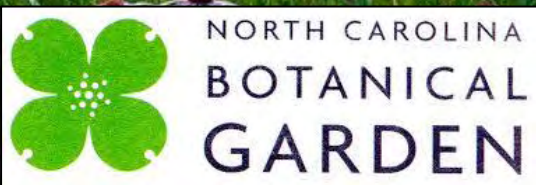


# The Southeastern Grasslands Initiative:

Protecting, Restoring, and Rebuilding the Forgotten Grasslands of the South





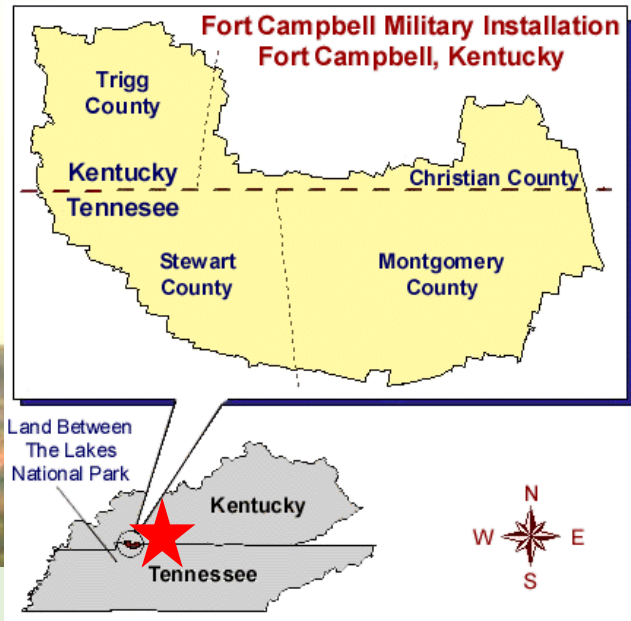
# Tommy Johns and the Fabled Squirrel



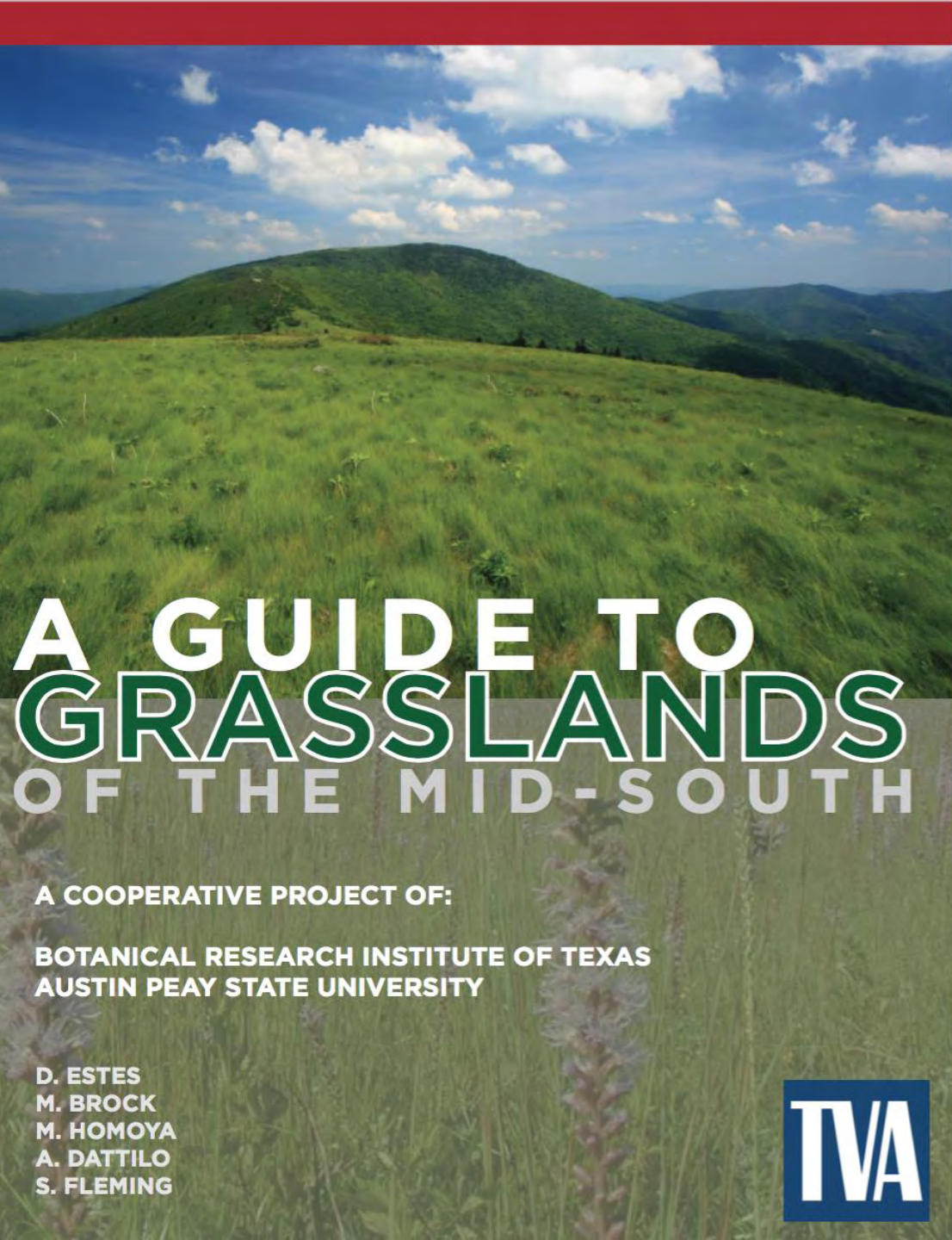




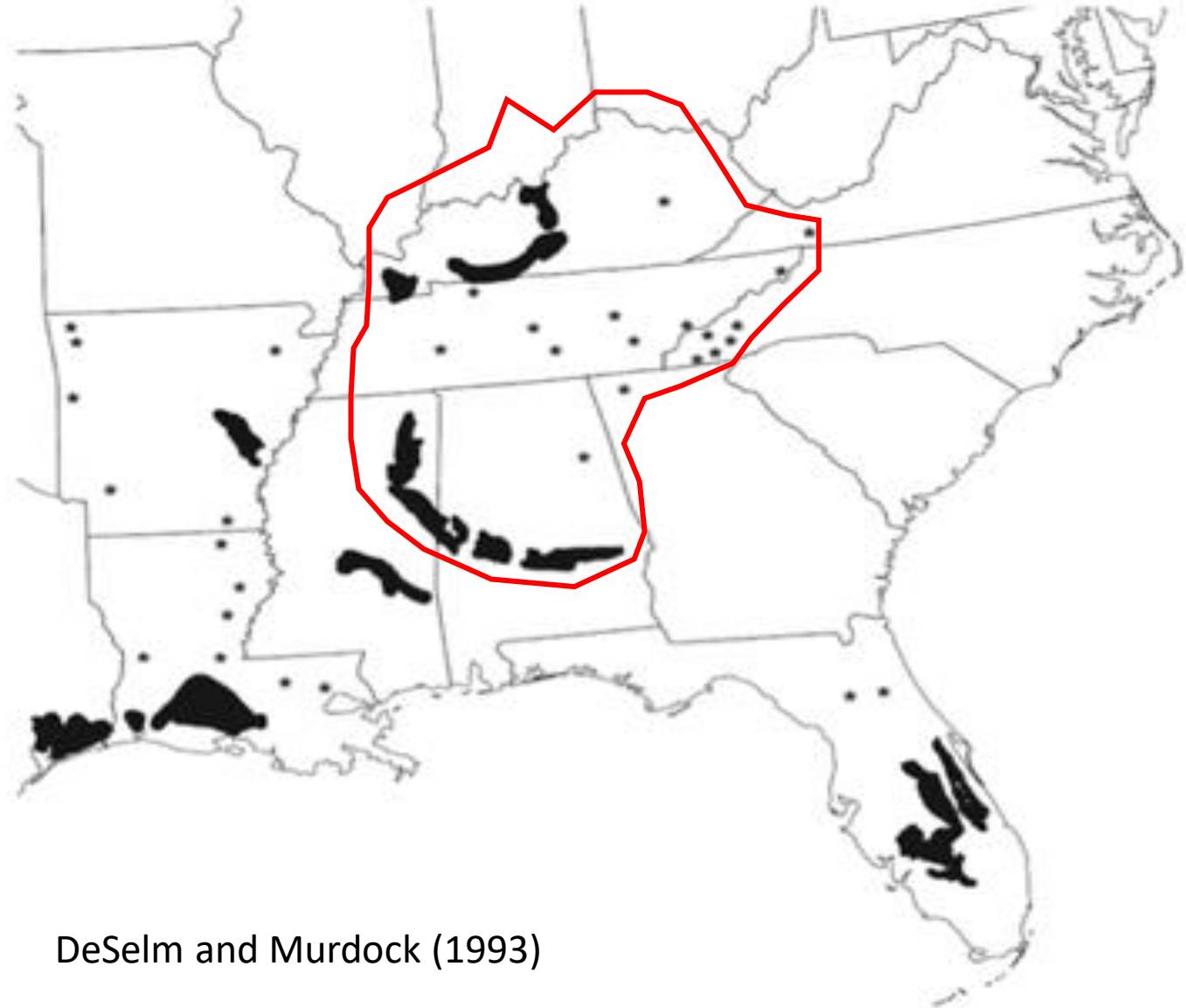
“It would be difficult to imagine anything more beautiful. Far as the eye could reach, they seemed one vast deep-green meadow, adorned with countless numbers of bright flowers springing up in all directions ... only a few clumps of trees and now and then a solitary post oak were to be seen...Here I first saw the prairie bird, or barren-hen, as we called it, which I afterwards met with in such vast numbers on the great prairies of Illinois. Here the wild strawberries grew in such profusion as to stain the horses hoofs a deep red color.” **(Ross 1812)**







