

# **Tribal Alliance for Pollinators & The Euchee Butterfly Farm**

Brandon Gibson: Program Coordinator





# Who are The Eucheé Butterfly Farm?



# Who are Tribal Alliance for Pollinators?

- Why work with tribes?
  - Instilled respect
  - Eagerness
    - Land access
  - Cultural preservation
  - Community growth



# Seed Storage



# Tribal Focus



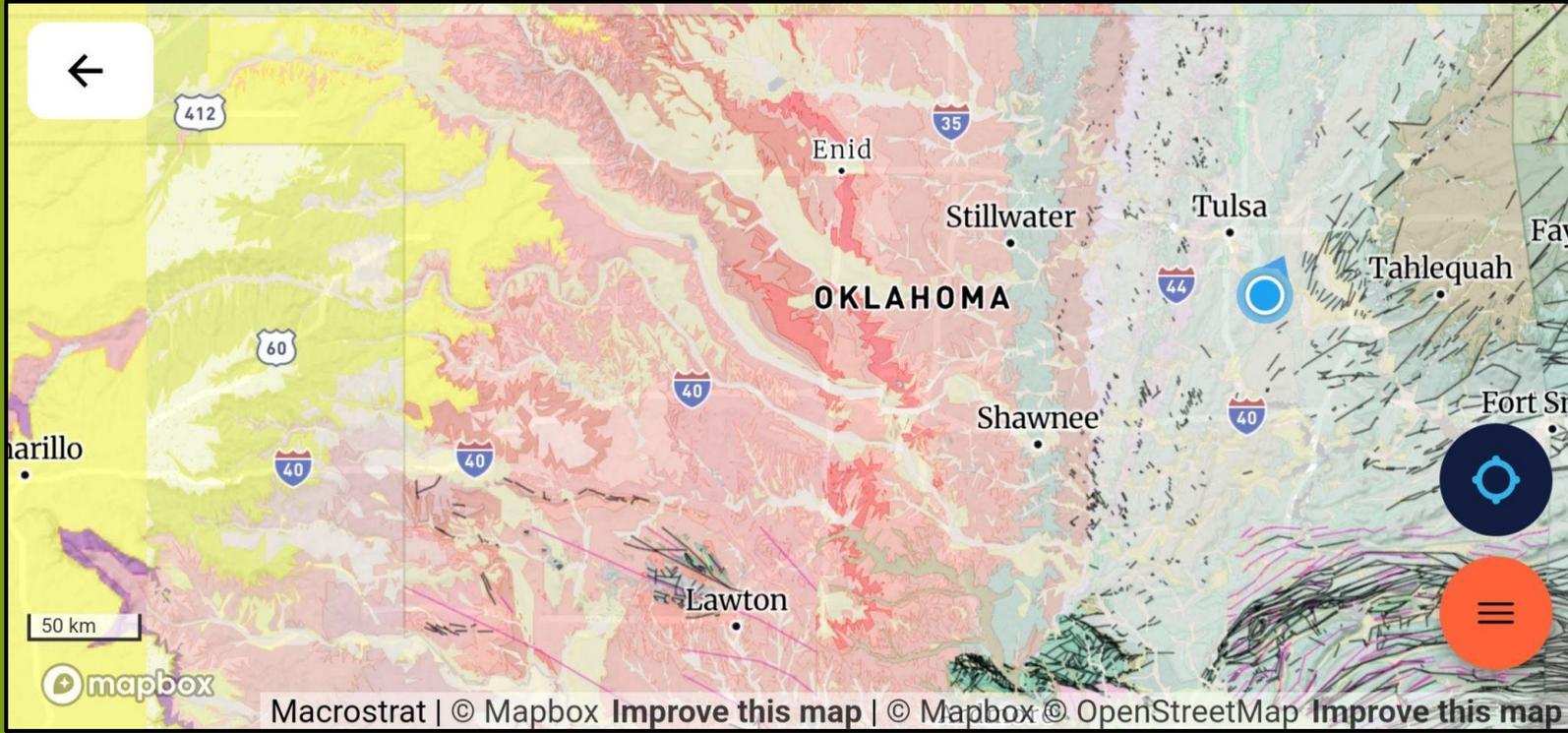
# Tribal Focus



# Tribal Focus







01.2024

# NATIONAL GEOGRAPHIC

## SAVING THE MONARCHS

INSIDE THE MOVEMENT TO HELP THESE BEAUTIFUL—AND VULNERABLE—BUTTERFLIES THRIVE

ISBN 979-8-9893201-0-3 \$7.99  
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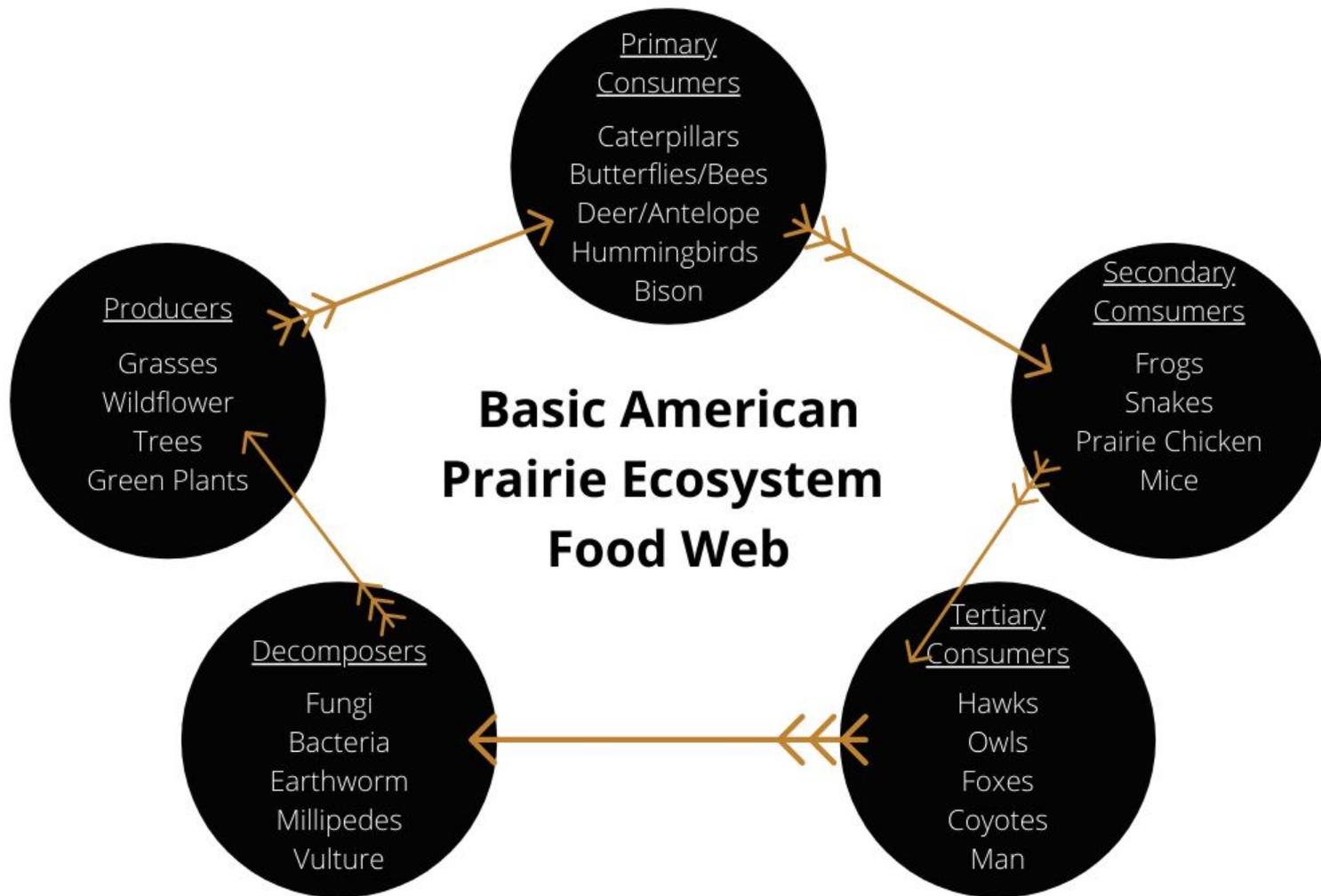


