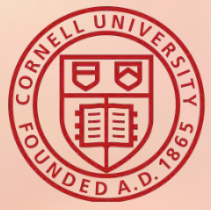


Cornell Cooperative Extension
Jefferson County



Winter Wildlife Webinar Series: Pollinators and What Plant Species Attracts Them

Presented By: Cierra Williams, Horticulture & Natural Resources Educator
Slides adapted from Sue Gwise, Former CCE Jefferson

Question #1

- What pollinators are you familiar with now?

Why do we need to encourage pollinators?

- Pollinators are *keystone species*- a large number of other species depend on them for survival
- Abundant pollinators are indicative of healthy ecosystems
- Pollination creates a seed → perpetuates the species
- 80% of flowering plants and most native plants need insects for adequate pollination



Without pollinators...



These Photos Capture The Startling Effect Of Shrinking Bee Populations

In rural China, humans pollinate flowers by hand.



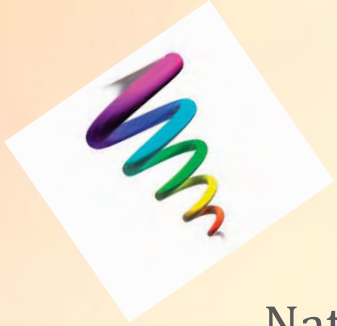
DECLINE OF BEES FORCES CHINA'S APPLE FARMERS TO POLLINATE BY HAND

After Bee Die-Off, Chinese Apple Farmers Resort to Hand Pollination



Downward spiral...

Pollinators disappear



Native plants disappear



Invasive plants move in



Birds and animals move out

What can you do to support pollinators?



#1- Do not plant invasives!