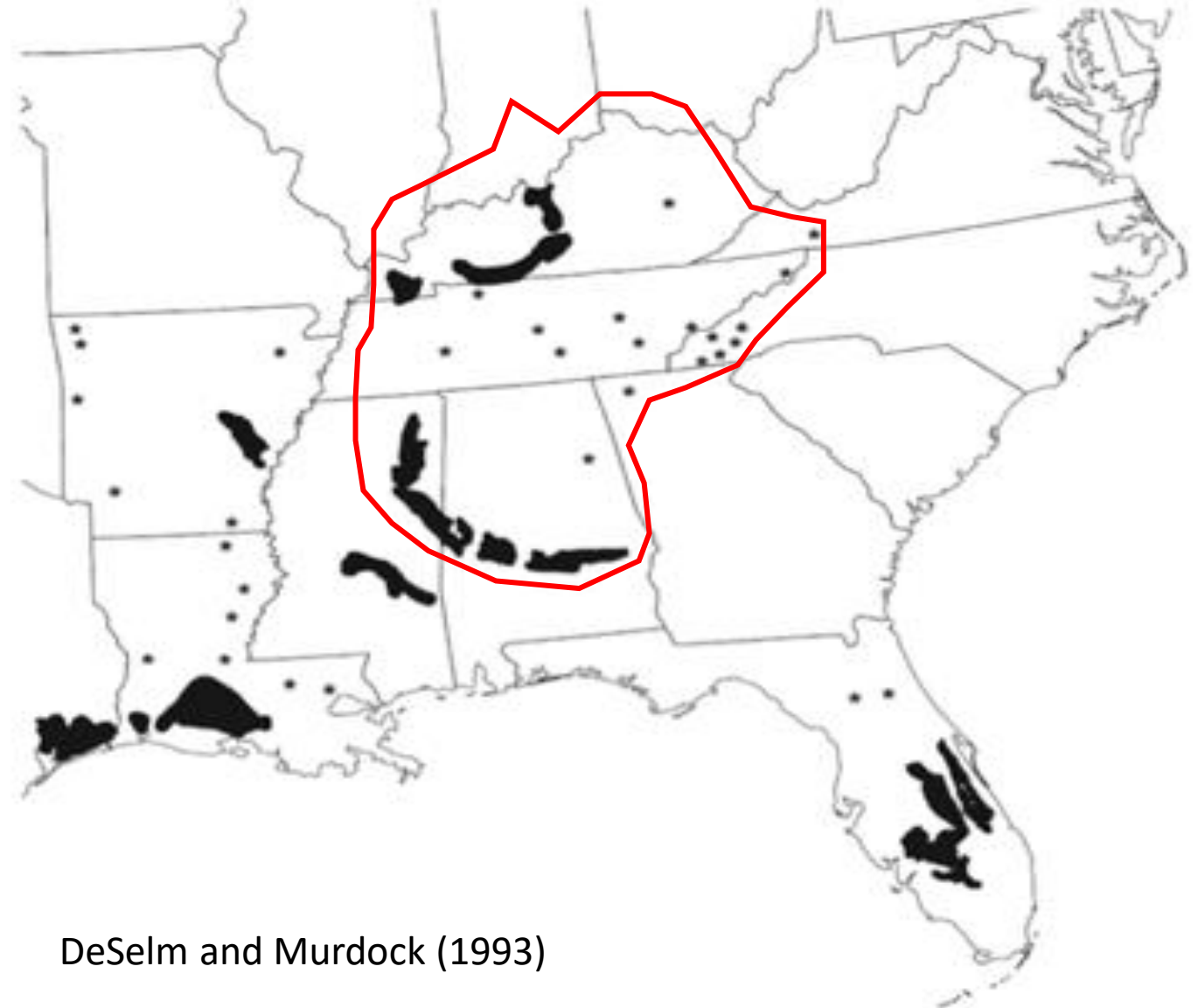
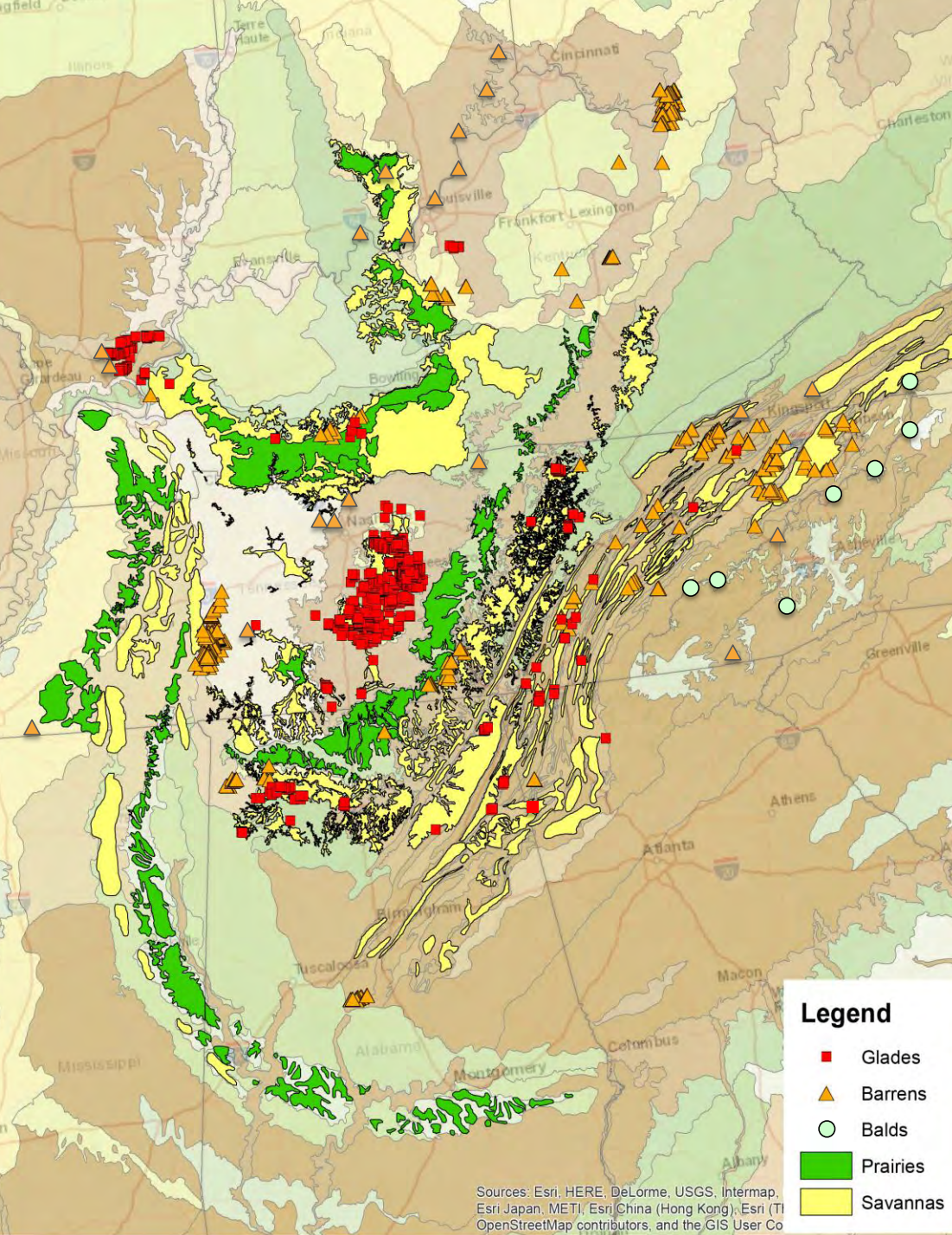
# Grasslands of the Mid-South



DeSelm and Murdock (1993)



