

# Pulaski County Master Gardeners Butterfly Seminar

February 20, 2018

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Botanical Garden of the Ozarks



Native Butterflies – How to Support

Monarch Programs

The Butterfly House

Botanical Garden of the Ozarks

# Diana Fritillary

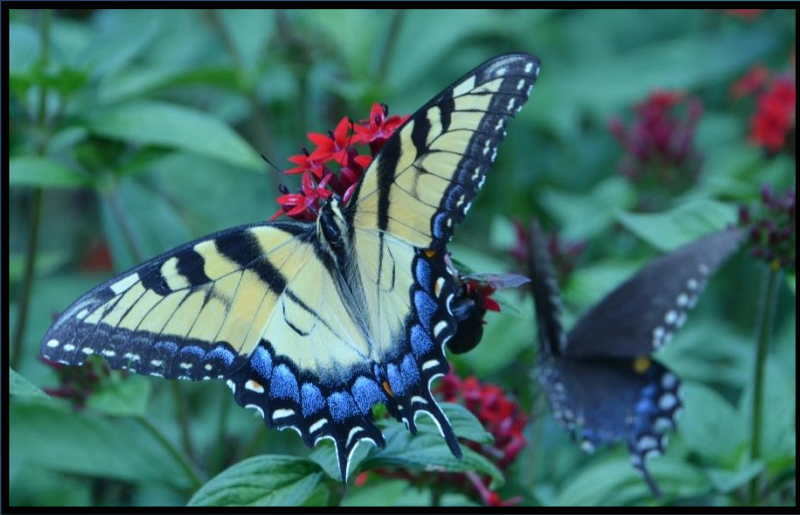
Arkansas' State Butterfly



Male



Female



Tiger Swallowtail



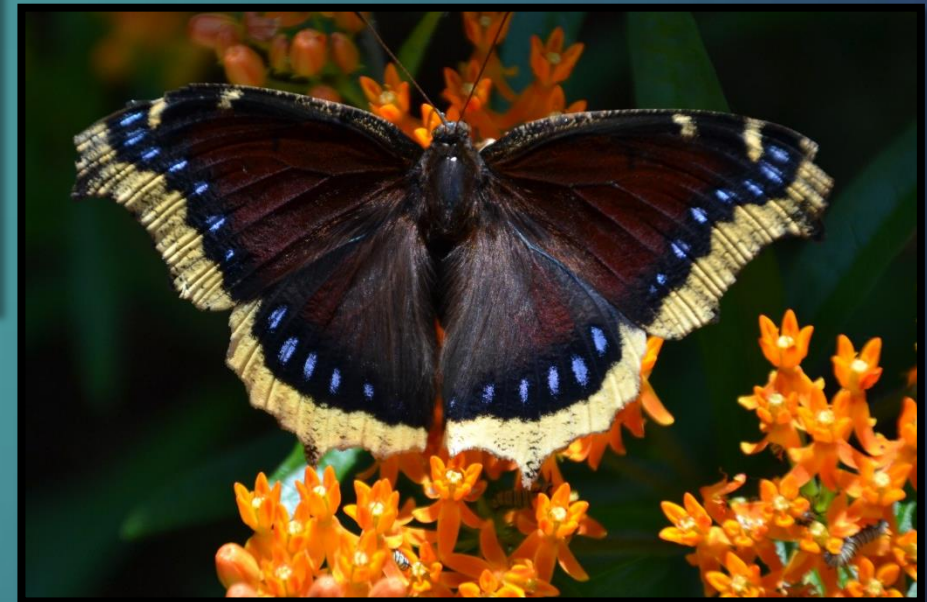
Monarchs



Goatweed Leafwing



Pipevine Swallowtail



Mourning Cloak



Buckeye



Spicebush Swallowtail



Giant Swallowtail



Sleepy Orange



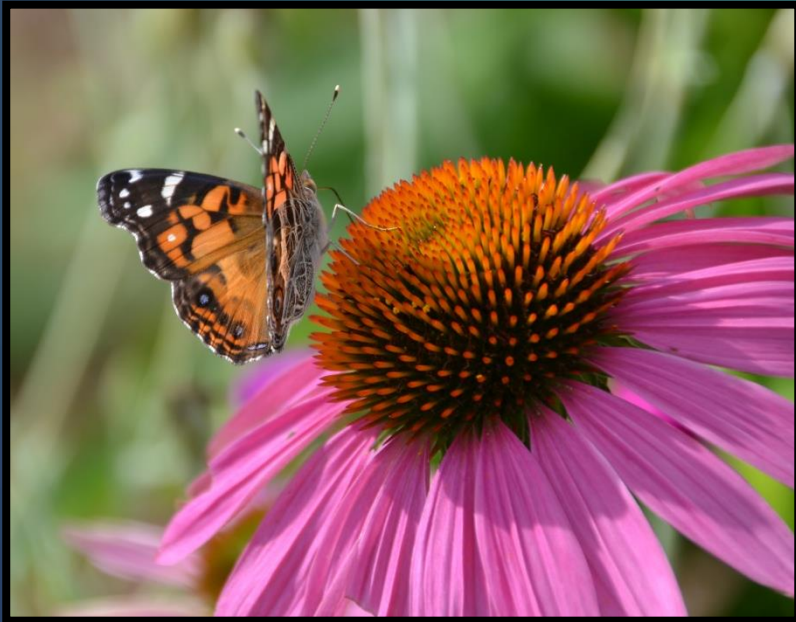
Gulf Fritillary



Red Admiral



Tawny Emperor



American Lady



Question Mark



Southern Dogface

So how do I get those beauties?

HOST PLANTS

NECTAR PLANTS

IMPORTANCE OF NATIVES

# Importance of Host Plants

Many caterpillars will only eat plants from one genus

- For a number of butterflies, this means their caterpillars will eat only one or two plants