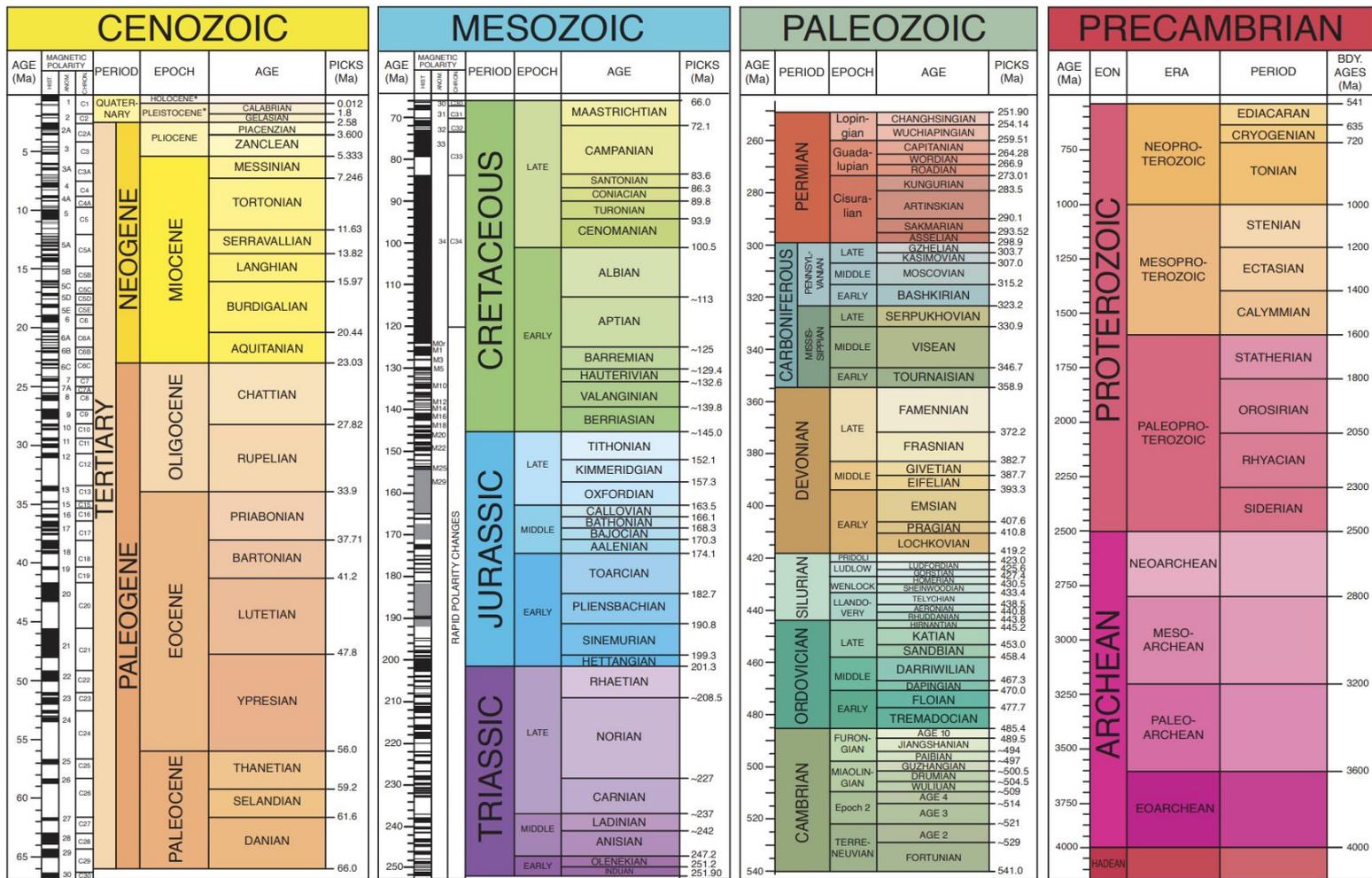
Tribal Alliance for Pollinators



Brandon Gibson (left, Navajo/Cherokee/Choctaw) and Collin Spriggs (right, Cherokee), plant native species on a former golf course acquired by the Muskogee Nation in Okmulgee, Oklahoma. It's part of an ecological restoration programs coordinated by the Tribal Alliance for Pollinators (TAP), which partners with Monarch Watch and Native American tribes to restore habitat on tribal lands.







# Honey Bee (*Apis mellifera*)

- Crop pollination?
- Native honey bees?
- Threatened?
- Native flower pollination?
  - “Best?”
  - Flower morphology
  - Pollen morphology
- Competition?





14 Million Years Ago  
Period: Tertiary (Neogene)  
Epoch: Miocene  
Age: Langhian

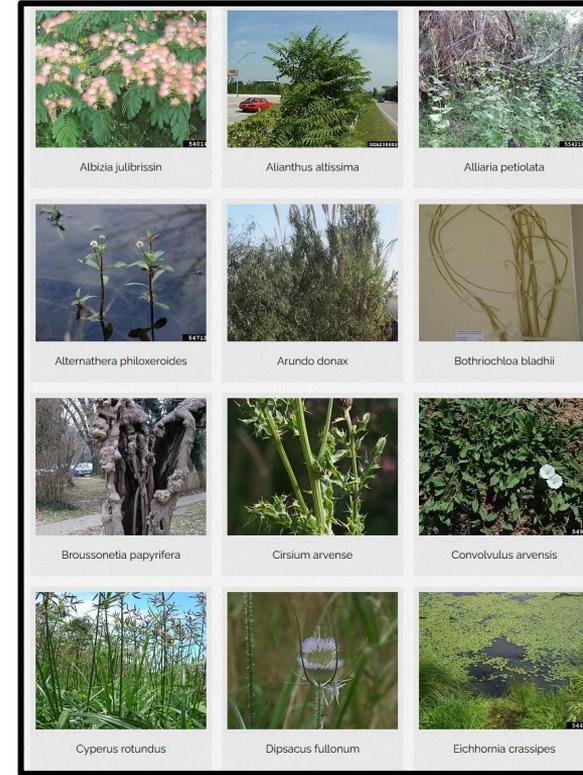
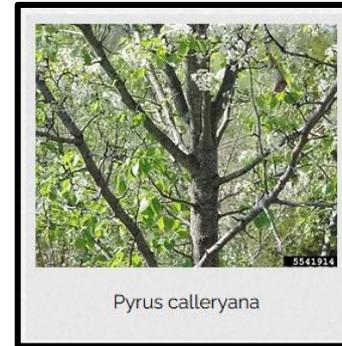
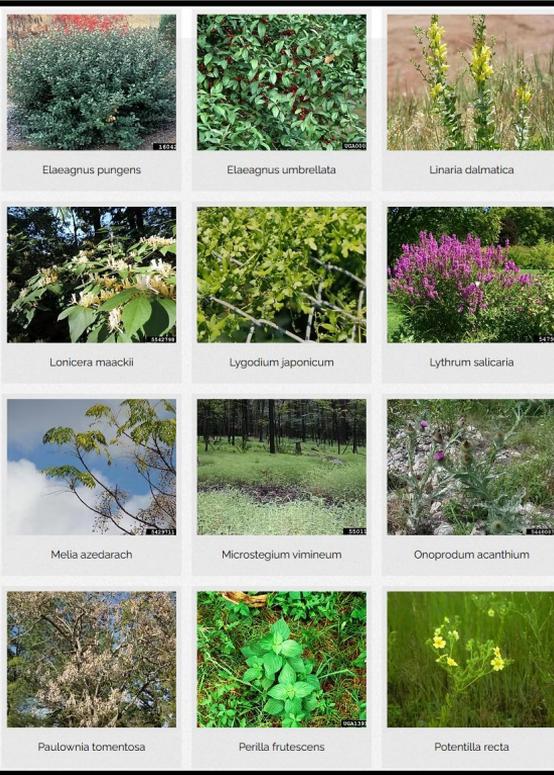