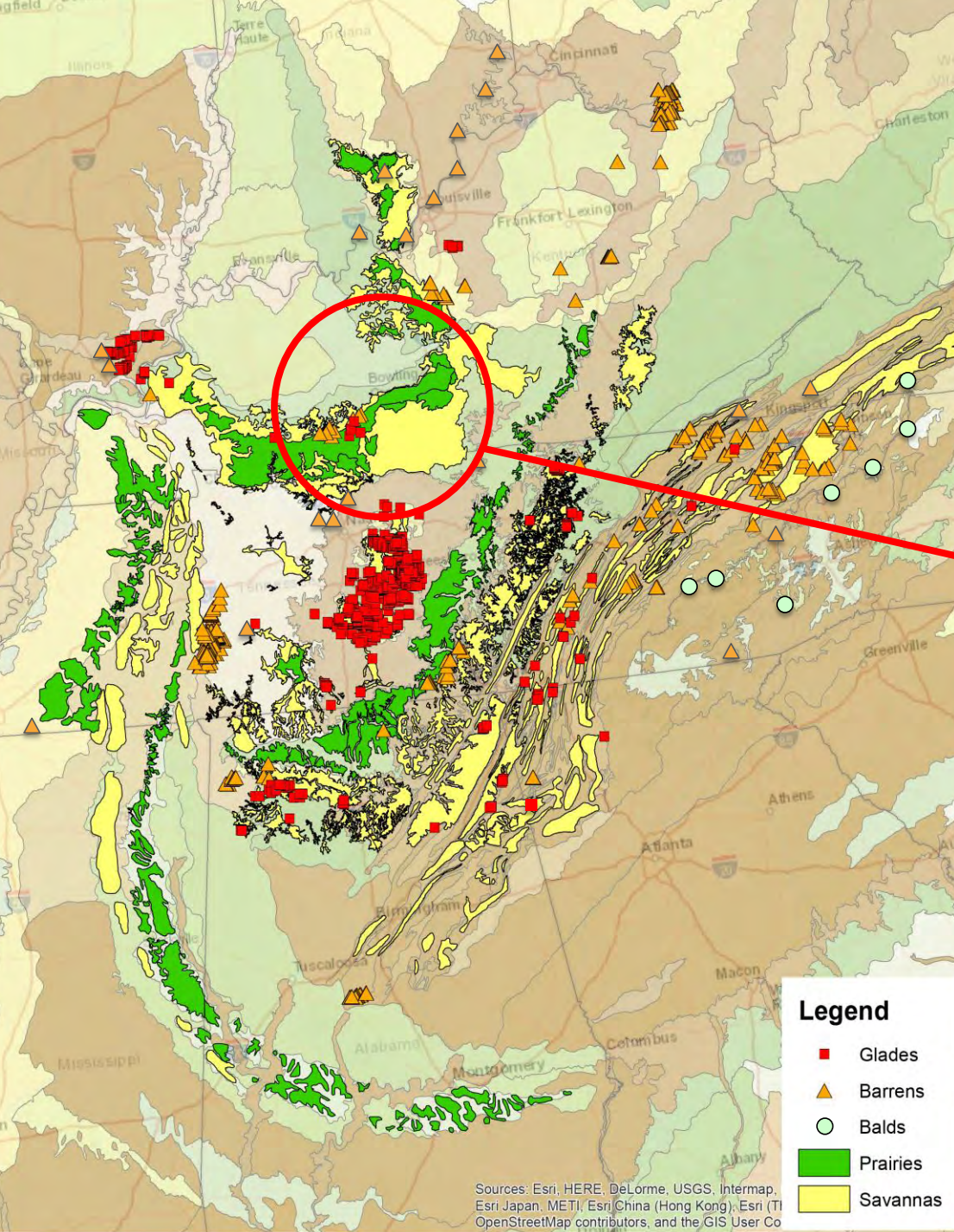
# Grasslands of the Mid-South



DeSelm and Murdock (1993)

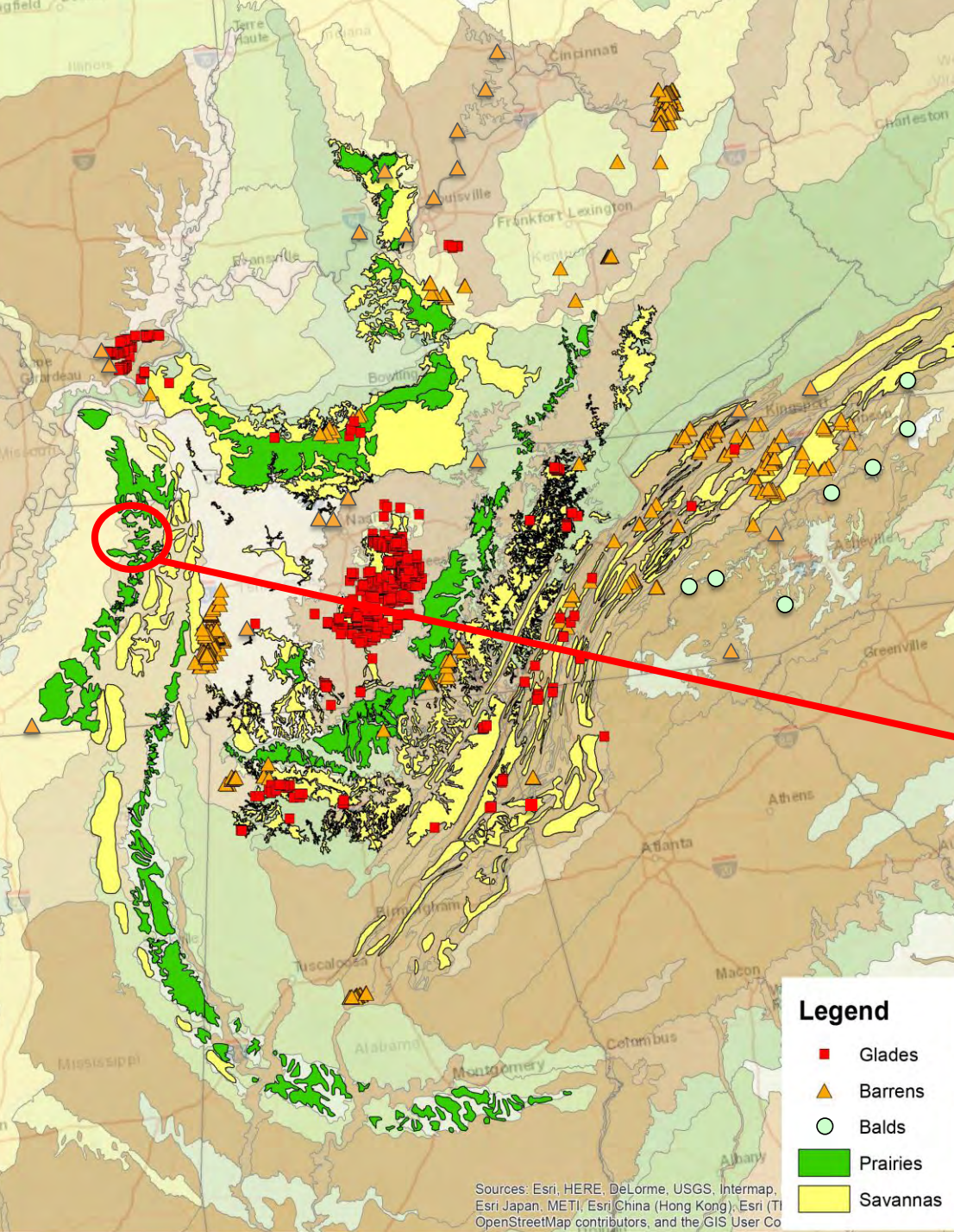


# How do we know where grasslands were historically?





# How do we know where grasslands were historically?

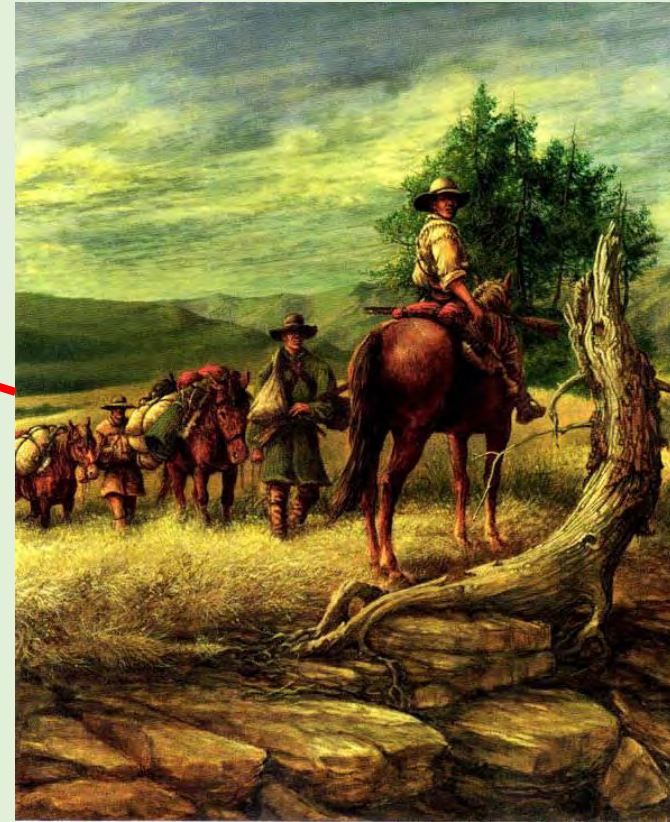
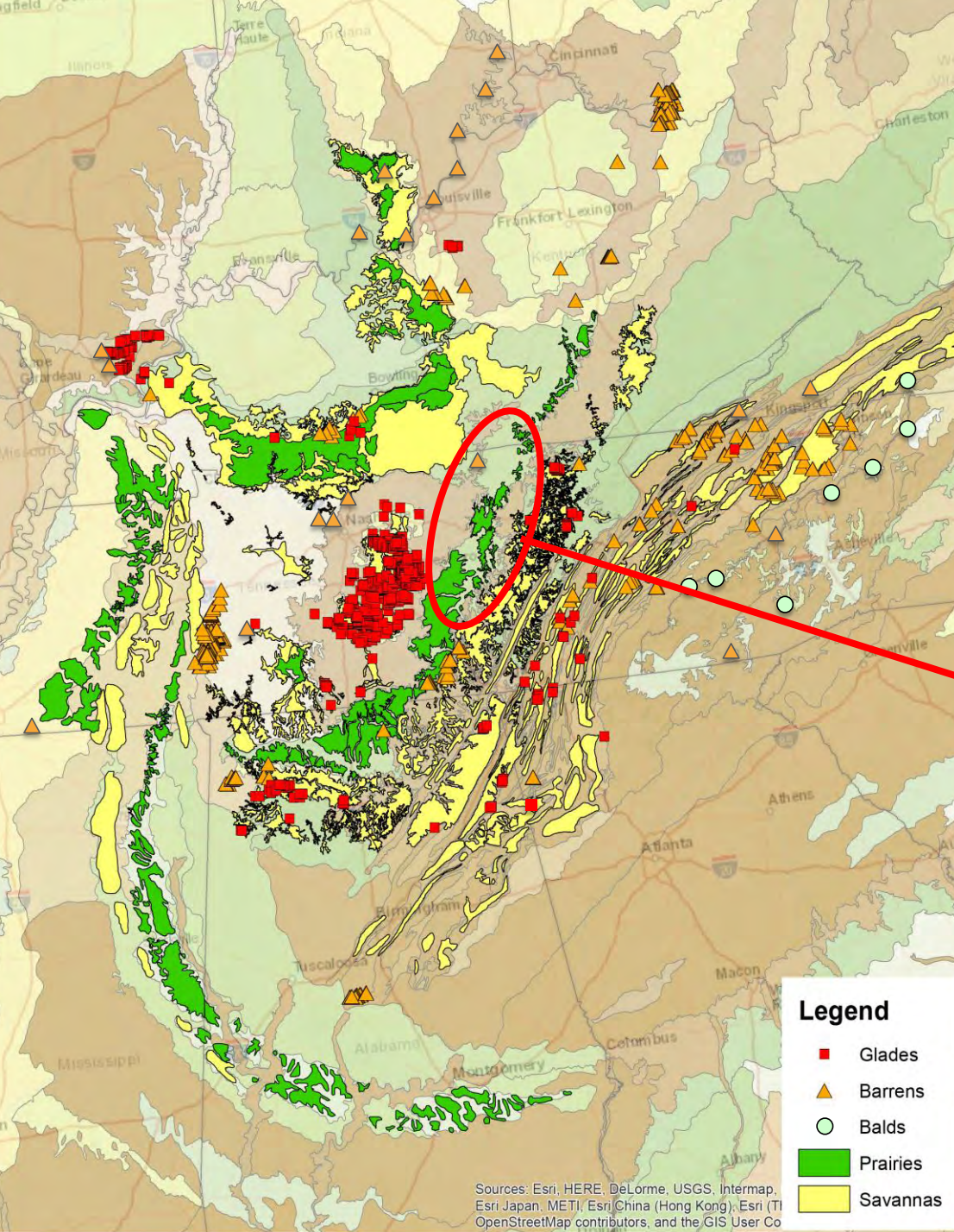


“a considerable portion of the eastern half of the county was almost treeless, and was known in our early history as ‘barrens’.”