- These are called host plants

Significance for us...if we want butterflies, we must plant their host plants.

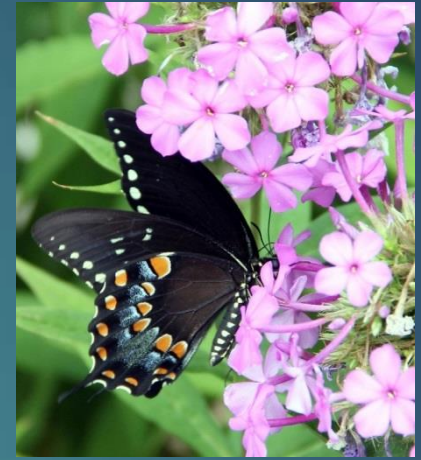


# Biological Adaptations to Host Plants

- If the butterfly lays an egg on the wrong plant, the egg may not hatch
- Even if the egg hatches, the caterpillar will not live, because that plant may be poisonous to it or the caterpillar has not adapted to that plant's chemicals
- Some plants make the caterpillar poisonous to birds, so caterpillars adapted long ago to eat that particular plant
- Many caterpillars have colors that allow them to hide easily on their host plants

# Nectar Plants

- Adult butterflies don't "eat;" they sip nectar through a straw-like proboscis
- Butterflies have their favorites, but the choices are not nearly so limited as in host plants
- It is important, though, to plant so that nectar is available throughout the spring, summer, and fall seasons