Tribal  
Alliance for  
Pollinators



# Habitat Loss

## Exotic VS. Invasive



# Overgrazing and Climate Change



# Pesticide Usage



# Soil Health Management



Common:  
Illinois Bundleflower

Scientific:  
*Desmanthus illinoensis*

Family:  
Fabaceae (Legume)

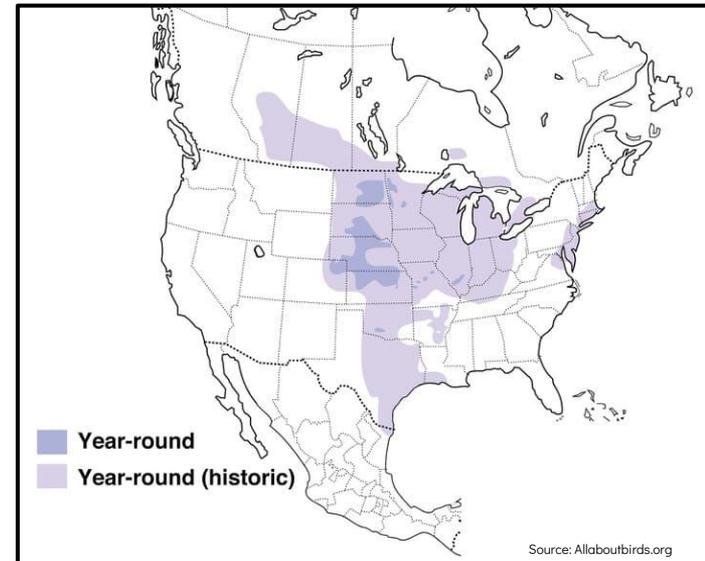


# Greater Prairie-Chicken Tracking

- Greater Prairie-Chicken (*Tympanuchus cupido*)
  - Grasslands
  - Extinct Sub-species
    - Heath Hen (*Tympanuchus cupido cupido*)
  - Critical Sub-species
    - Attwater's Prairie-Chicken (*Tympanuchus cupido attwateri*)
  - Ground Nesting and Foraging

[Greater Prairie-Chickens On their booming Grounds - Mating Displays - YouTube](#)

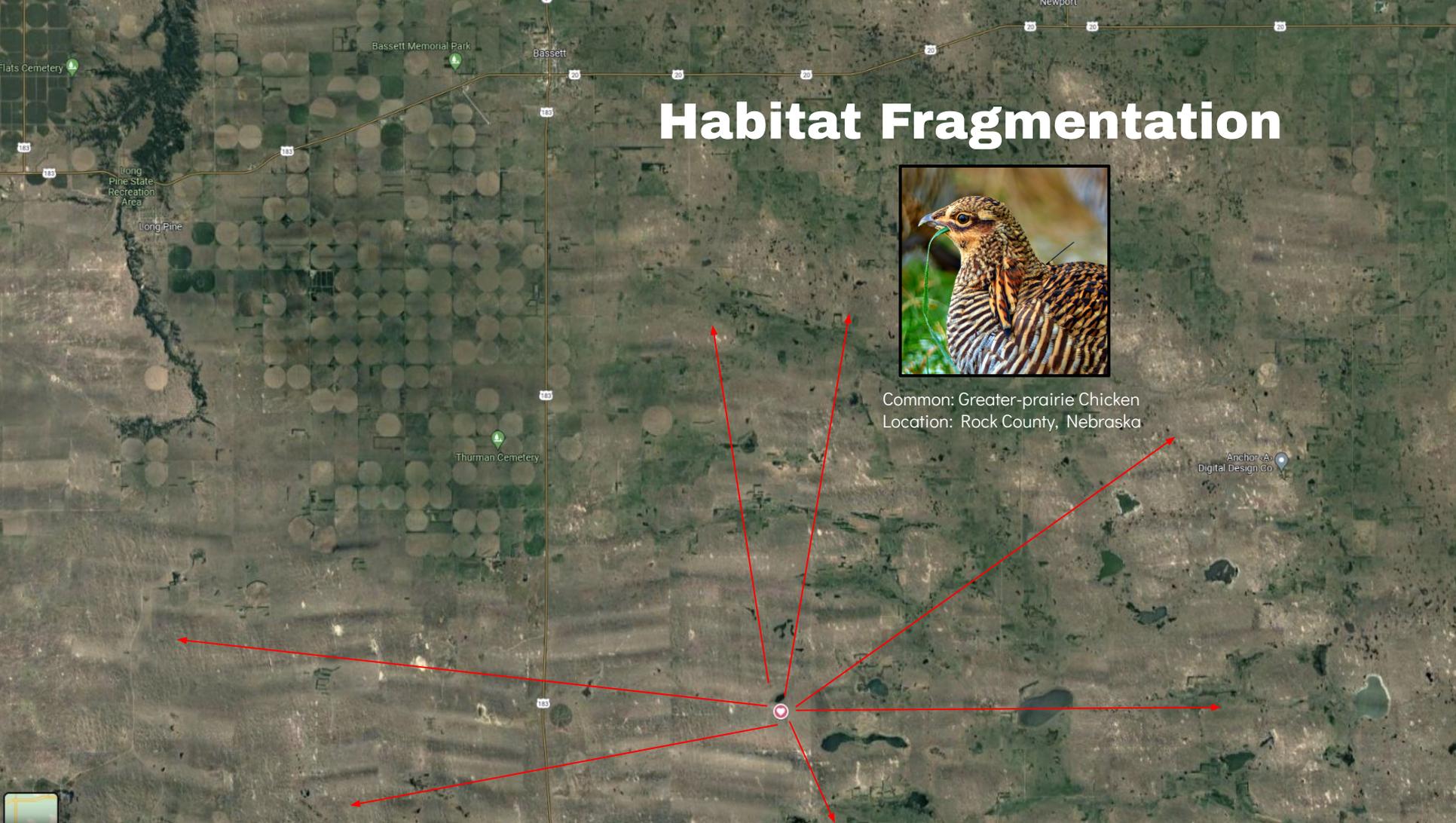
[Greater Prairie-Chicken Overview, All About Birds, Cornell Lab of Ornithology](#)