“some of these barrens” as covering “thousands of acres of level or gently undulating land, so nearly bare of timber that in some places you could see a horseman several miles....”



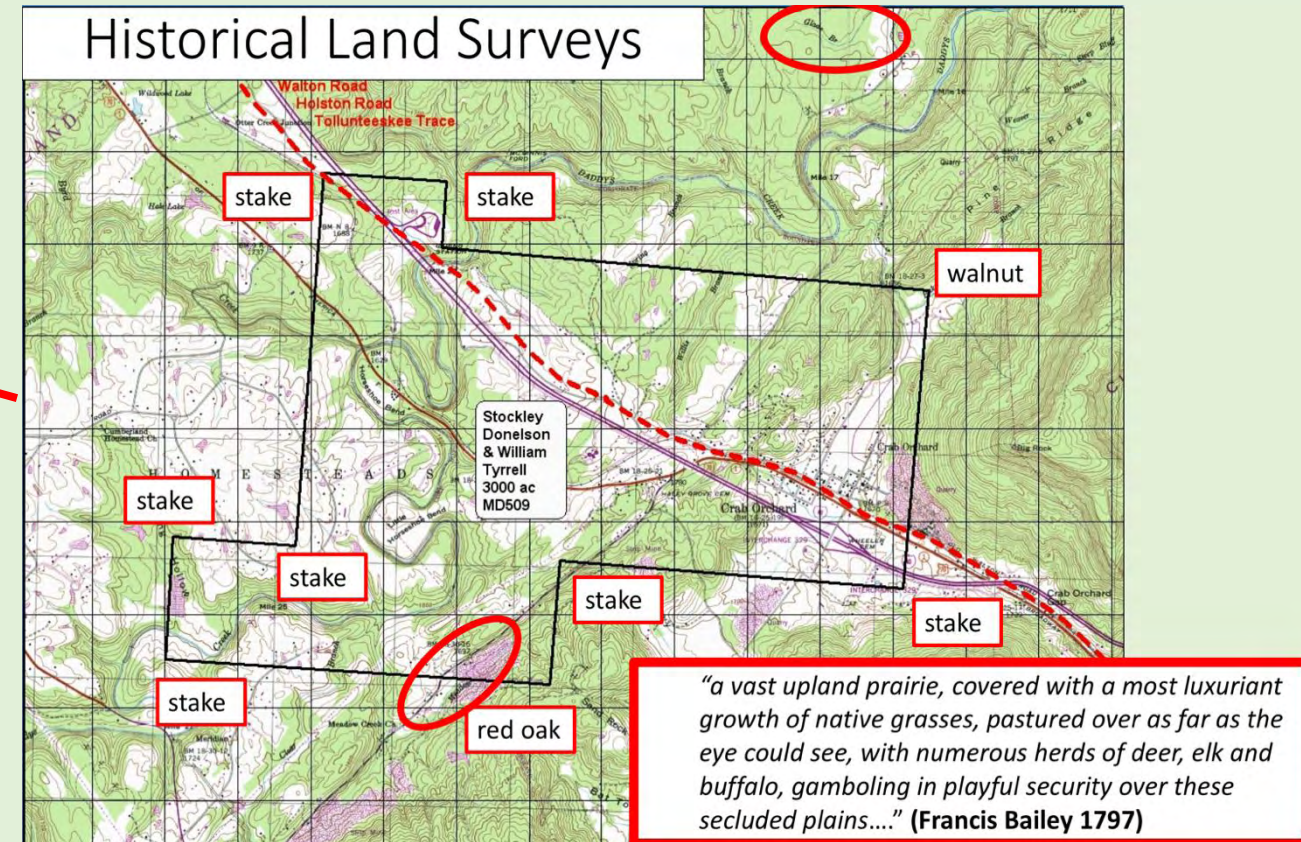
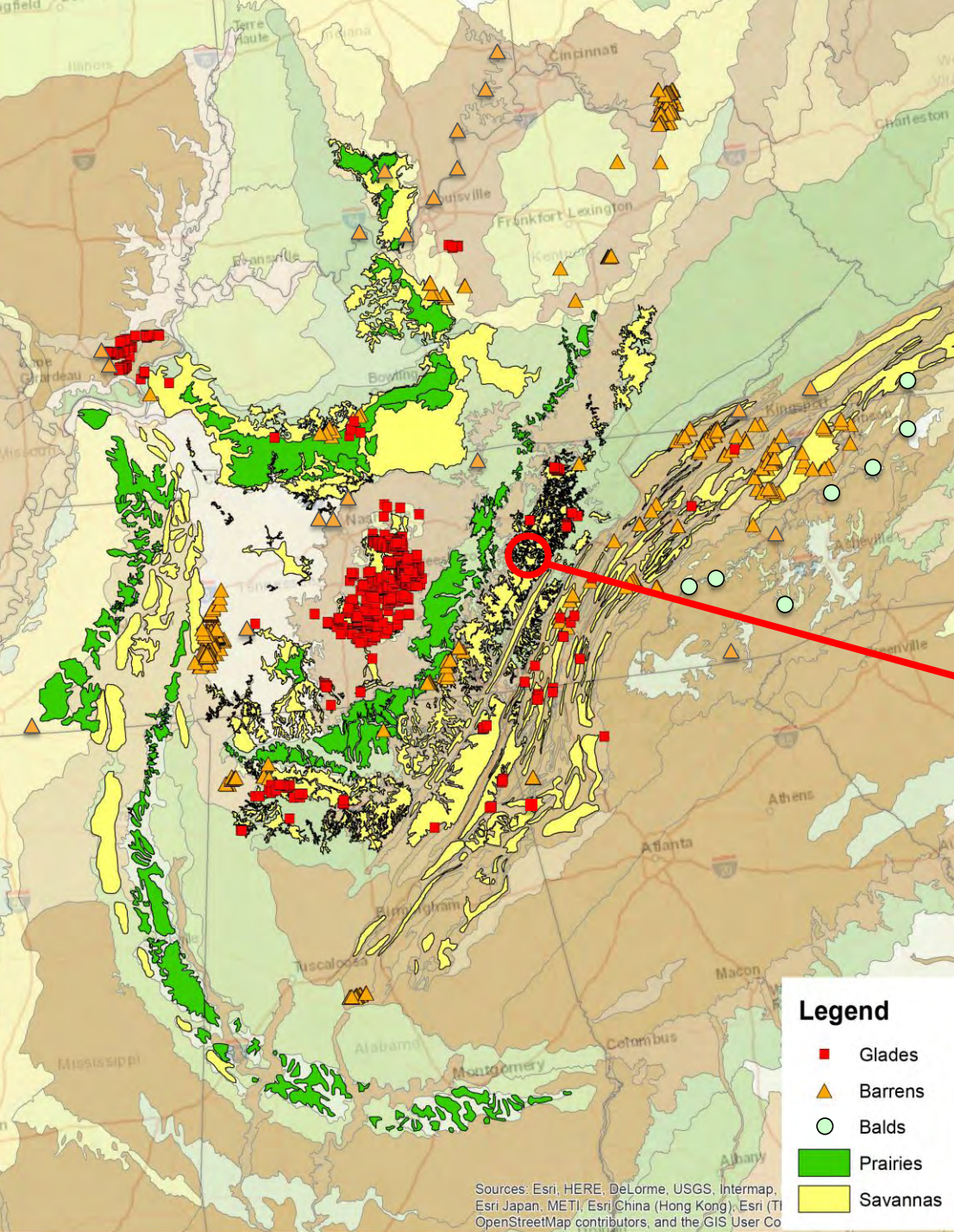
# How do we know where grasslands were historically?