# Other Adult Butterfly Food

Tree sap

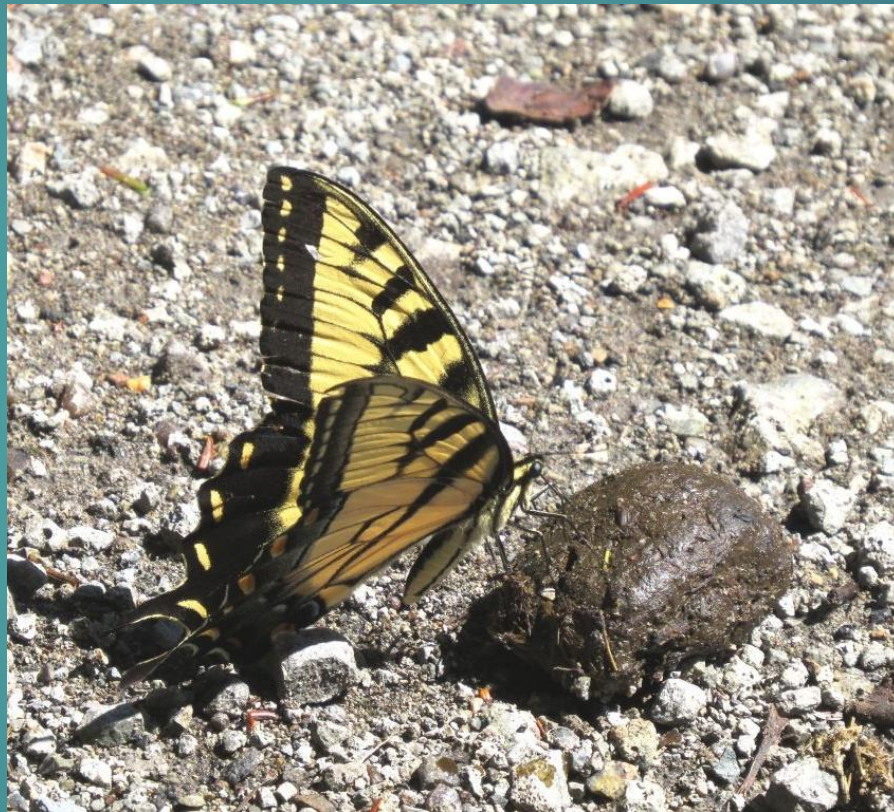


Rotten fruit



# Other Adult Butterfly Food

And, yes, dung!





# Puddling



# Easy-to-lure Butterflies: Eastern Black Swallowtail

Native host: *Zizia aurea*,  
Golden Alexander



Other garden goodies

- Parsley
- Dill
- Fennel
- Carrot family



Favorite nectar plants

- Tall garden phlox
- Milkweed
- Thistle

# Easy-to-lure butterflies: Spicebush Swallowtail

## Host Plants

- Spicebush (understory tree)
- Sassafras



## Favorite nectar plants

- Tall garden phlox
- Milkweed
- SuperCal petunia



# Spicebush Swallowtail Host Plants

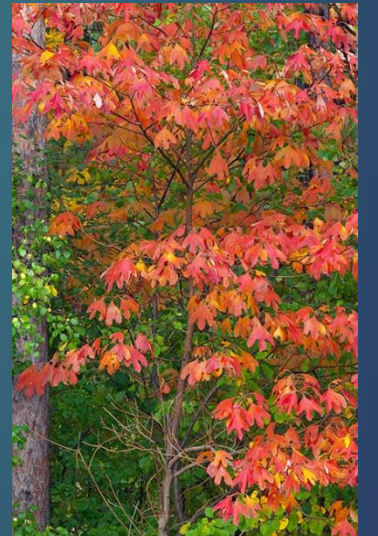
## Native – spicebush

- Small understory tree or shrub
- Sun or shade, but often found in forests
- Fall interest – gold with berries



## Native - sassafras

- Usually understory, but can become 60' tree
- Interesting foliage – fall color
- Many birds love the berries