Norway Maple

>Red or Sugar Maple, Red Oak

Wintercreeper

>Ferns

Japanese Barberry

>Chokeberry

>Ninebark

Burning Bush

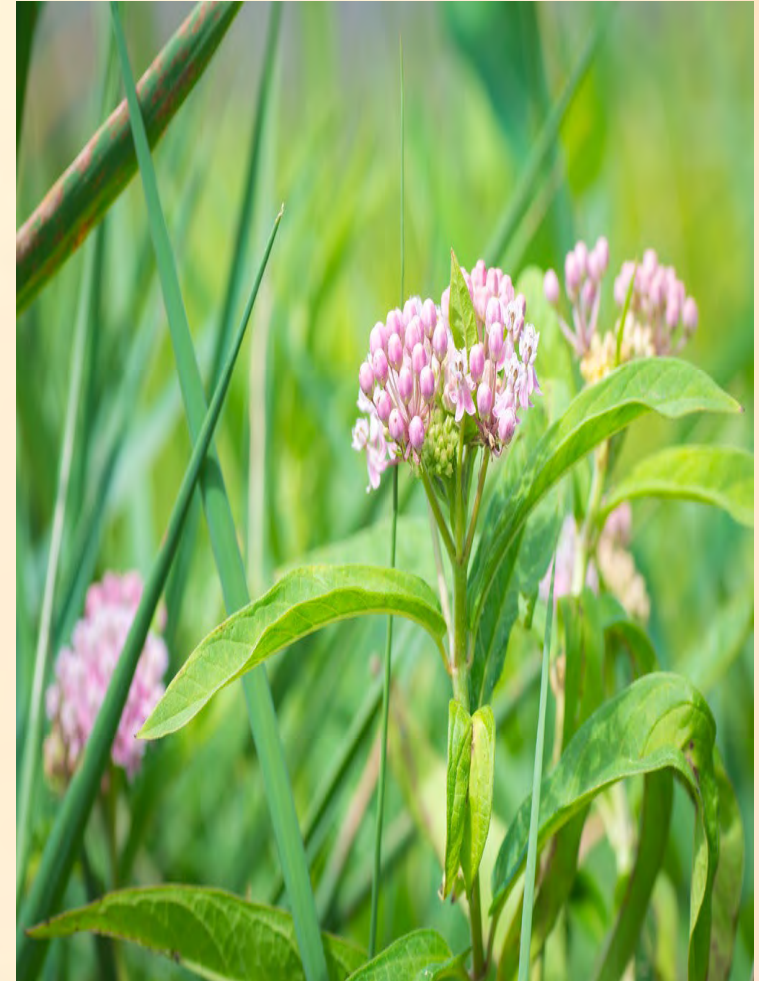
>Dogwood

>Chokeberry



#2- Favor Native Plants

- Native plants are adapted to our soil and climate conditions
- Native plants have fewer disease and insect issues
- Native plants are 'well-behaved'
- A healthy population of native plants can help prevent invasive species from invading an area.



[This Photo](#) by Unknown Author is licensed under [CC BY](#)

Favor Native Plants...

- Our native insects, birds, plants and animals all evolved together
 - Our native birds and insects know how to use native plants as a result of millions of years of evolution
 - When we plant native species we are adding something to the environment that native insects and birds recognize and can use for food and shelter.

Non-native plants provide less support to native pollinators!



Favor Native Plants...

- Native plants attract native insects which attract native birds
- 90% of all songbirds raise their young on caterpillars that feed on native plants



Caterpillars need food plants!

- Eating machines
- Often very specific as to what they will feed on- native species
- Adult females lay eggs on food plants
- Caterpillars are an important source of food for nesting birds to feed to their young- Protein

Native food plants → Caterpillars (adult butterflies and moths) → Songbirds





What is “native”?

Plants that were here before
colonization (1600)

**There is much debate about
nativity!**

How do I find out?

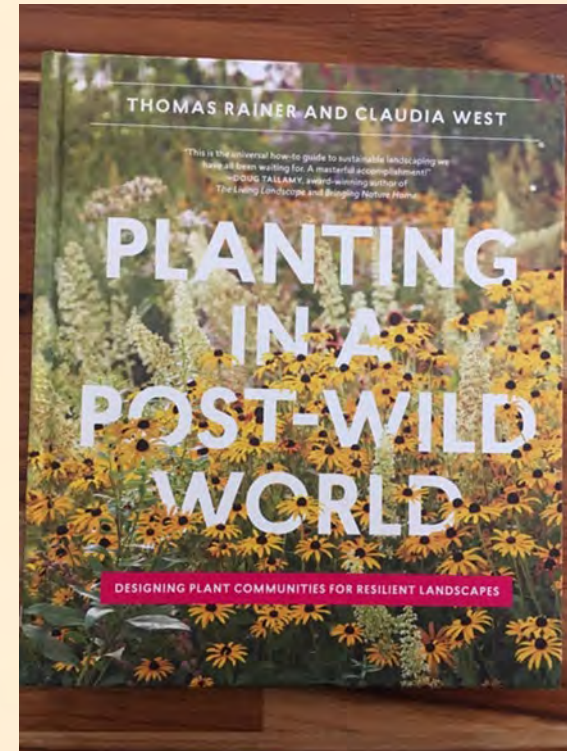
Native Plants of New York by Don
Leopold

Audubon Field Guides

NY Flora Atlas

Many non-natives and less desirable plants also support pollinators!

- Many introduced weeds and ornamentals are used as food plants
- Anything with a flower that has nectar or pollen will support adult pollinators
- Don't get hung up on making sure everything is native!
 - Be more concerned about invasive plants
- Do we even have a native/wild environment anymore?



#3- Diversity is the key!