# Habitat Fragmentation



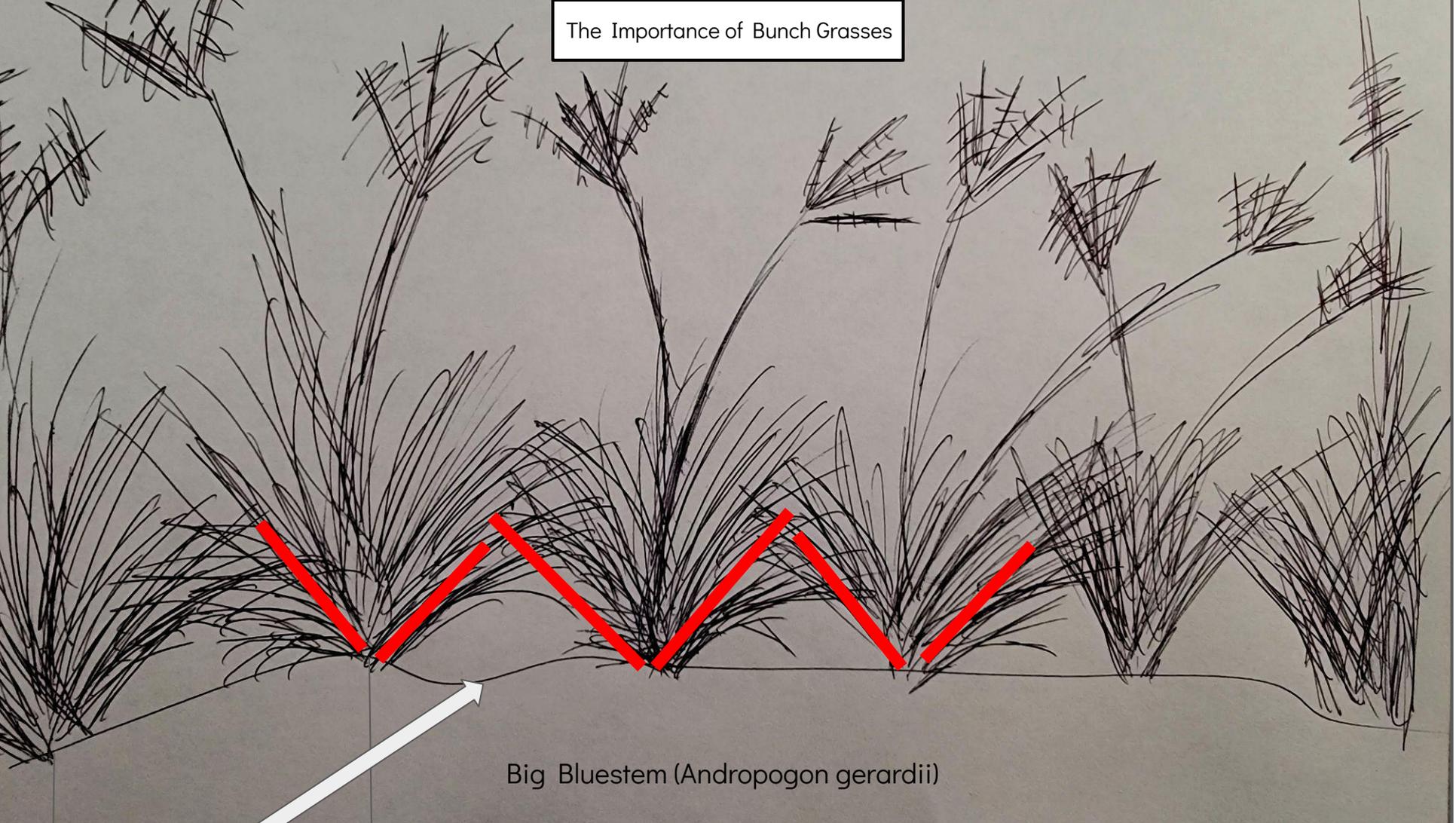
Common: Greater-prairie Chicken  
Location: Rock County, Nebraska







The Importance of Bunch Grasses



Big Bluestem (*Andropogon gerardii*)



# Host Plants



Milkweeds  
*(Asclepias)*



Common:  
Wooly Pipevine

Scientific:  
*Aristolochia*  
*tomentosa*

Family:  
*Aristolochiaceae*  
(Birthworts)



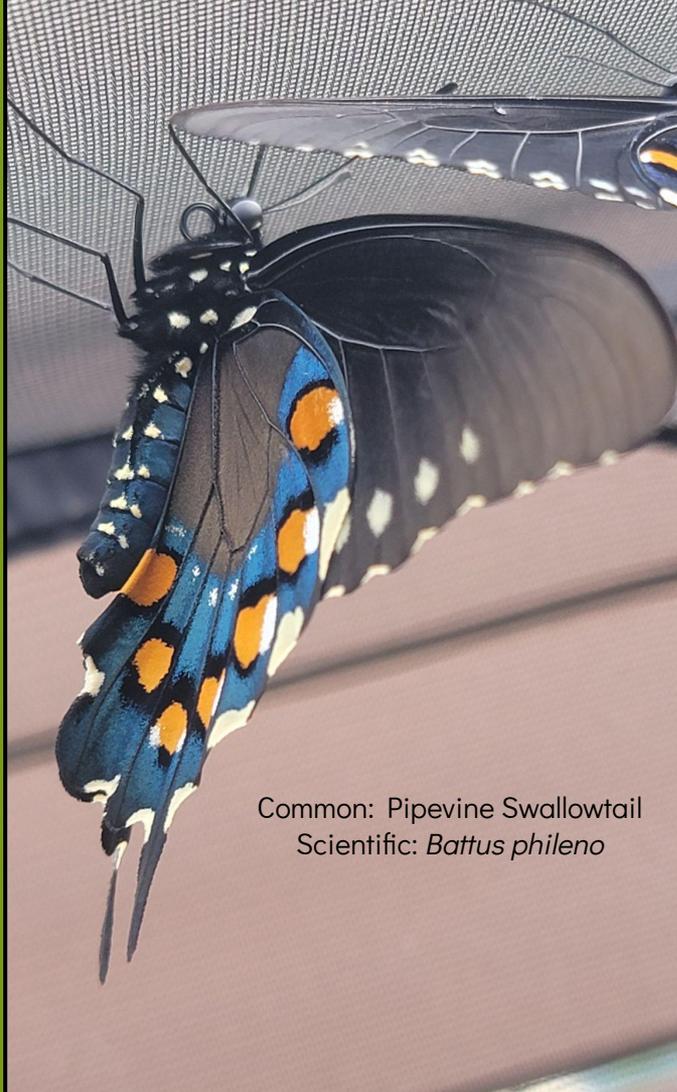
Source: iNaturalist, B. O'Kennen



Common:  
Wooly Pipevine

Scientific:  
*Aristolochia*  
*tomentosa*

Family:  
*Aristolochiaceae*  
(Birthworts)



Common: Pipevine Swallowtail  
Scientific: *Battus phileno*



Common:  
Paw Paw

Scientific:  
*Asimina triloba*

Family:  
*Annonaceae*  
(Custard Apple)



Common:  
Paw Paw

Scientific:  
*Asimina triloba*

Family:  
*Annonaceae*  
(Custard Apple)



Common: Zebra Swallowtail  
Scientific: *Eurytides marcellus*



Common:  
Bloodroot

Scientific:  
*Sanguinaria  
candensis*

Family:  
*Papaveraceae*  
(Poppy Family)