# Easy-to-lure butterflies: Tiger Swallowtail

## Host Plants

- Tulip poplar
- Willows
- Wild cherry
- Wafer ash
- Sweetbay magnolia



## Favorite Nectar Plants

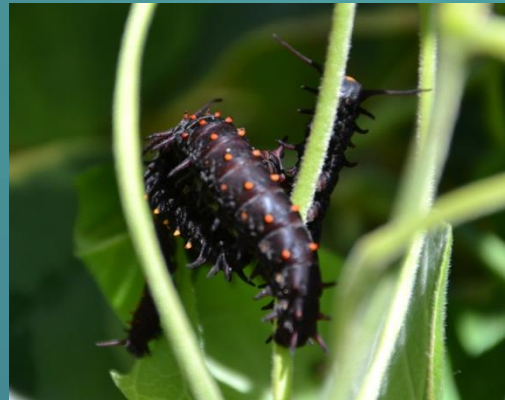
- Lilac
- Milkweed
- Joe-Pye Weed

# Easy-to-lure butterflies: Pipevine Swallowtail

## Host Plant

- Pipevine, *Aristolochia tomentosa*

*USE THE NATIVE,  
the tropical kills!*



## Favorite Nectar Plants

- Phlox
- Monarda
- Verbena
- Thistle

# Easy-to-lure Butterflies: Giant Swallowtail

## Native Host Plants

- Wafer ash
- Prickly ash

## Other Hosts

- Rue
- Certain citrus plants



## Favorite Nectar Plants

- Swamp milkweed
- Goldenrod
- Thistle
- Lantana

# Giant Swallowtail Host Plants

## Native – wafer ash

- Small understory tree or shrub
- Variety of growing conditions
- Can be trimmed to keep small
- Also a nectar plant



## Garden plant - rue

- Nonnative herb (*Ruta graveolens*)
- Sun to part shade perennial
- Interesting color and texture
- Flowers draw other pollinators



# Easy-to-lure butterflies: Buckeye

## Native Host Plant

- *Ruellia* (Wild petunia)

## Other Host Plants

- Snapdragon
- Angelonia



## Favorite Nectar Plants

- Composites

# Easy-to-lure butterflies: Gulf and Variegated Fritillaries

## Native Host Plant

- Passionvine



Avoid red passionvine  
(*Passiflora racemosa*)



## Favorite Nectar Plants

- Milkweed
- Tickseed

# Easy-to-lure butterflies: Great-spangled Fritillary

## Native Host Plant

- Various violet species (*Viola*)
- *Yes, includes that common purple one most of us weed*
  
- Female will not be voted “Mom of the Year”



## Favorite Nectar Plants

- Milkweed
- Ironweed
- Verbena
- Joe-Pye weed
- Purple coneflower



# Easy-to-lure butterflies: Red-spotted Purple

## Native Host Plant

- Willows
- Wild cherry
- Serviceberry



## Favorite Food Sources

- Sap
- Rotten fruit
- Dung
- Viburnum

# Easy-to-lure butterflies: Zebra Swallowtail

## Native Host Plant

- Pawpaw tree



## Favorite Nectar Plants

- Verbena
- Milkweed
- Zinnia

# Easy-to-lure butterflies: Cloudless Sulphur, Sleepy Orange

## Native Host Plant

- Wild senna (*S. marilandica*)

## Other Host

- Candlestick tree (*Senna alata*)



## Favorite Nectar Plants

- Cardinal flower
- Salvia
- Zinnia

# Easy-to-lure butterflies: American Lady

## Native Host Plant

- Pussytoes
- Pearly everlasting

## Other Host

- Licorice plant (*Helichrysum petiolare*)



## Favorite Nectar Plants

- Milkweed
- Aster
- Goldenrod
- Zinnia

# Easy-to-lure butterflies: Painted Lady

## Native Host Plant

- Malva
- Thistle
- Many others!