**Haywood (1819):**  
***“All the country through which these hunters passed was covered with high grass, which seemed inexhaustible....”***

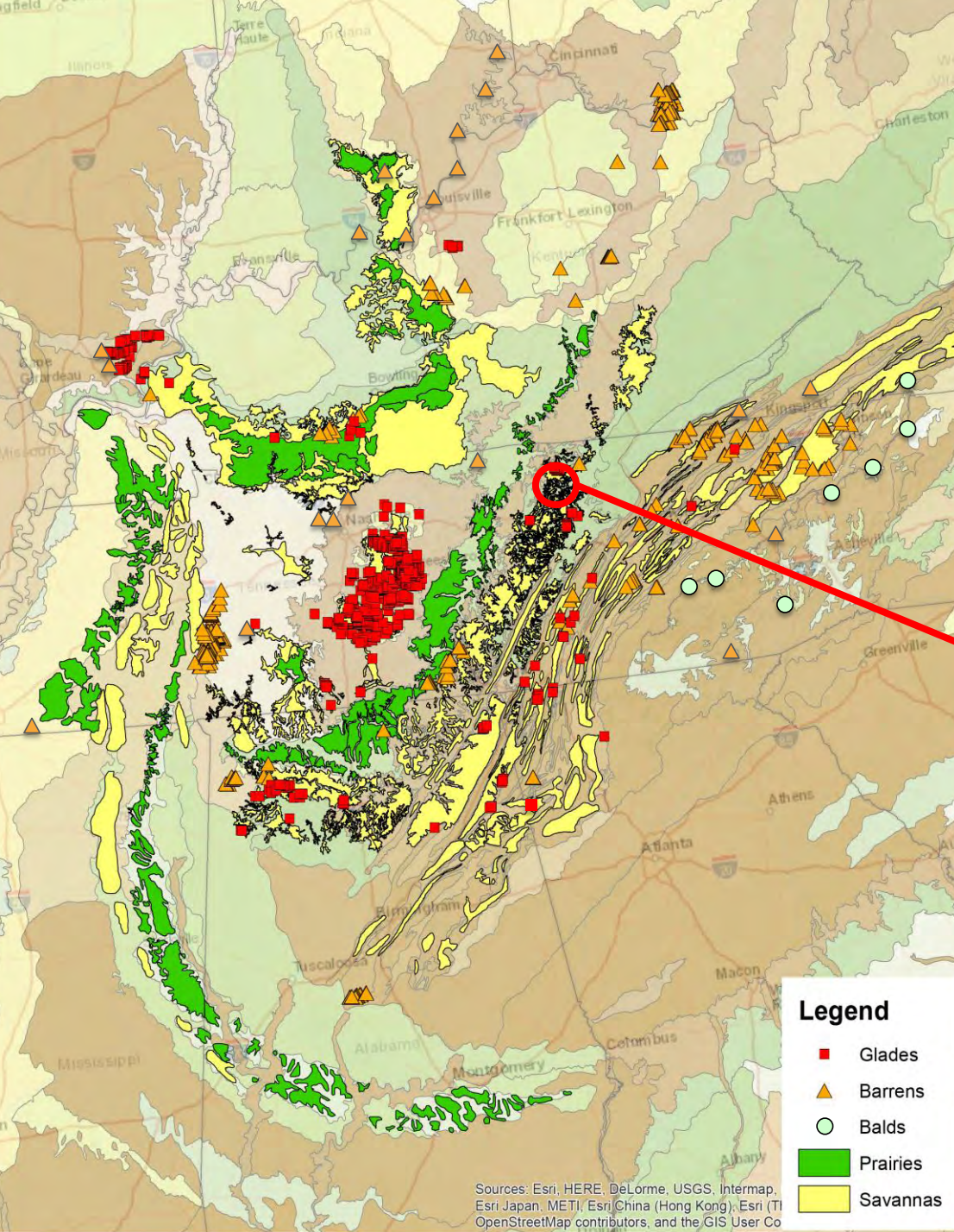


# How do we know where grasslands were historically?





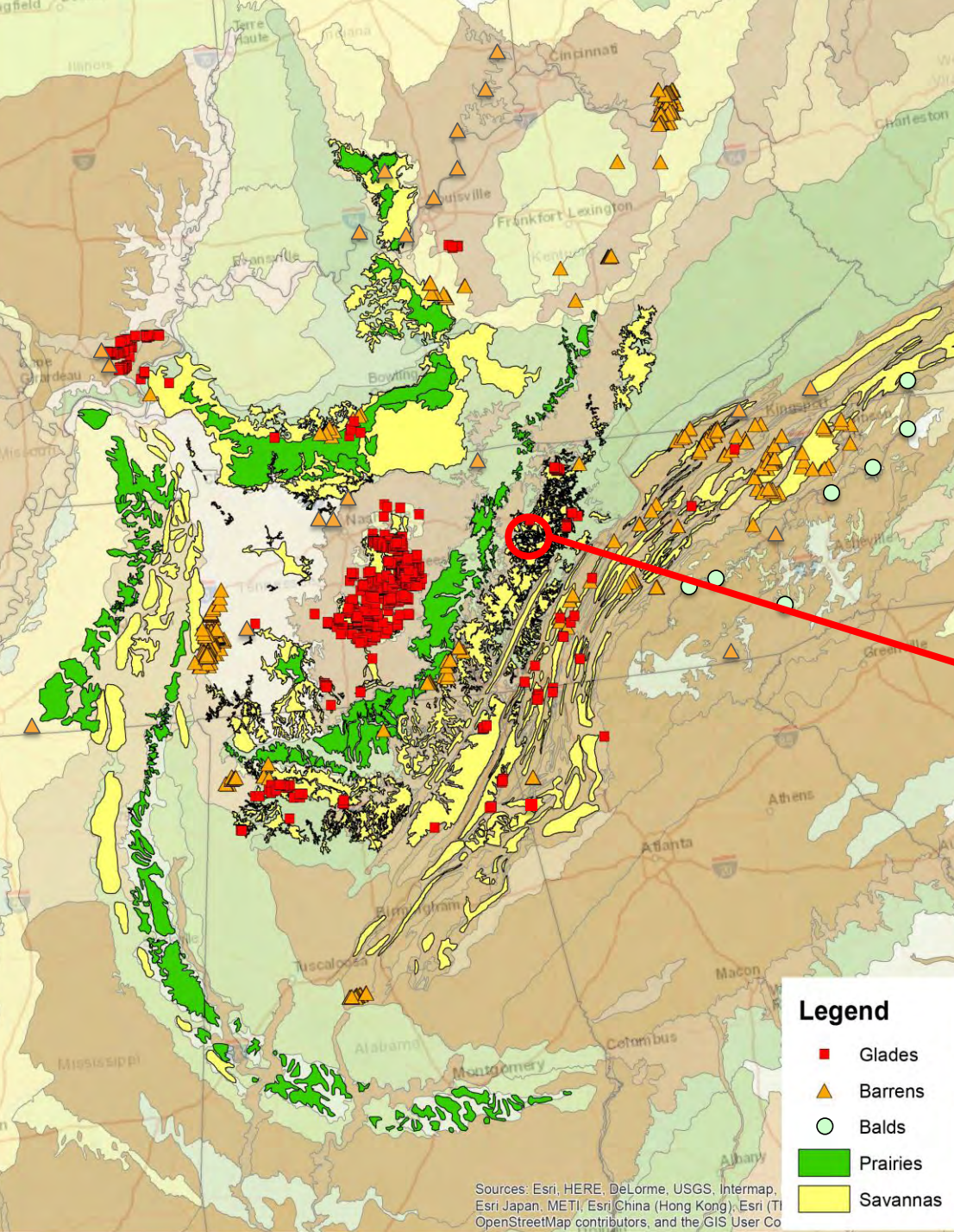
# How do we know where grasslands were historically?



American Chaffseed  
Last seen in TN in 1842



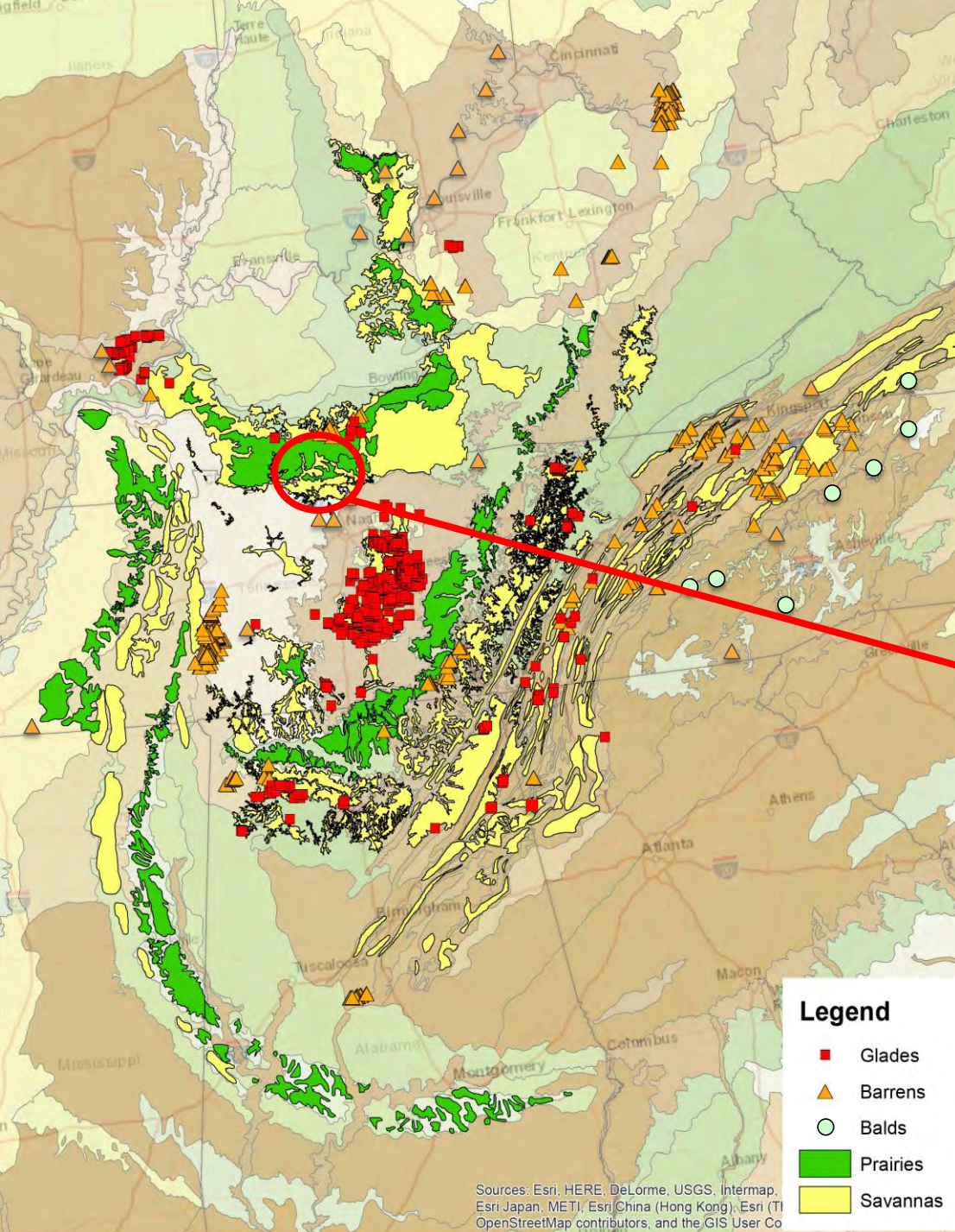
# How do we know where grasslands were historically?