Elaiosomes



Common:  
Frogfruit

Scientific:  
*Phyla nodiflora*

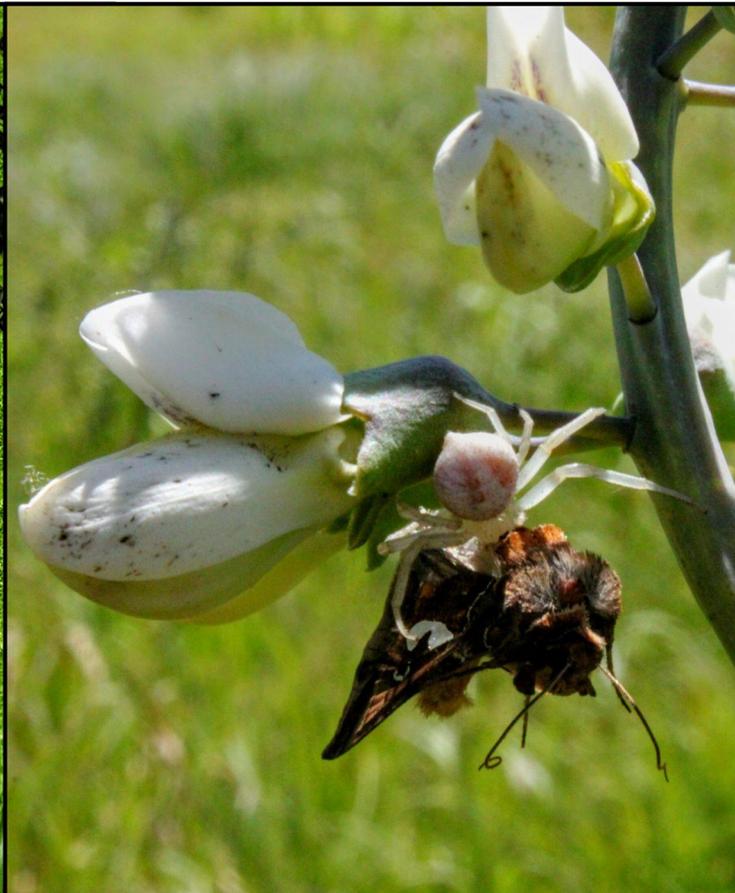
Family:  
Verbenaceae  
(Verbena)



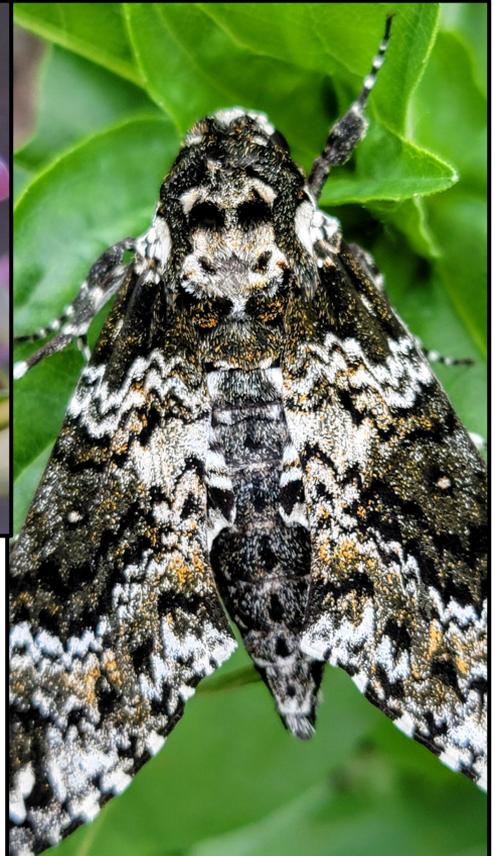
Common: Common Buckeye  
Scientific: *Junonia coenia*



# “Pest?”



# “Pest?”



Common: Cultivated Tobacco  
Scientific: *Nicotiana tabacum*  
Family: Solanaceae (Nightshades)





# Fire and Oklahoma











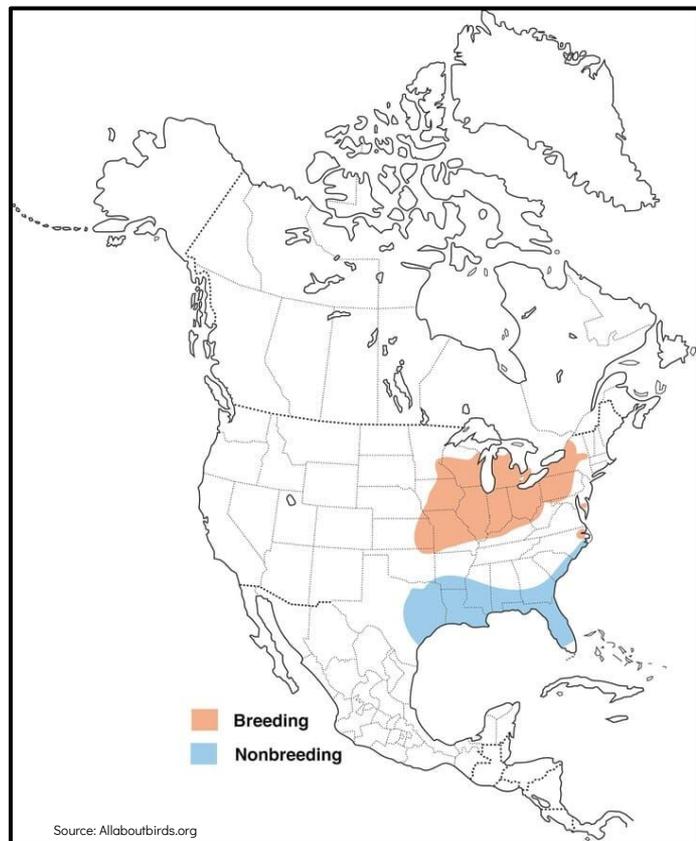
# Henslow's Sparrow Habitat Surveys

- Henslow's Sparrow (*Centronyx henslowii*)
  - Native Prairie Species
  - Specific Nesting Habitat
    - 2.5 Years Post Burned Grasslands
  - Recorded Individual Life Span
    - ~5 Years
  - Ground Nesting and Foraging

[Henslow's Sparrow Overview, All About Birds, Cornell Lab of Ornithology](#)



Source: Tim Simmons, Macaulay Library



Source: Allaboutbirds.org

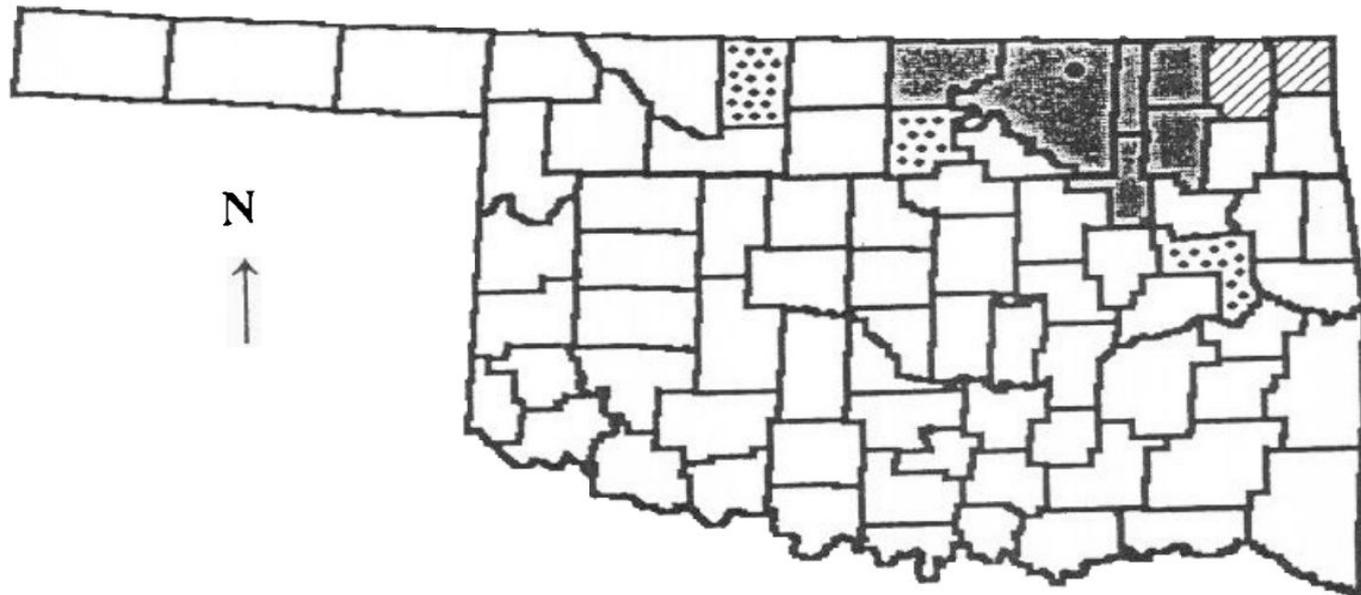




**Table 1.** Henslow's sparrow detections by month on ten 400 m transects with fixed width of 100 m in five management units in tallgrass prairie of northeastern Oklahoma, 1996.