- Different plant families
- Trees, shrubs, perennials, vines
- Different flower shapes
- Different flower colors

**Even plants considered
boring, lowly, weedy,
non-native and annoying
have a role to play....**

Diversity...Food Plants

Eastern Tiger Swallowtail-

- Cherry
- Ash



Clouded Sulphur-

- Legumes
 - Alfalfa
 - Clover
 - Vetch



Black Swallowtail-

- Carrot Family
 - Dill
 - Fennel
 - Parsley
 - Queen Anne's
Lace



Spring Azure-

- Dogwood
- Viburnum



Diversity...Food Plants

Cecropia Moth

- Apple
- Box elder
- Cherry
- Lilac
- Willow
- Poplar



Luna Moth-

- Birch
- Hickory
- Walnut



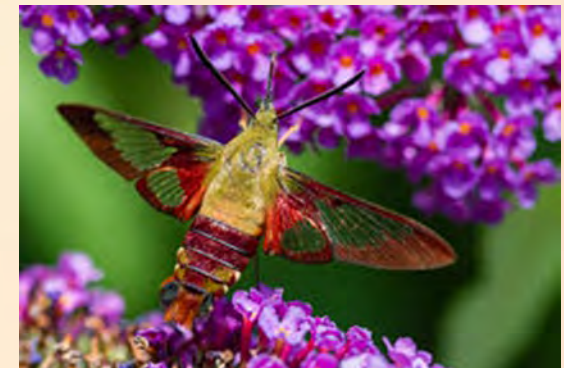
Polyphemus Moth-

- Rose
- Birch
- Willow



Hummingbird Clearwing-

- Viburnum



Plant Diversity = Pollinator Diversity!

Deciduous Trees-

- Birch
- Hawthorn
- Serviceberry
- Cherry
- Poplar
- Oak***



Plant Diversity = Pollinator Diversity!

Evergreen Trees-

- Eastern Red Cedar
- Northern White Cedar
- Pine
- Spruce



Plant Diversity = Pollinator Diversity!

Shrubs-

- Dogwood
- Chokeberry
- Currant/Gooseberry
- Ninebark
- Elderberry
- Raspberry/Blackberry
- Willow



Vine-

- Virginia Creeper

Plant Diversity = Pollinator Diversity!

Perennials (wildflowers)-

- Sunflower
- Milkweed
- Bee Balm
- Purple Coneflower
- Black-eyed Susan
- Meadowsweet
- Cardinal flower
- Columbine
- Joe Pye Weed
- Goldenrod





Goldenrod does NOT make you sneeze!

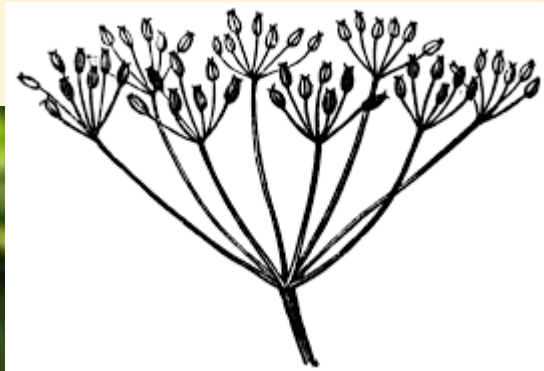
- Ragweed does!



#4- Plant flowers that are attractive to pollinators...

