



Why Pollinators Need Our Help

- Habitat Loss – smaller more fragmented green spaces
 - ATC is using the spaces under transmission lines to create contiguous corridors of pollinator friendly habit
 - Tracking Monarch migration and adjusting planting mixes accordingly
- Diseases, predators and parasites taking out the bees
- Pesticides – <https://extension.psu.edu/pesticides-and-pollinators>
<https://ohioline.osu.edu/factsheet/anr-68>
 - Insecticides of course
 - Fungicides
 - may make beneficial insects more susceptible to disease
 - Impact on bees and their food source made from native yeast and pollen https://www.melindamyers.com/audio-video/melindas-garden-moment-audio-tips/sustainable-gardening/pollinator-safe-plant-disease-management?ccm_paging_p=5
 - Herbicides – kill weeds that beneficial nectar upon
 - 50 different pollinators feeding on dandelions and clover
 - Inert materials in pesticides – these may be harmful as well

Creating the Habitat

- Shelter, food, water, and place to raise their young
 - Include multiple layers – trees, shrubs and perennials
 - Snags, stones, leaf litter and dead plants (leave perennials stand for winter)
 - Holes in trees and hollow plant stems – leaf cutter bees – solitary
 - Small Carpenter bees – hollow twigs and plant stems - wide range of flowers
 - Open spaces for ground nesting bees
 - Underground cavities – Bumblebees – small colonies
 - Commercial and homemade nesting boxes
 - Mason Bees – hollow stems and.....
 - https://www.melindamyers.com/audio-video/melindas-garden-moment-videos/pollinator-wildlife-habitat/diy-native-bee-house?ccm_paging_p=5
 - Bumblebee houses
 - <https://www.melindamyers.com/audio-video/melindas-garden-moment-audio-tips/pollinator-wildlife-habitat/bumblebee-houses-and-habitat>
- Water
 - Ponds, bird baths and water features
 - Shallow with sloping sides for easy access
 - Puddles, damp spot, damp sponge for bees and butterflies
 - Add a pinch of wood ash or sea salt
- Warming Stone

Design Strategies

- Plant in Mass
 - Coneflower, Bee balm and Russian Sage

- Willow Amsonia, Aster, Little Bluestem (National Arboretum)
- Salvia, Prairie dropseed, Sedges, Geranium (Northwind Perennial Farm)
 - For efficient pollination – continuous cover
 - Join forces with your neighbors (Rudbeckia, allium...)
 - Even a window box will help (Ebert's Greenhouse Village)
- Use a wide variety of plants
 - Natives whenever possible and appropriate
 - Different bloom times (nectar, pollen and foliage all season)
 - Grape hyacinth (*Muscari*)
 - Coneflower, *Agastache*, *Liatris*, *Crocasmia*
 - Winter – leave perennials stand – food, habitat and beauty
 - Seedheads for added interest and food for birds
 - Include a few night bloomers –
 - Nicotiana, datura, four o'clocks, night phlox (*Zaluzianskya*), night scented stocks (*Mattiola longipetala*)
 - Various colors and flower shapes
 - Great Black Wasp on Milkweed
 - Single flowers better than doubles
 - Painted lady butterfly Cosmos

Food for various pollinators

- Butterflies – bright colors including red and purple
 - Narrow tube with spur or landing pad
 - Skipper on Russian Sage
 - Skipper on Salvia
 - Rotten fruit for butterflies, bees and beetles
 - Viceroy butterfly
 - Butterfly feeders
 - https://www.austintexas.gov/sites/default/files/files/Parks/Zilker_Botanica/zbgbutterfliesfeeding.pdf
- Moths tend to feed in the evening so pale or white sweet smelling flowers
 - Tubular - pale and dull red, purple, pink or white
 - Carolina Sphinx on four o'clock
 - Scape Moth on Milkweed
 - Hawk Moth on Night Blooming Jasmine
- Bees – attracted to bright white, yellow, blue or UV
 - Sweat bee on Gaillardia
 - Native Bees <https://www.insectidentification.org/insects-by-type-and-region.asp?thisState=iowa&thisType=Bee,%20Ant,%20Wasp%20and%20Similar>
 - <http://news.cornell.edu/stories/2011/10/native-bees-are-better-pollinators-honeybees>
 - https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb5306468.pdf
 - <http://www.xerces.org/wp-content/uploads/2010/02/pa-nj-native-bee-benefits1.pdf>
- Beetles are generalist and not the best pollinators – dull white or green blooms
 - Large strongly scented flowers like Canadian ginger, Magnolia....
 - Goldenrod Soldier Beetle on invasive Queen Anne's Lace
- Flies are also generalist – small flowers in shady moist habitats
 - Pale and dull, dark brown or purple - shallow, funnel-like or complex trap-like
 - Annuals, bulbs, Skunk cabbage, goldenrod
- Birds (mainly hummingbirds) – bright colored tubular flowers