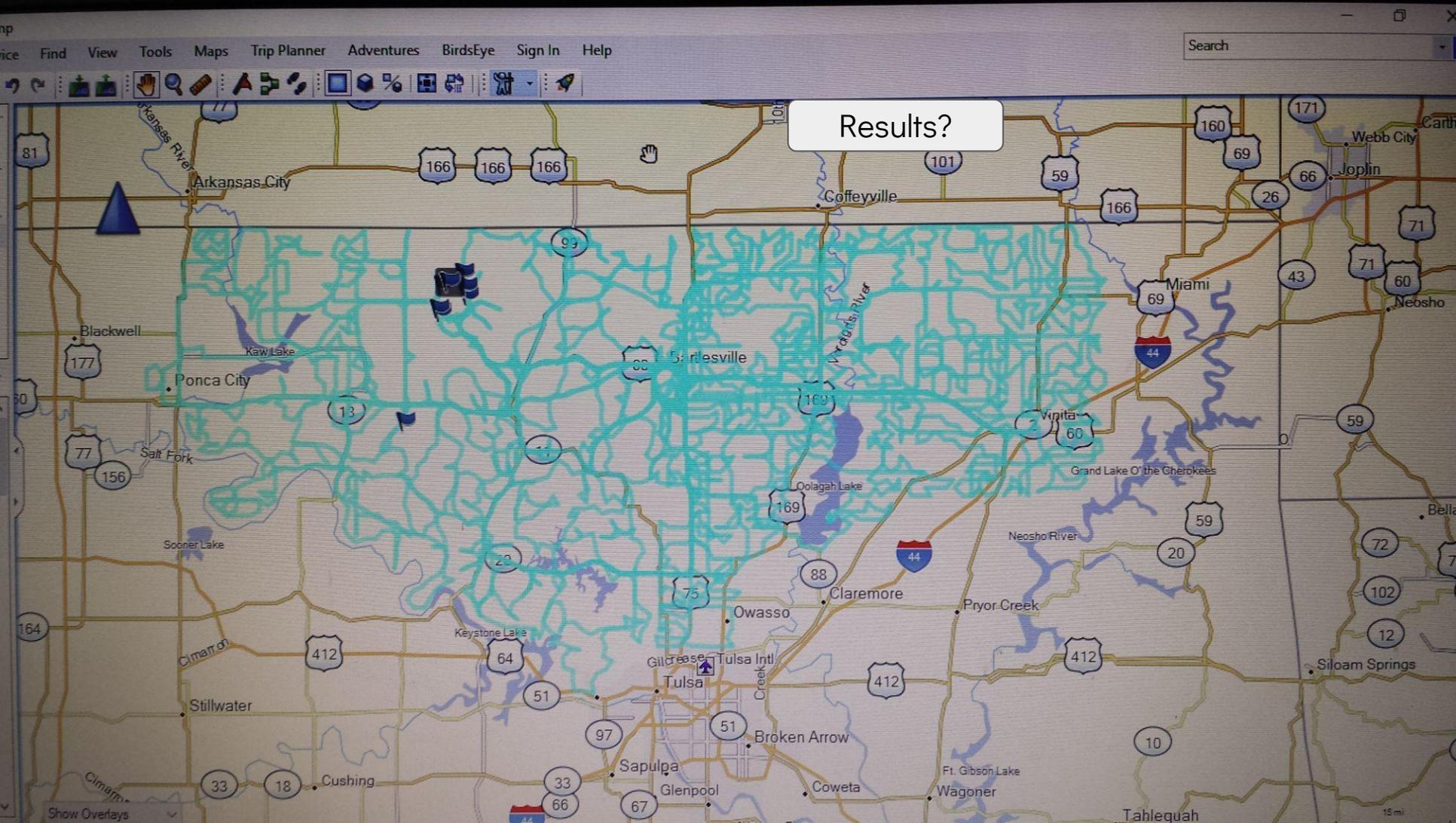
Management Unit and Size	May	June	July
0 years post fire (479 ha)	0	0	0
1 year post fire (615 ha)	0	0	0
2 years post fire (914 ha)	2	3	6
3 years post fire (121 ha)	1	6	7
> 3 years post fire (129 ha)	1	4	8



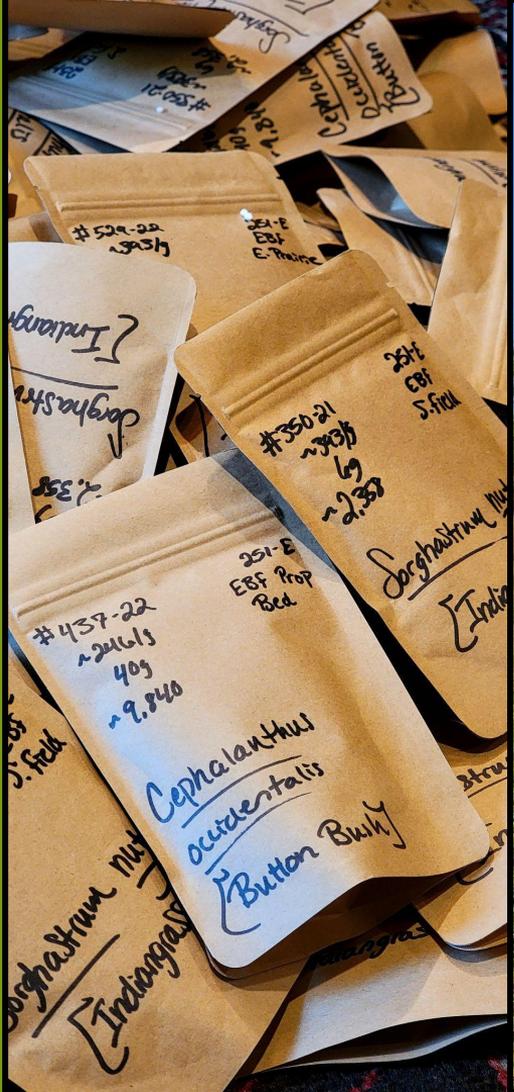


**Figure 1.** Current known range and areas surveyed for Henslow's sparrow in Oklahoma. Darkly shaded counties were surveyed in 1996 and contained Henslow's sparrow. Additional breeding season reports from Noble County (southwestern-most dotted county) in 1997 and 1998 and a spring report from Alfalfa County (western-most dotted county) in 1998 are illustrated along with a June 1998 sighting from Muskogee County (southern-most dotted county). The two barred northeastern counties were surveyed for sparrows in 1996 but none were found. The single dot represents the location of the Tallgrass Prairie Preserve in Osage County.