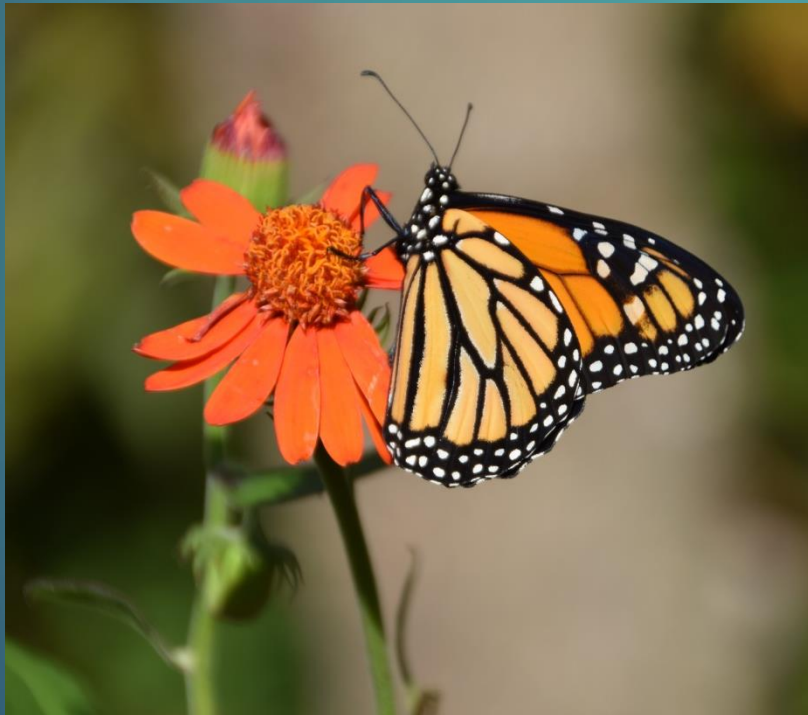


## Favorite Nectar Plants

- Joe-Pye weed
- Aster
- Blazing star (*Liatris*)
- Ironweed

# Easy-to-lure butterflies: Monarch

- Host Plants
  - Asclepias genus



- Favorite Nectar Plants
  - Liatris
  - New England aster
  - Agastache
  - Purple coneflower
  - Blue mistflower

# Host Plants for the Monarch

## Native asclepias

- *A. tuberosa* (*butterfly weed*)
- *A. incarnata* (*swamp milkweed*)
- *A. syriaca* (*common milkweed*)
- *A. viridis* (*green antelopehorn*)



## Tropical asclepias

- *A. curassavica*
- Milkweed often found in nurseries



## *A. physocarpa*

- Also non-native
- Actually African



# My yard can't hold all of these plants!

- Choose several host plants
- Find nectar plants that seem to satisfy many
  - Tall garden phlox
  - Milkweed
  - Verbena
  - Asters
  - Joe-Pye weed
- Nectar plants that double as host plants
  - Milkweed
  - Purple coneflower
  - Ironweed
  - Asters



More on Plants and  
Establishing a Garden  
in Afternoon Session

# Monarch Conservation

## Arkansas Monarch Conservation Partnership

- Statewide collaborative of various entities
- Currently developing state plan
- Seeking partners and volunteers
- Flyers on display table



**Community Collaboration Conservation**

**MISSION:** Create, enhance, and conserve monarch and pollinator habitat in Arkansas.

**GOAL:** Develop and implement a statewide monarch and pollinator conservation plan.

**STRATEGY:** Seek out and develop partnerships to help educate, procure funding, create habitat, and provide scientific research in support of monarch butterfly and pollinator conservation.

COMMITTEES	PARTNERSHIPS
Executive Committee Steering Committee	Non-governmental Organizations Local Governments State Agencies Federal Agencies Small Businesses
Subcommittees: Capacity, Governance, and Funding Collaboration and Partnerships Habitat Delivery Outreach Research and Monitoring	Botanical Gardens & Nurseries Civic Entities Corporate Entities Higher Education Institutions And... Citizens, Like You!

**JOIN US!**

We are working to bring together diverse groups who can contribute to this mission through their own areas of expertise. For more information about the Partnership, or just to stay informed, connect with us online.

facebook.com/ArkansasMonarchs • twitter.com/AR\_Monarchs  
instagram.com/ArkansasMonarchs • arkansasmonarchs@gmail.com  
arkansasmonarchs.org