- Scarlet, orange, red or white
Cardinal vine
Lady in Red Salvia

Interesting Combinations

- Amsonia, Allium & Salvia
- Golden Alexander, Spiderwort & Salvia
- Switchgrass and Rattlesnake Master (*Eryngium yuccifolium*)
- Rattlesnake Master and Russian Sage
- Red Hot Poker and Liatris
- Artichoke, Jolt Dianthus & Prairie Dropseed
- Russian Sage, Liatris and Roses

A few Plants to consider www.atc-growsmart.com

Finding Plants for Your Location

<https://www.pollinator.org/guides>

<https://www.xerces.org>

Trees & Shrubs

Serviceberry (*Amelanchier*)
 Chokeberry (*Aronia*) – Lowscape, Lowmound & Groundhog
 Spicebush (*Lindera benzoin*)
 Arrowwood Viburnum (*Viburnum dentatum*)
 Dogwood (*Cornus*) – Pagoda and red twig,
 Ninebark (*Physocarpus*)
 Buttonbush (*Cephalanthus*)
 Summersweet (*Clethra*)
 Elderberry (*Sambucus*)
 Linden (*Tilia*)
 Blue mist spirea (*Caryopteris*)
 Common Witchhazel (*Hamamelis virginiana*)

Perennials

Trout lily
 Blood root
 Columbine
Iris
Allium (Fritillaria butterfly shown)
 Spiderworts
Penstemon
Coreopsis
 Phlox with Swallowtail butterfly
 Wild Quinine (*Parthenium integrifolium*)
 Rattlesnake Master (*Eryngium yuccifolium*) *Calmintha*
 Culver's Root (*Veronicastrum virginicum*)
 Milkweeds (*Asclepias*) – Butterflyweed, Swamp Milkweed, Common Milkweed,
 Sullivant's (variety of common milkweed – a bit less aggressive)
 Agastache 'Little Adder'
 Monarda
 Coneflower (*Echinacea*)
 Rudbeckia – (*Rudbeckia* x 'American Goldrush' & 'Little Goldstar')
 Spike Gayfeather - *Liatris spicata* 'Kobold', 'Trailblazer'

Meadow Blazing Star (*Liatris ligulistylis*)– monarch magnet
Red Hot Poker (*Kniphofia*),
Calamintha nepeta nepeta
Yarrow (*Achillea*),
Cardinal Flower (*Lobelia cardinalis*),
Giant blue lobelia (*Lobelia siphilitica*),
Coreopsis tripteris
Joe-Pye Weed
Helianthus,
Aster
Goldenrod
Little Bluestem
Prairie Dropseed
Switchgrass

Annuals

Begonia
Impatiens with sulfur butterfly
Sweet alyssum
Ageratum (Blue Horizon – taller cultivar) with Common Buckeye butterfly
Lantana
Pentas
Nicotiana with sphinx moth
Cosmos
Salvia – Black & Blue (Black & Bloom)
Zinnia
Tithonia with Monarch
Sunflower

Herbs

Borage
Oregano (aggressive)
Mint (aggressive)
Creeping Thyme
Dill (fennel and parsley) swallowtail caterpillars
Lavender

So Take the Pledge (<http://millionpollinatorgardens.org>)

Additional Resources

<https://www.iowadnr.gov/Conservation/Iowas-Wildlife/Pollinators>

<https://xerces.org/pollinator-conservation>

<https://xerces.org/pollinator-conservation/pollinator-friendly-plant-lists>

<https://store.extension.iastate.edu/product/Gardening-for-Butterflies-and-Pollinators>

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