**Pollinator Gardens**

1. What are pollinators? What are native pollinators? Who are they?
2. **Bees, Butterflies & Hummingbirds**
   1. **Pollinators include**; bees, insects, birds, and other animals that move pollen from one flower to another, thereby fertilizing plants and allowing them to reproduce
   2. **Native pollinators** are those native to a specific region
      1. Ergo. The blue orchard bee and numerous bumble bees

Pollinator Traits Table

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| --- | --- | --- | --- | --- | --- | --- | --- |
| **Flower Trait** | Honey Bees | Native bees | Moths | Butterflies | Flies | Bats | Hummingbirds |
| Color | White, yellow, & blue flowers | White, yellow, Orange, & blue flowers | Gray, white, & silver fragrant flowers | Red, orange, & purple flowers | Stripped flowers (less showy flowers) | Dull white, green, purple (night blooming flowers) | Red, pink, fuchsia, & purple flowers |
| Odor | Fresh, mild, pleasant | Fresh, mild, pleasant | Strong, sweet; emitted at night | Faint but fresh | Putrid | Strong musty | None |
| Nectar | Usually present | Usually present | Ample; deeply hidden | Ample; deeply hidden | Usually absent | Abundant; somewhat hidden | Ample; deeply hidden |
| Pollen | Limited; often sticky and scented | Limited; often sticky and scented | Limited | Limited | Modest in amount | Ample | Modest |
| Shape | Shallow; have landing platform, tubular | Shallow; have landing platform, tubular | Regular; tubular without a lip | Narrow tube with spur; wide landing pad | Shallow; funnel like or complex & trap like | Regular; bowl shaped (closed during the day) | Large like funnel, cups, some perch support |

1. Why are pollinators important?  
   a. A pollinator’s job
   * 1. Flowering plants rely on insects or other animals to carry their pollen to the stigmas of other plants
     2. Plants must offer a reward (sugary nectar, and protein-rich pollen) for the pollinator to visit and carry their genes off to another flower

b.Production of agriculture

* + 1. Approximately 30 percent of food and fiber crops depend upon pollinators for reproduction
    2. U.S. grows over 100 crop plants that are pollinated by insects and animals
       1. Primary examples include:  Almonds, apples, pears, citrus fruits, cherries, pumpkins, cucumbers, blackberries, cranberries, raspberries, strawberries, blueberries, melons, tomatoes soybeans sand sunflowers.
  1. Importance of native pollinators
     + - 1. Significant pollinators, can be more effective than honey bees
         2. 15 percent of combined value of U.S. fruit, nut, vegetable and field crop production can attributed to pollination services provided by native bees

1. Plant Diversity  
   A. Choose a variety of plants with overlapping and sequential bloom periods.
   * 1. This provides food for pollinators throughout the seasons.
     2. Helps pollinators at each stage of their lives
     3. Have single blooming flowers in the same areas with long blooming flowers
     4. Eliminate your use of pesticides
   1. Bigger and closer habitats patches are generally better
2. They’re easier to spot from the air and easier to go from plant to plants
3. Smaller, isolated patches can still attract pollinators
4. Pollinator-Friendly Plants

A. Select plants based on the type of pollinator gardeners your trying to attract

* + 1. Perennial herbs, shrubs and trees are best for pollinators
    2. Sun Exposure
       1. Most pollinator-friendly plants prefer sites with full sun exposure and are mostly open
       2. A southern location can provide the warmest habitat, but is not required

B. Plants to Avoid-ensure it’s not toxic before purchasing

1. Rhododendron-nectar is toxic to bees. The honey produced is unsafe for humans. (Alternate-Clematis)
2. Azaleas-toxic to bees. (Alternate- Foxgloves; the honey is ok
3. Flower or Angel’s Trumpet-nectar can cause blood death in bees.
4. Stargazer Lily-pollen is poison to bees. (Alternate- Hollyhocks)
5. Common Threats to Pollinators
6. Highways, housing development, mega farms, golf courses, and huge new shopping centers
7. Over use of pesticides  
   I. Hybrid variety of plants not adequate for pollinators
8. Noise pollution  
   I. Some pollinators communicated through sound  
   II. Noise pollution and destruction