Photo Credit: Craig Fraeier

# Monarch Conservation

Arkansas cities involved with Mayors' Monarch Pledge

- DeQueen
- Fayetteville
- Little Rock
- Springdale

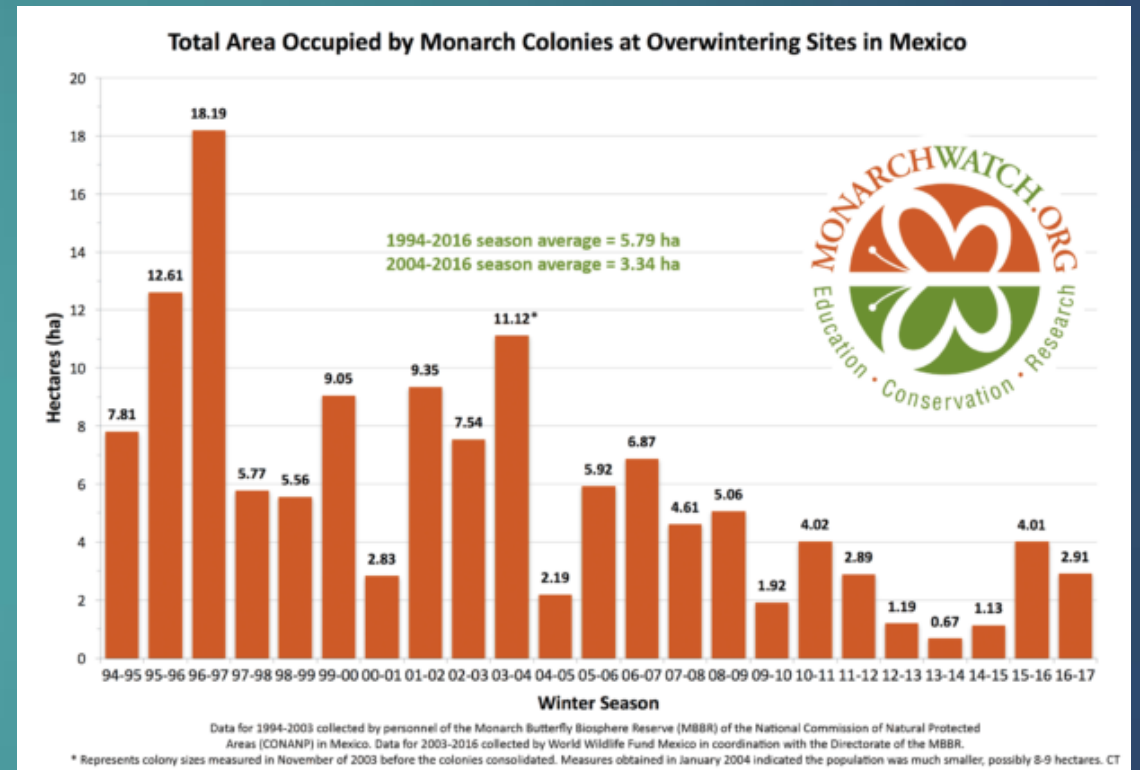
# Monarch Conservation

- Fayetteville Monarch Project
  - Mayors' Pledge through National Wildlife Federation
  - Pledge to take certain actions as a city
  - Workshops to educate public
  - Meeting with school garden leaders
  - Brochures
  - Plant list



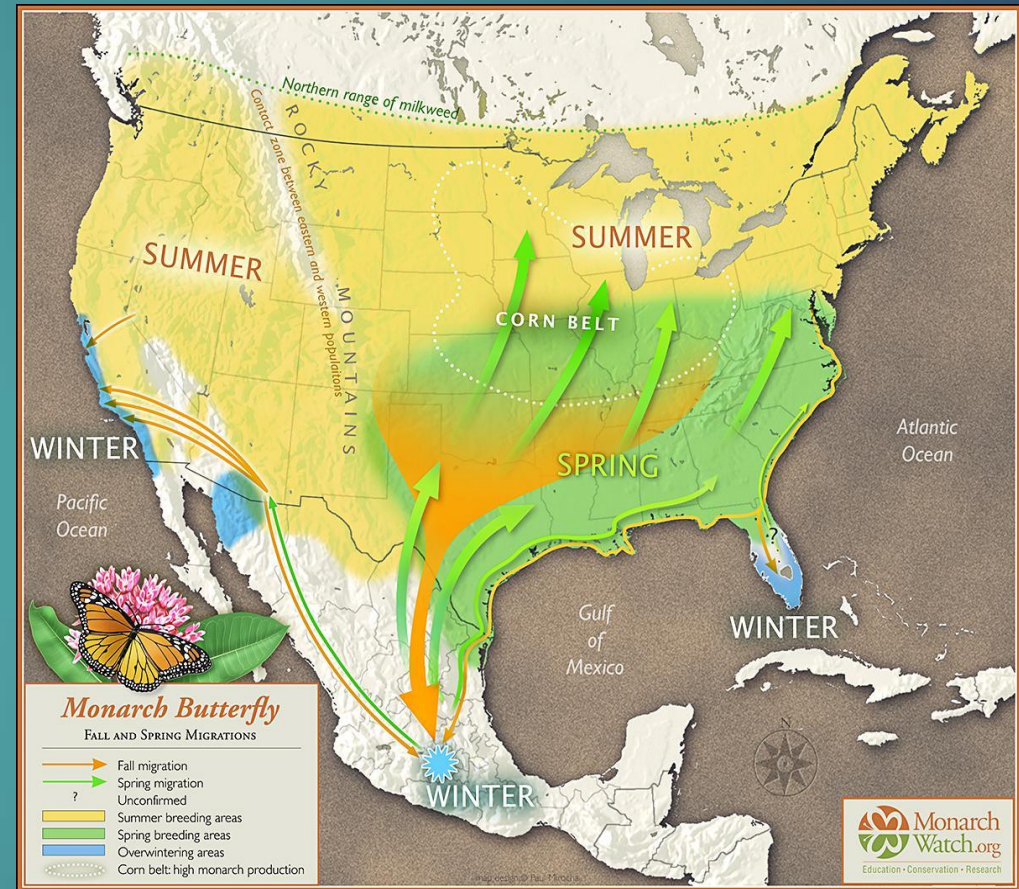
# Why monarch conservation?