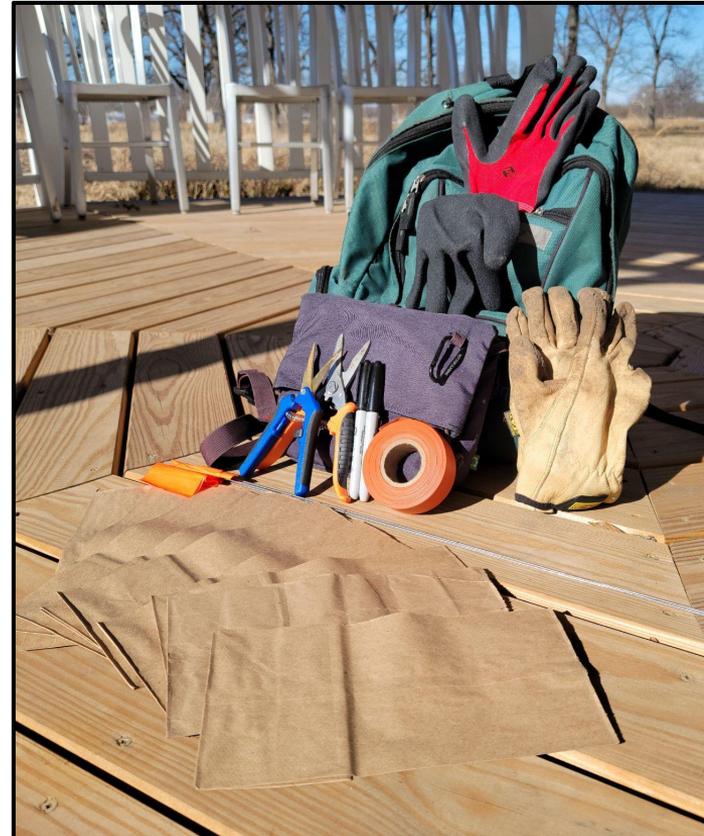
Results?



# Collection Methods

## Supplies to Bring

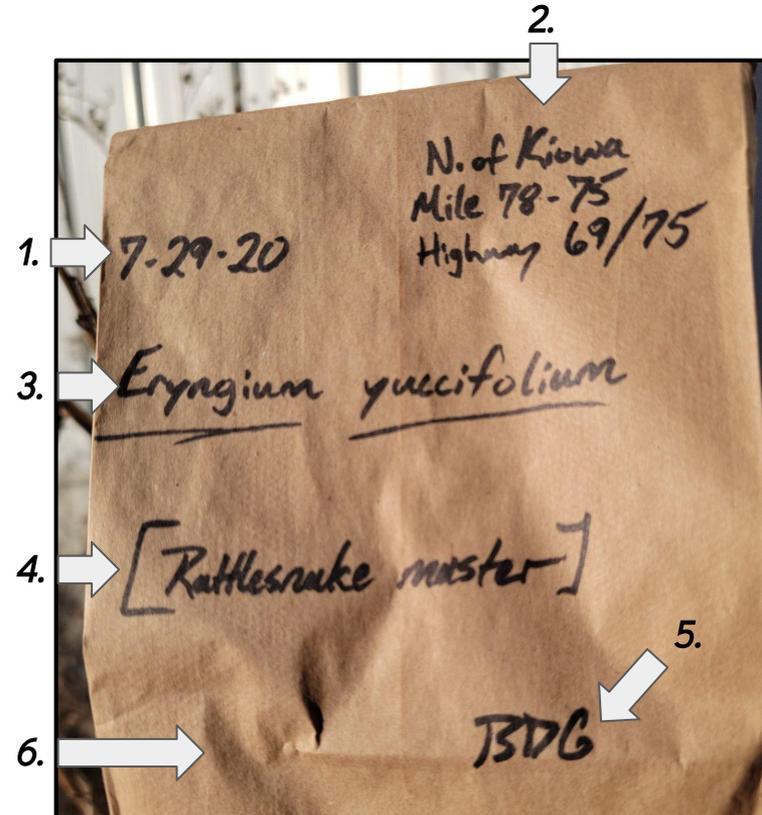
- Paper lunch bags
- Sharpie marker
- Clippers/Pruners
- Gloves
- Marking tape
- Marking flags
- Backpack, waist pack, satchel bag, etc.
- Buggy spray
- Phone/camera/GPS device
  - Spare batteries!



# Collection Methods

## Recording Data

1. Full date of collection
2. Location of collection
  - Landmarks, GPS point, mile markers, etc.
3. Genus and species if known
4. Common name if known
5. Initials of collector(s)
6. I.D. Notes
  - Height, texture, soil moisture, associated flora, etc.
  - TIME OF PHOTOS TAKEN!





Date Taken: May 26, 2021



Date Taken: June 18, 2021





# Collection Methods

Common:  
White Wild Indigo

Scientific:  
*Baptisia alba*

Family:  
Fabaceae  
(Legume)



Too early!



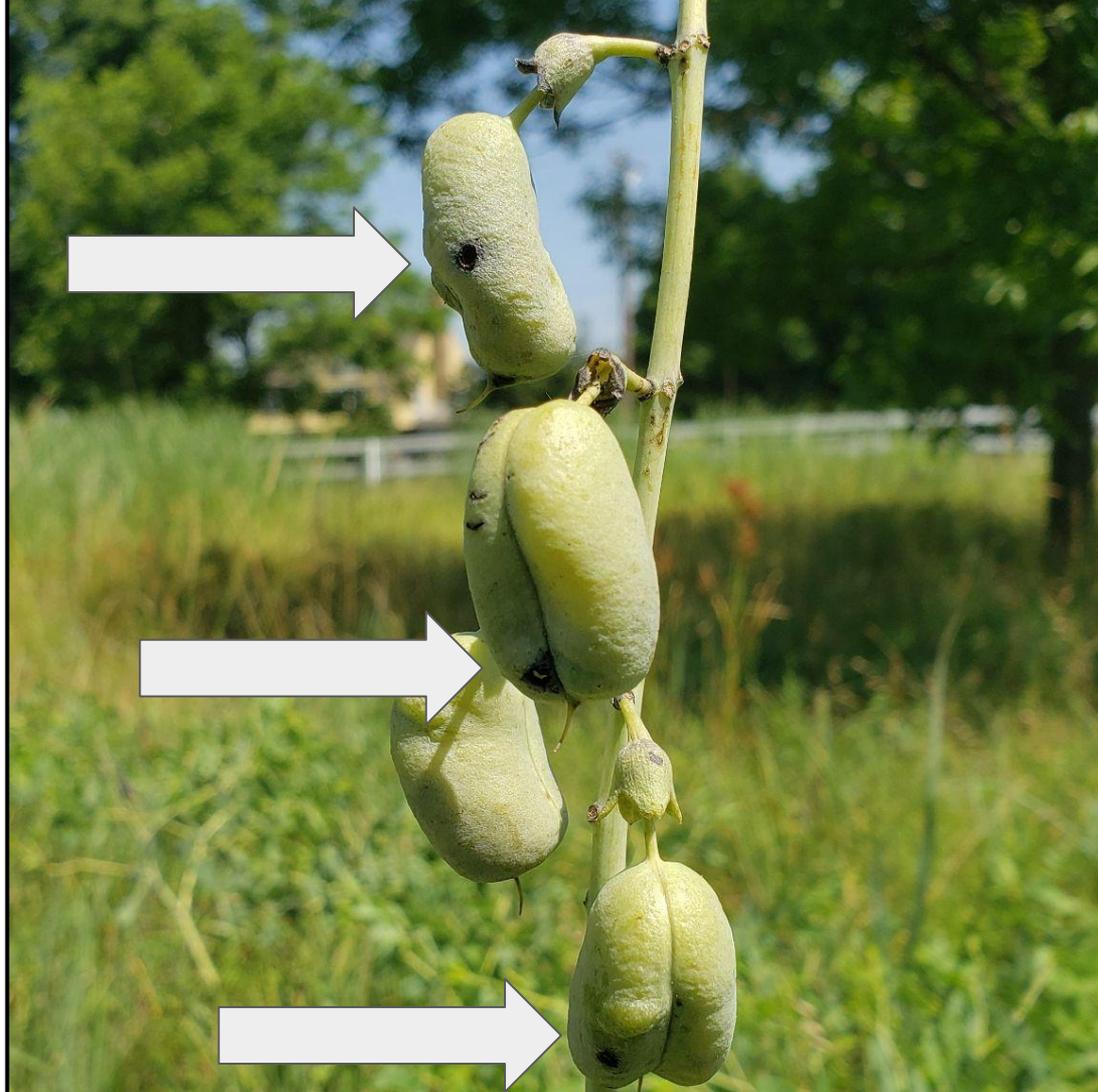
Mature seeds



Common:  
White Wild Indigo

Scientific:  
*Baptisia alba*

Family:  
Fabaceae  
(Legume)