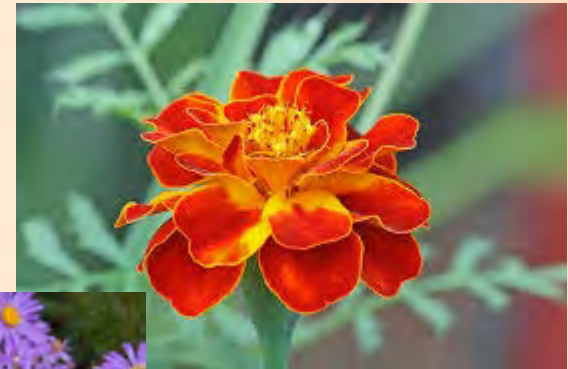
Carrot Family

- Carrot, parsley, celery, dill, coriander
- Umbel flower head



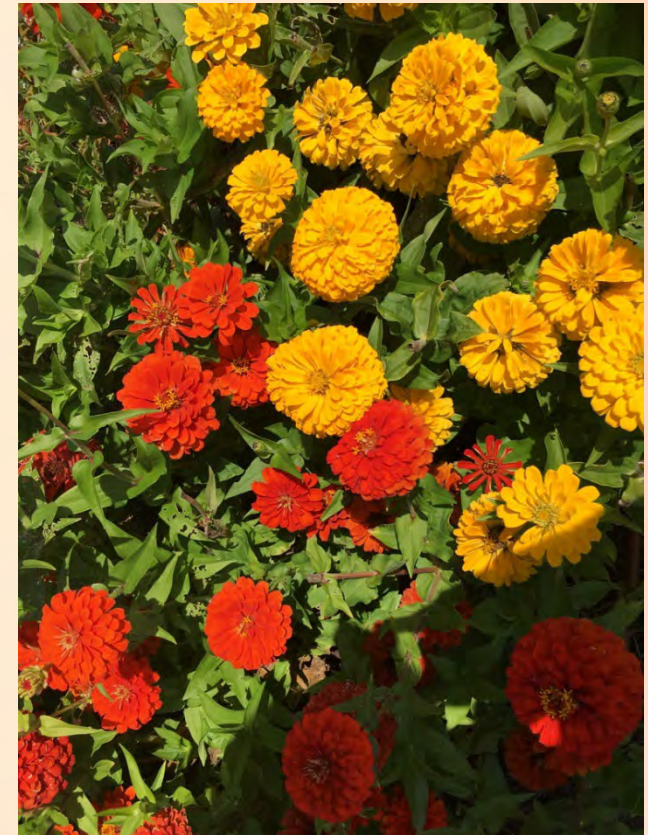
Daisy Family

- Sunflower, aster, daisy, marigold, strawflower, zinnia, dahlia, chrysanthemum
- Composite flower head



How to use flowers for the most benefit

- Diversity- use at least 15 different flowering species
 - Plant diversity = wildlife diversity
- Successional blooming- food is available when insects are active
- Plant flowers in groups
- Use 'species' plants rather than hybrids
- Attractive flowers:
 - Butterflies- long, tubular flowers; red, orange and yellow
 - Moths- night blooming flowers: jimsonweed, evening primrose
 - Bees cannot 'see' red; blue flowers attract bees



