull to dark brown or purple & yellow/ orange
- Sometimes flecked with translucent patches
- Putrid order, like rotting meat , carrion, dung, humus, sap and blood
- Nectar guides not present
- Produce pollen
- Flowers are funnel like or complex traps

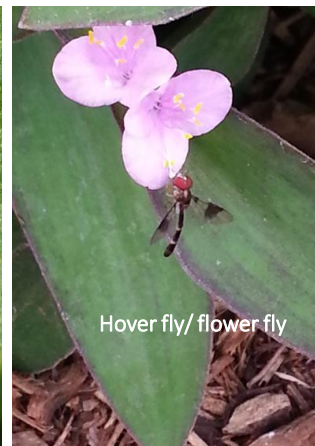
5



Tachinid fly



Long-legged fly



Hover fly/ flower fly



House fly

## Diptera: Flies

6





## Lepidoptera Butterflies & Moths

Flower shape: open/ bowl, some ray/ flat,  
bunched flowers/ umbel, tubular

Prefer tubular or umbel

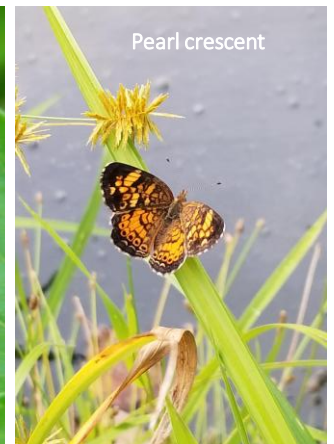
Butterflies: open in day

Flower color: white, purple, pink, red,  
yellow, orange

Moths: open in evening

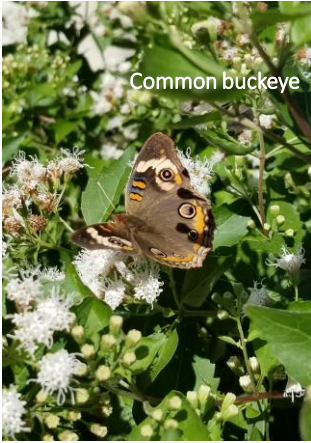
Fragrant, white & dull/ light colored  
flowers

7



## Lepidoptera: Butterflies & Moths

8



Common buckeye



Queen



Red admiral



Great purple hairstreak

## Lepidoptera: Butterflies & Moths

9



## Hymenoptera: Bees & Wasps

Wasps: honey wasps, paper wasps, mud daubers, yellowjackets

Social bees: Bumble bees (native) & Western honey bee (non-native)

Solitary bees: mason bees, leafcutter bees, digger bees, longhorn bees, sweat bees, plasterer bees & more



10



<https://www.psu.edu/news/agricultural-sciences/story/quantity-over-quality-different-bees-are-attracted-different-floral>



## Hymenoptera: Bees & Wasps

### Bees

Flower color: blue, violet, UV

Shape: flat umbels, horizontal, "lip", single petals

Floral scent

### Wasps

Flower color: yellow & green; some white & pink

Strong floral scent

Readily available nectar

11

Guinea paper wasp



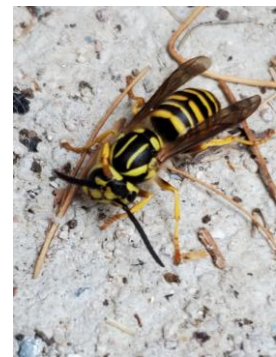
Mexican honey wasp



Yellow-legged mud dauber



Yellowjacket wasp



## Hymenoptera: Wasps

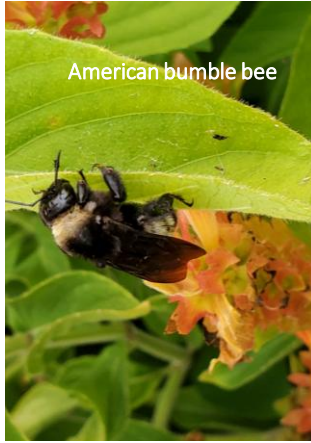
12



Longhorn bee



Furrow bee



American bumble bee



Sweat bee

# Hymenoptera: Bees

13



Cuckoo bee



Small carpenter bee



Southern carpenter bee



Leafcutter bee

# Hymenoptera: Bees

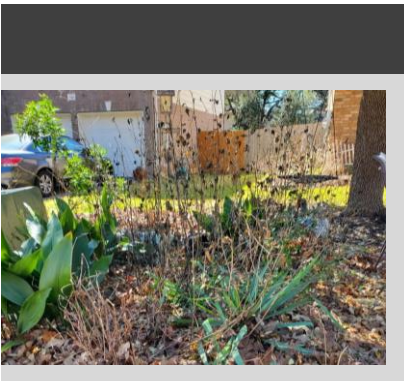
14





- Plant in layers by their mature height – canopy (trees), lower canopy, shrubs, grasses, herbaceous plants (herbs, vegetables, flowers)
- Leaving a little “mess” – logs, snags, twig bundles, and leaves
- Rocks and bare (unmulched) soil
- Handmade or “artificial” habitats (NOTE: these should be sheltered and east to SE facing)

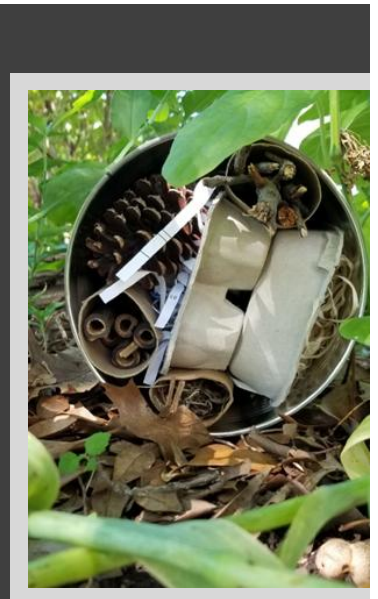
15



Overwintering  
areas for insects



Fallen leaves  
Hollow stemmed plants  
Partially buried logs



16



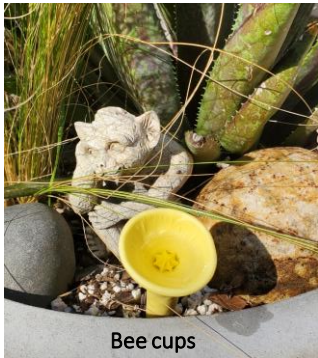


# Nesting materials

17



Provide **SAFE** water sources



Bee cups

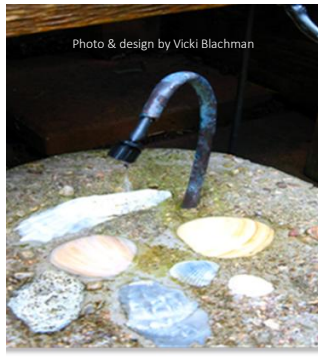


Photo & design by Vicki Blachman



18

## My contact information

Wizzie Brown

[ebrown@ag.tamu.edu](mailto:ebrown@ag.tamu.edu)

<https://www.facebook.com/wizzie.brown.3>

Instagram: @urbanipm

YouTube channel: Wizzie Brown



This work is supported by the USDA-NIFA Extension Implementation Program, project award no. 2024-70006-43508, from the U.S. Department of Agriculture's National Institute of Food and Agriculture. Any opinions, findings, conclusions, or recommendations expressed in this publication are those of the author(s) and should not be construed to represent any official USDA or U.S. Government determination or policy.