Red-cockaded Woodpecker  
Last seen in TN in 1990s



# How do we know where grasslands were historically?



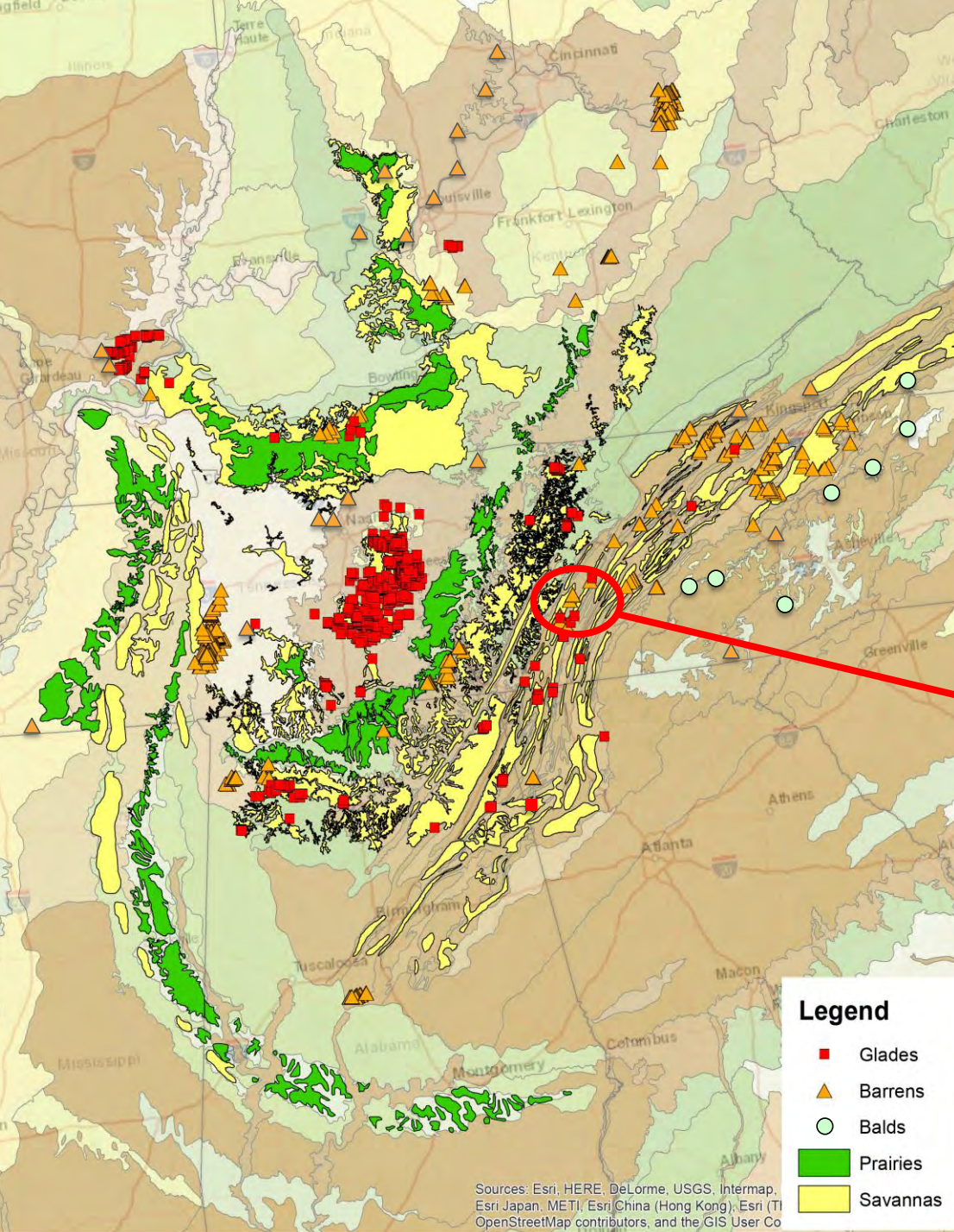


# How do we know where grasslands were historically?

## Steiner and De Schweinitz (1799)

“...an amazing extensive plains about us, covered with high grass. The plains are partly good bottoms, partly more elevated.”

“...trees were scattered, and we noticed pine, hickory...everywhere was the high grass.”