#5- Consider the Habitat

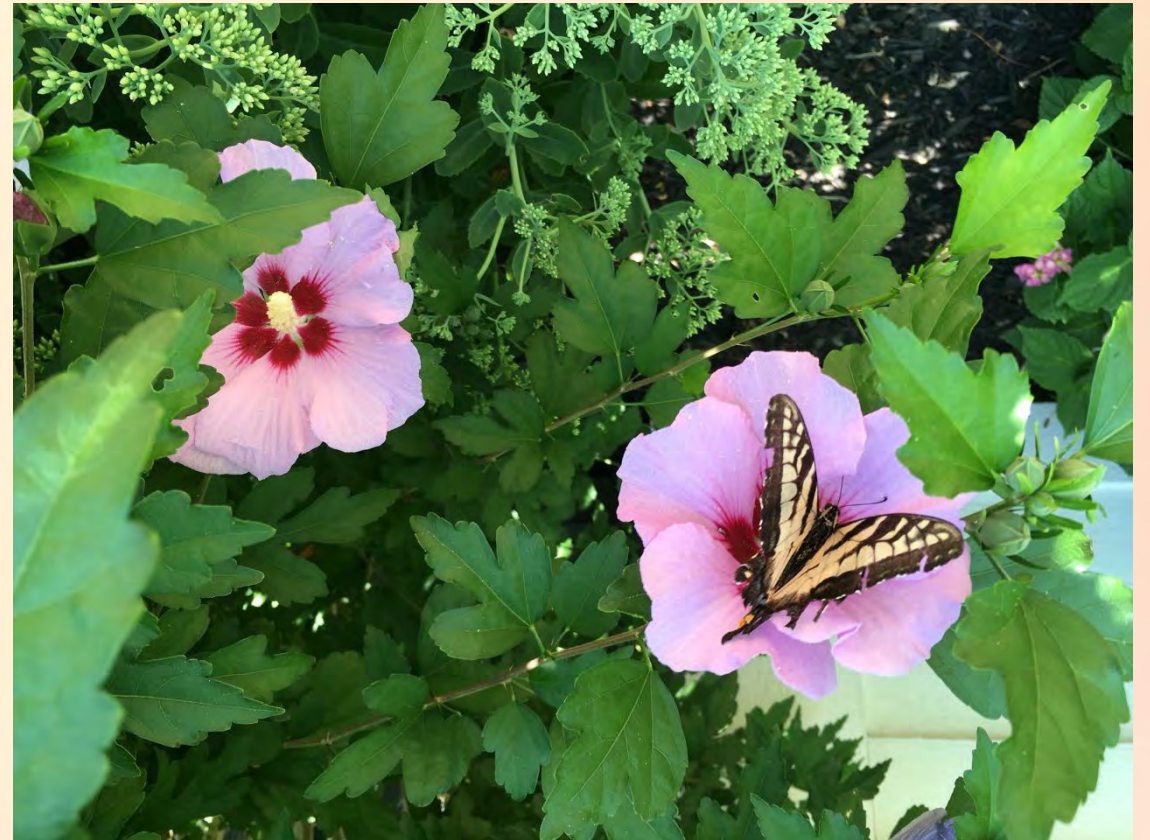
- The trouble with lawns...
- Freedom from pesticides
 - Insecticides are not selective!
- Water
 - Butterflies like puddles
- Provide nesting habitat
 - Bare soil for ground nesting bees
 - Trees with loose bark
 - Snags/unkempt areas provide shelter



PHOTO: Emma Nowak

#6- Consider less 'flashy' pollinators

- Pollinators are not just honeybees and butterflies!



Other bees...

- Honey Bees are not native!
- Native Solitary bees- do not live in colonies
 - Wood nesting bees
 - Ground nesting bees
- Bumble bees are excellent pollinators!
 - They have longer tongues than other bees. This allows them to pollinate deeper flowers with complex shapes.
 - They are generalists that visit a variety of plant species, including native wildflowers and food plants.
 - Thermoregulation- shivering. Can forage under cold, cloudy, rainy conditions
 - Buzz pollination



Important pollinators- Flies



Flower Fly



Bee Fly

Important pollinators- Beetles



Flower Beetle



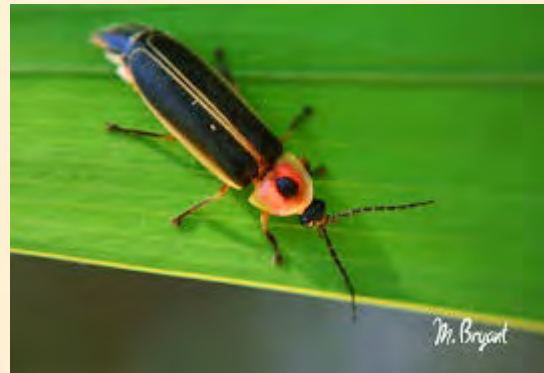
Pollen Beetle



Wood Borer



Soldier Beetle



Firefly

Bottom Line-

- Diversify!
- Nurture what you have
- Eliminate invasive species
- Provide a pollinator friendly habitat- for all pollinators
- Do not use pesticides
- Favor native species but know that they may not be ideal depending on your setting.

Recommended reading/Resources...

- Bringing Nature Home, by Douglas Tallamy
- Native Plants of New York, by Don Leopold
- Audubon Guides (Trees and Wildflowers)
- Caterpillars of Eastern North America, by David Wagner
- Pollination Conservation Handbook, The Xerces Society
- www.xerces.org
- Prairie Moon Nursery
prairiemoon.com (MN)
- Ernst Seeds ernstseed.com (PA)



Questions? Thank You!

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