Common:  
Green Antelope  
Horn Milkweed

Scientific:  
*Asclepias viridis*

Family:  
Apocynaceae  
(Dogbane)



Common:  
Green Antelope  
Horn Milkweed

Scientific:  
*Asclepias viridis*

Family:  
Apocynaceae  
(Dogbane)



Common:  
Green Antelope  
Horn Milkweed

Scientific:  
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Family:  
Apocynaceae  
(Dogbane)



Common:  
Green Antelope  
Horn Milkweed

Scientific:  
*Asclepias viridis*

Family:  
Apocynaceae  
(Dogbane)



Common:  
Indiangrass

Scientific:  
*Sorghastrum nutans*

Family:  
*Poaceae*  
(Grass)



Common:  
Northern Sea Oats

Scientific:  
*Chasmanthium*  
*latifolium*

Family:  
*Poaceae*  
(Grass)



Common:  
Tall Goldenrod

Scientific:  
*Solidago altissima*

Family:  
Asteraceae  
(Composite)



Common:  
Tall Goldenrod

Scientific:  
*Solidago altissima*

Family:  
Asteraceae  
(Composite)



Common:  
Illinois Bundleflower

Scientific:  
*Desmanthus illinoensis*

Family:  
*Fabaceae*  
(Legume)



Common:  
Frostweed

Scientific:  
*Verbesina virginica*

Family:  
*Asteraceae*  
(Composite)



Common:  
Frostweed

Scientific:  
*Verbesina virginica*

Family:  
Asteraceae  
(Composite)



Common:  
Rough Blazing Star

Scientific:  
*Liatris aspera*

Family:  
*Asteraceae*  
(Composite)





Common:  
Cardinal Flower

Scientific:  
*Lobelia cardinalis*

Family:  
Campanulaceae  
(Bellflowers)



Common:  
Cardinal Flower

Scientific:  
*Lobelia cardinalis*

Family:  
Campanulaceae  
(Bellflowers)









White Mts  
Emmental Cheese  
7-11-24

White Mts  
Emmental Cheese  
7-11-24  
Almona  
8:25 PM  
- No spores

7-11-24  
All Sorts  
Pine  
Area  
Commensals  
[ Desmoulinia asper ]  
8:06 PM  
BDS  
JLK

7-11-24  
Vigor Cuts  
Laminated  
Barkolan  
8:30 PM

White Mts  
Emmental Cheese  
7-11-24  
Almona  
8:25 PM  
- No spores

White Mts  
Emmental Cheese  
7-11-24  
Almona  
8:25 PM  
- No spores

White Mts  
Emmental Cheese  
7-11-24  
Almona  
8:25 PM  
- No spores

# Seed Bank

- Seed Cleaning
  - Hoffman Seed Blower
    - Seed quality
    - Time efficiency

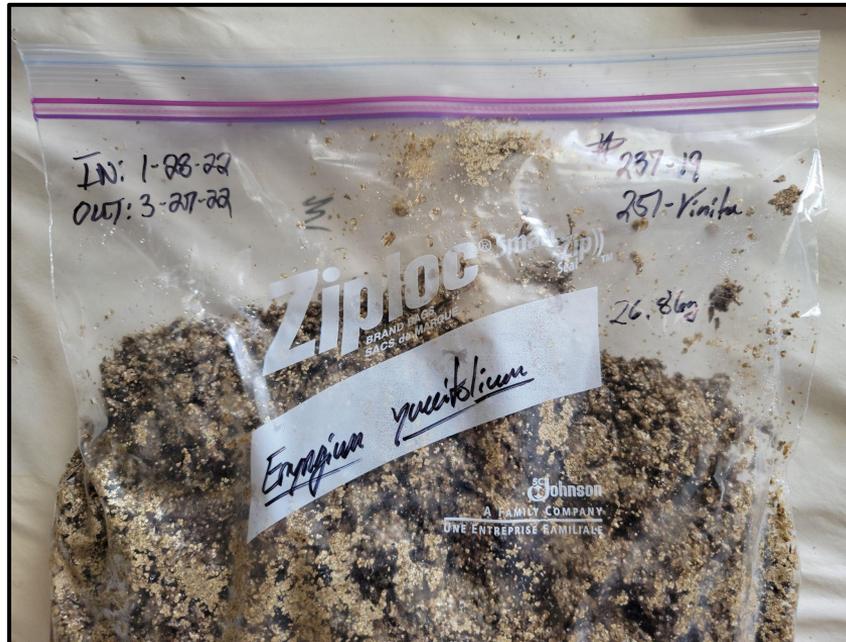


# Seed Storage



# Plant Propagation

- Stratification
  - Mimicking the natural conditions that seeds experience through a season
  - Increases germination percentage
  - Not all seeds require this process



# Plant Propagation



# Plant Propagation

Common:  
Prairie Blazing Star

Scientific:  
*Liatris pycnostachya*

Family:  
Asteraceae  
(Composite)



# Plant Propagation

Common:  
Prairie Blazing Star

Scientific:  
*Liatris pycnostachya*

Family:  
Asteraceae  
(Composite)



# Plant Propagation



# Plant Propagation



# Plant Propagation









# Literature Resources

"Botany in a Day: The Patterns Method of Field Identification" by Thomas J. Elpel

"Field Guide to the Common Grasses of Oklahoma, Kansas, and Nebraska" by Iralea Barnard

"Flora of Oklahoma Keys and Descriptions 2nd Edition" by Adam K Ryburn and et. al.

"Oklahoma Native Plants: A Guide to Designing Landscapes to Attract Birds and Butterflies" by Connie Scothorn and Brain Patric

"Prairie Wildflowers: A Guide to Flowering Plants from the Midwest to the Great Plains" by Don Kurz

"The Tallgrass Prairie Center Guide to Seed and Seedling Identification in the Upper Midwest" by Dave Williams

"Wildflowers & Grasses of Kansas and Oklahoma: A Field Guide" by Michael John Haddock

"Wildflowers of the Tallgrass Prairie: The Upper Midwest Second Edition" by Sylvan T. Runkel and Dean M. Roosa



# Online Resources

Google Scholar: <https://scholar.google.com/>

iNaturalist : <https://www.inaturalist.org/>

Lady Bird Johnson Wildlife Center: <https://www.wildflower.org/>

Missouri Botanical Garden: <https://www.missouribotanicalgarden.org/>

Native American Ethnobotany Database: <http://naeb.brit.org/>

Oklahoma Vascular Plants Database: <https://www.oklahomaplantdatabase.org/>

Plants USDA Database: <https://plants.usda.gov/home>

Prairie Moon Nursery: <https://www.prairiemoon.com/>

Wikipedia: [https://en.wikipedia.org/wiki/Main\\_Page](https://en.wikipedia.org/wiki/Main_Page)

Wikispecies: [https://species.wikimedia.org/wiki/Main\\_Page](https://species.wikimedia.org/wiki/Main_Page)



# Thank you!

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