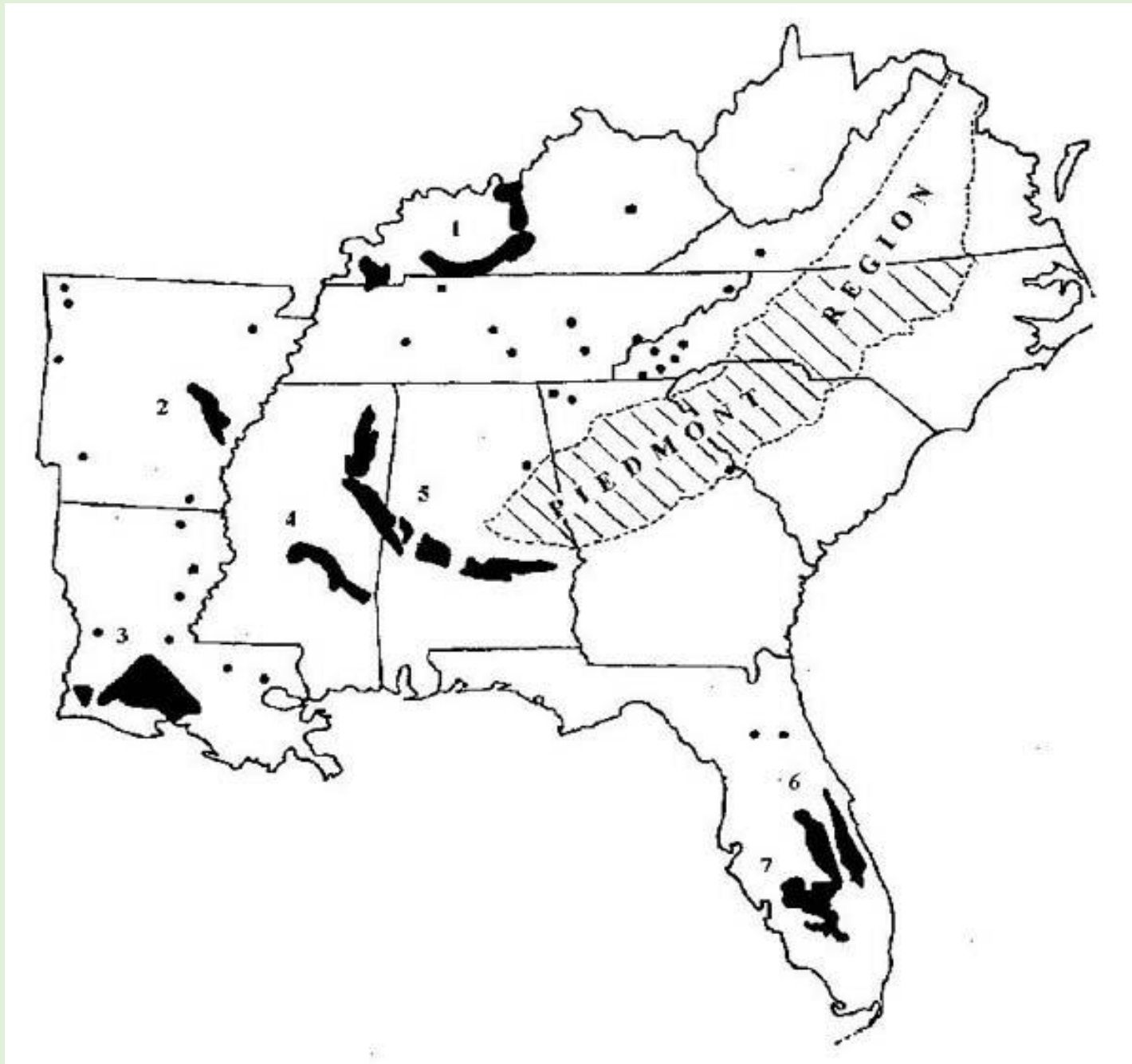






The Last 1%





Postage stamp prairies





Postage stamp prairies



# Functionally Extinct or Globally Imperiled Communities



Baker Prairie, Arkansas



# Functionally Extinct or Globally Imperiled Communities



Hazel Dell Meadow, Kentucky



# Functionally Extinct or Globally Imperiled Communities



Brockdell Rd Powerline, Tennessee



# Functionally Extinct or Globally Imperiled Communities



Coosa Prairie, Georgia



# Functionally Extinct or Globally Imperiled Communities



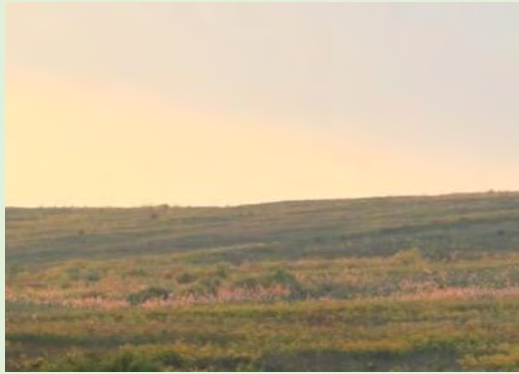
Suther Prairie, North Carolina



# Community Diversity



Barrens



Prairies



Savannas



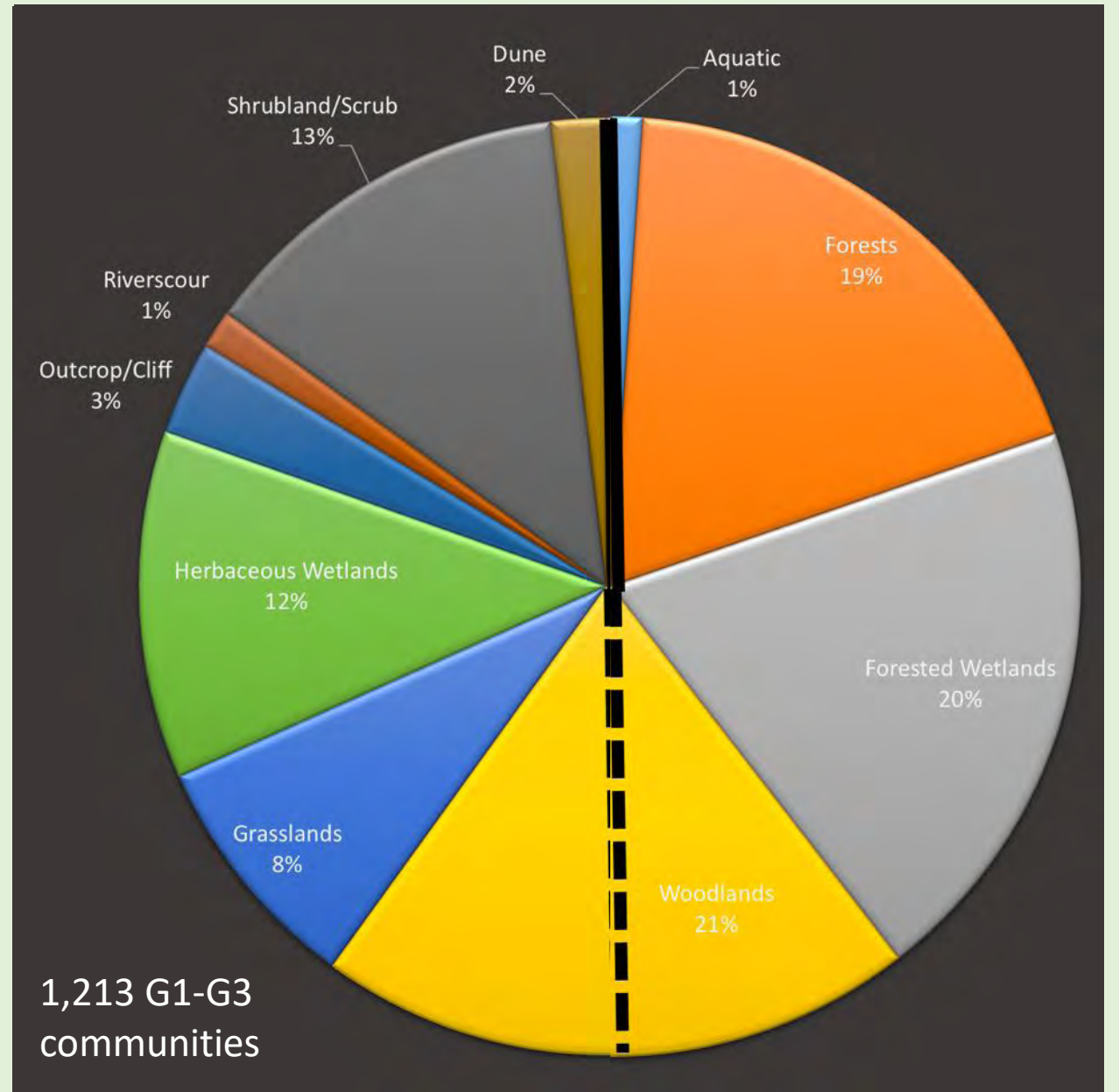
Meadows / Bogs



Glades



Grassland Ponds

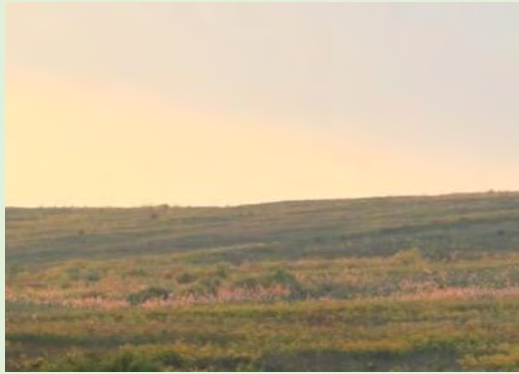