- Monarch population in serious decline
  - Down 90% since mid-1990s
  - One of main issues is habitat degradation
    - Loss of oyamel forests – overwintering sites
    - Loss of milkweed due to agricultural practices and development
  - Over 1/3 of breeding habitat in US



# Why monarch conservation?

- Monarch is an iconic insect
  - Many people across the Americas can identify it and identify with it
  - Its migration is a scientific marvel
  - Thus, it is being used as the “poster child”
  - Planting for monarchs is help for many pollinators
  - Arkansas is in the flyway



# Improving Conditions for Monarchs

Think about your spring garden

- Asclepias for egg-laying
  - *Asclepias viridis* blooms early
  - *Asclepias syriaca* one of first to emerge (but not for a tame garden)
- Nectar for spring migration
  - Woodland phlox
  - Rose verbena
  - And don't forget the small blooming trees

# Improving Conditions for Monarchs

## The fall garden

- Most important nectar time
  - Goldenrod (native)
  - *Liatris aspera* (native)
  - New England aster (native)
  - Mexican flame vine
  - *Tithonia* (Mexican sunflower)
  - *Conoclinium coelestinum* (blue mistflower - also known as hardy ageratum – native))
  - *Verbena bonariensis* (purpletop vervain; tall verbena)
  - Ironweed (*Vernonia baldwinii*)

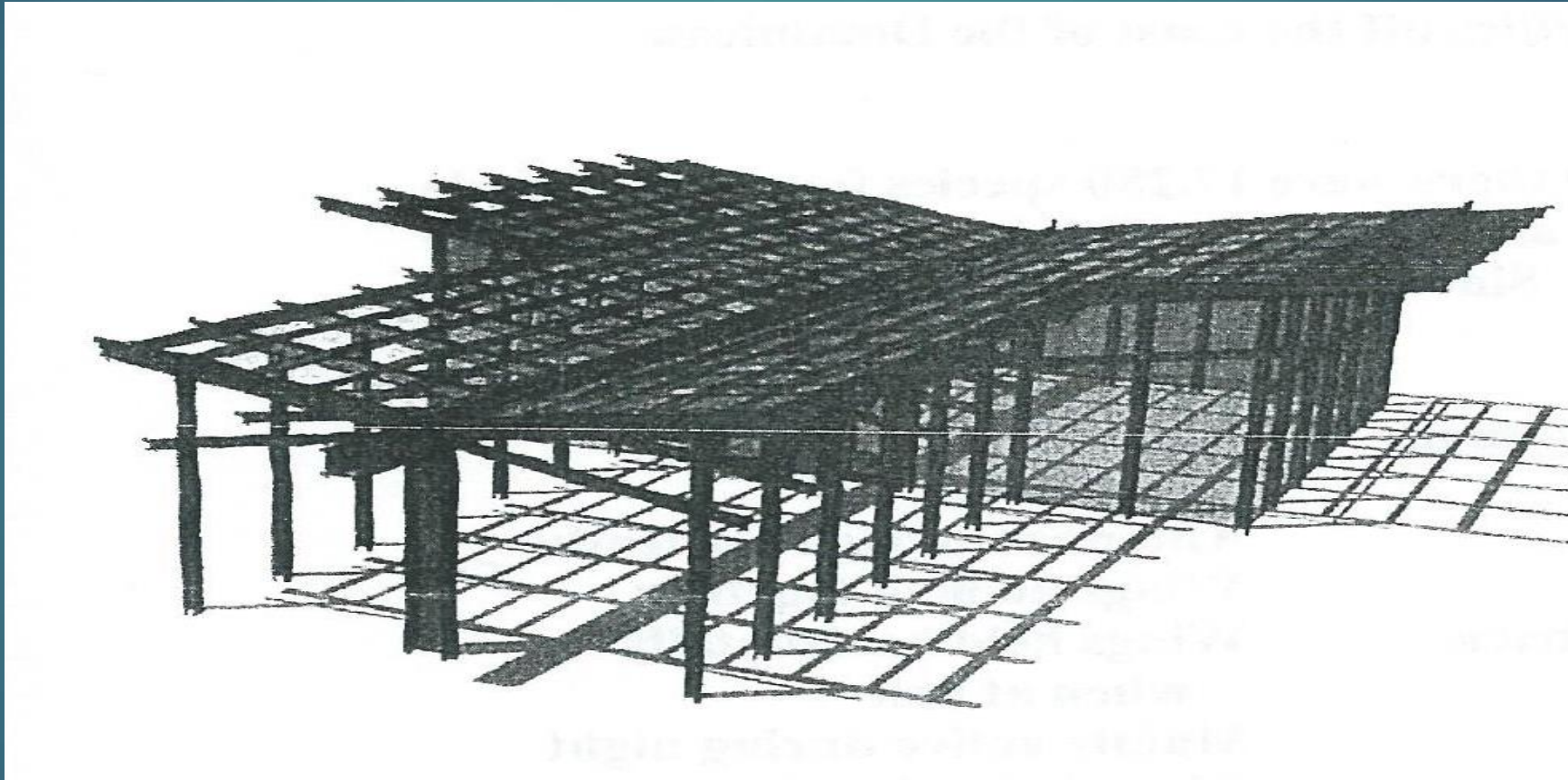




# The Butterfly House at the Botanical Garden of the Ozarks

Located in Fayetteville, the exhibit showcases only natives and is the only butterfly house in the state

# The Idea



Architectural rendering by David McKee

# The Reality



# The Reality



# Goals

- Education
  - Teach what butterflies can be found in Arkansas
  - Explain what butterflies need to exist
  - Pique children's curiosity
  - Encourage stewardship
- Enjoy the beauty of nature

# Successes

- Increased interest in butterflies - more butterfly gardeners
- Education
- Little Sprouts – preschoolers who tell us – show us
- Number of species we showcase increasing over the years
- Managing to provide most of livestock ourselves last year
- Partnering with U of A professor – study of light and temperature/vision in butterflies
- Butterfly camp
- Partnering with Fayetteville Monarch Project

# Difficulties

- Mother Nature
  - Her schedule is not always our schedule
  - Have cycles when fewer butterflies to observe
  - All stages of life cycle are part of the cycle of nature
    - Parasitoids
    - Disease
- Shade cloth
  - Can't always keep plants at their best
- Overpopulation
  - Defoliation of plants in ground

# Overall Assessment

- Very positive experience
- Learning so much as we go
- Provides valuable science education
- Beautiful and fascinating way to lure people into a greater appreciation of the environment



# Favorite Reads

The Life Cycles of Butterflies

by Judy Burris and Wayne Richards

The Family Butterfly Book

by Rick Mikula

Arkansas Butterflies and Moths

by Lori Spencer