# Community Diversity



Barrens



Prairies



Savannas



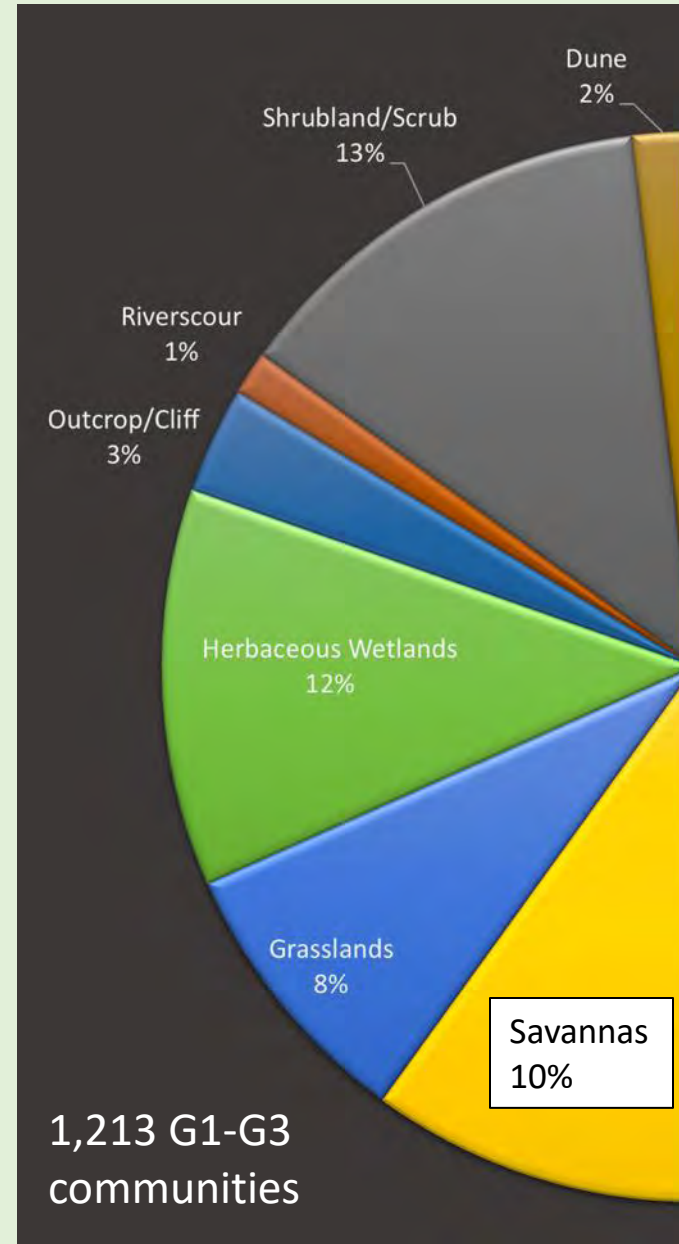
Meadows / Bogs



Glades



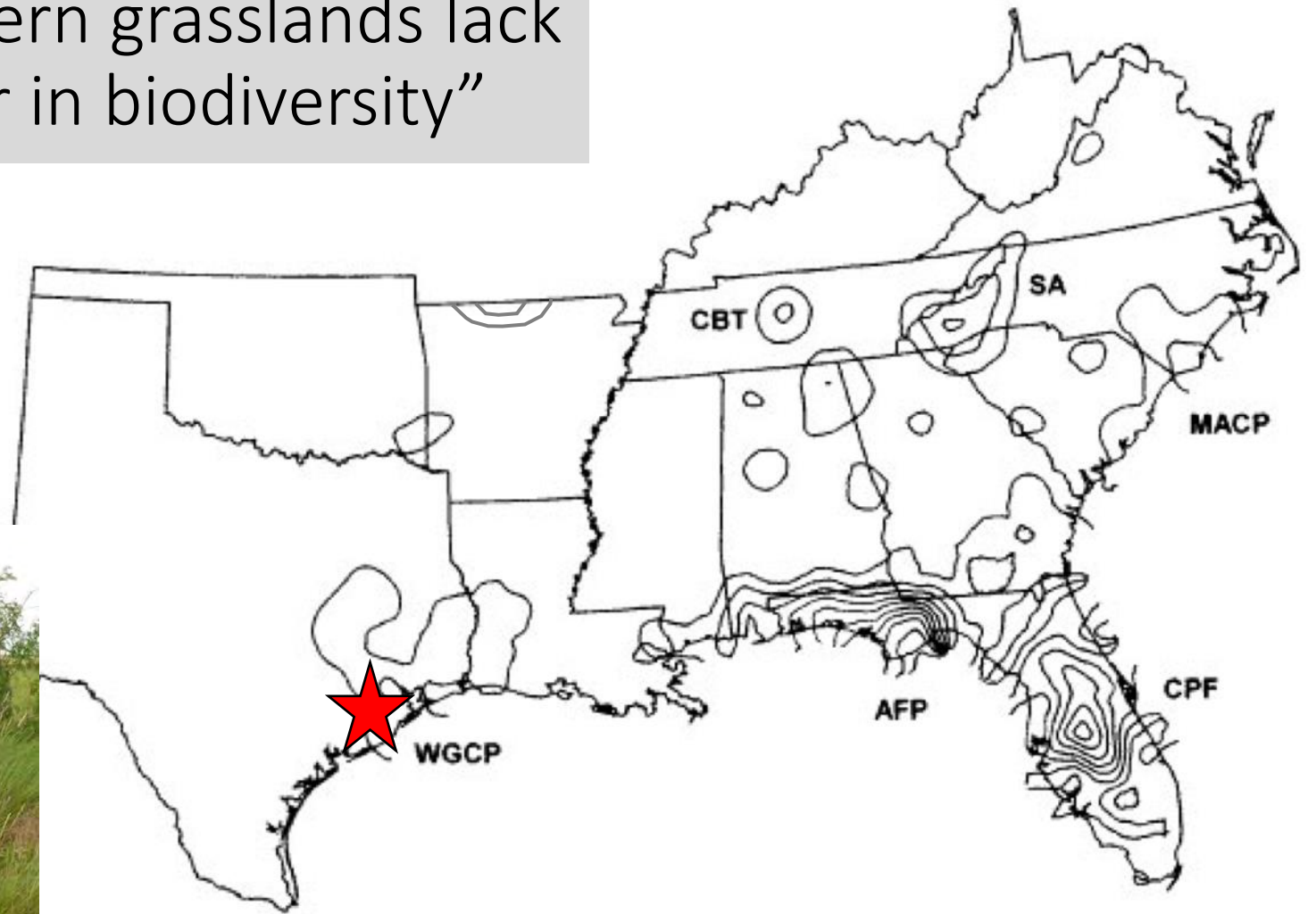
Grassland Ponds



49%  
grasslands &  
shrublands



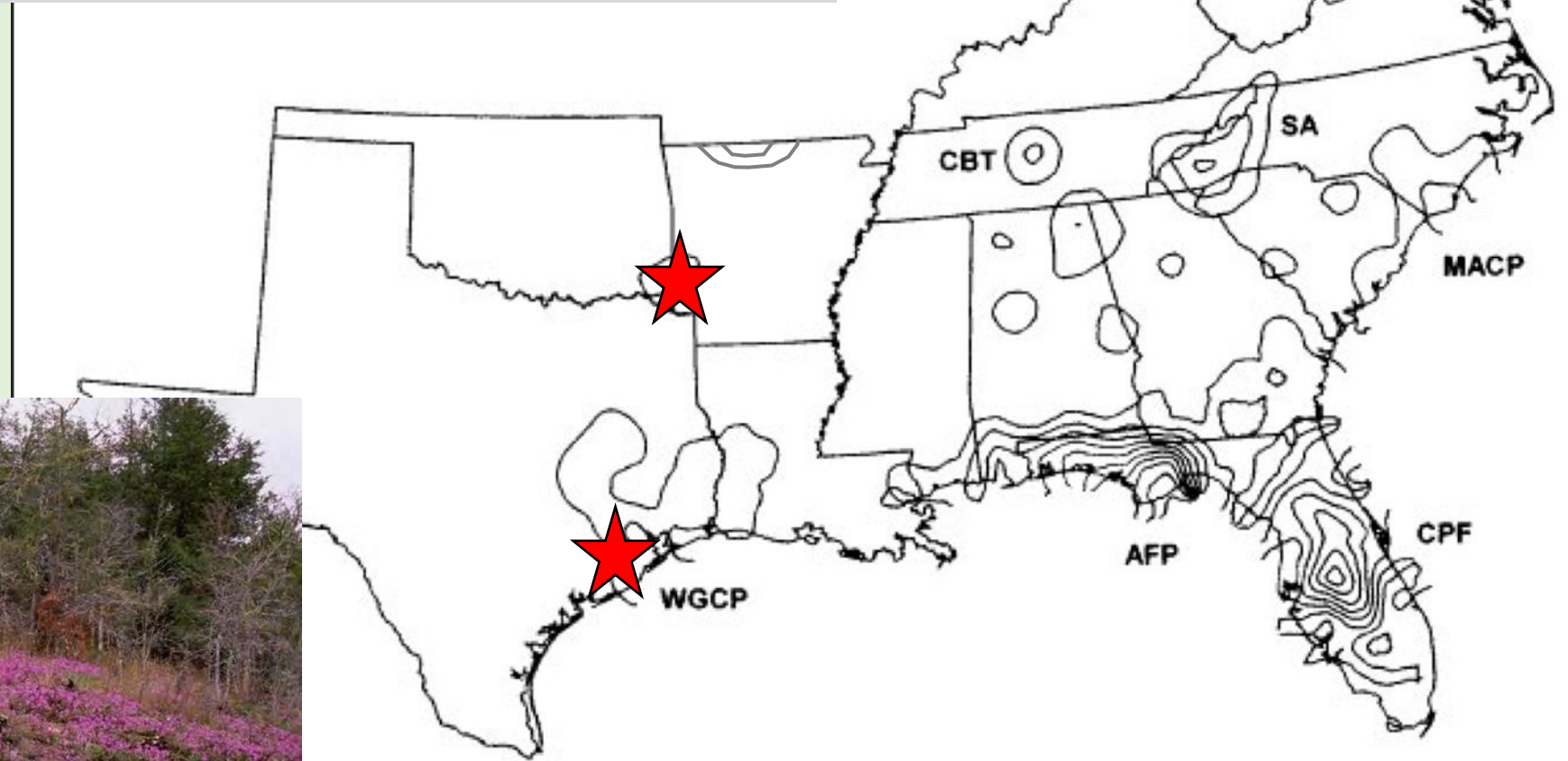
“What the modern Southern grasslands lack in size they make up for in biodiversity”



The contours of endemism shown above represent isoclines with an interval of 5 endemic species. The identified centers of endemism from left to right are the Western Gulf Coastal Plain (WGCP), the Cumberland Basin of Tennessee (CBT), the Appalachicola Region of the Florida Panhandle (AFP), the Appalachians (SA), Central Peninsular Florida (CPF), and the Mid-Atlantic Coastal Plain



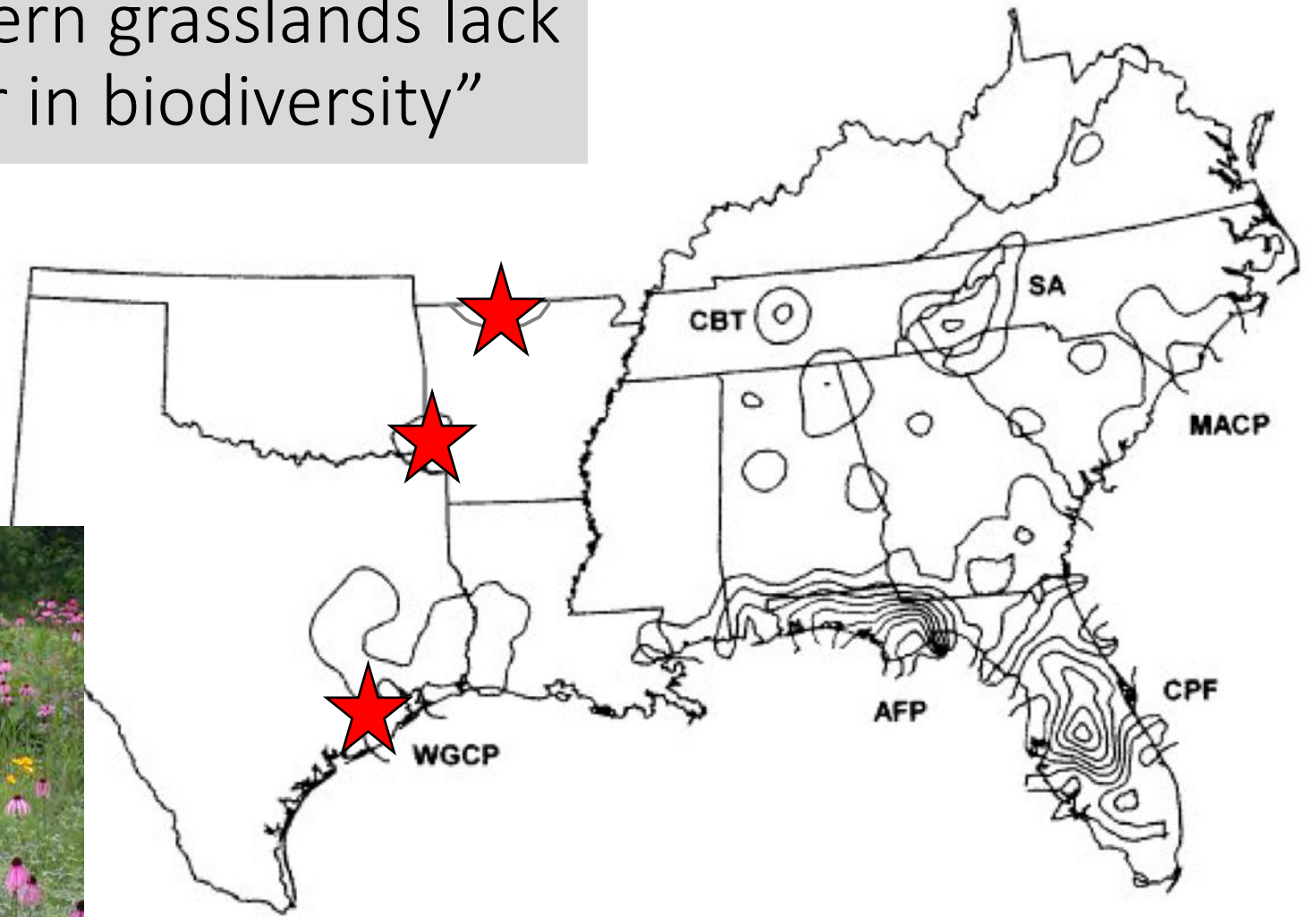
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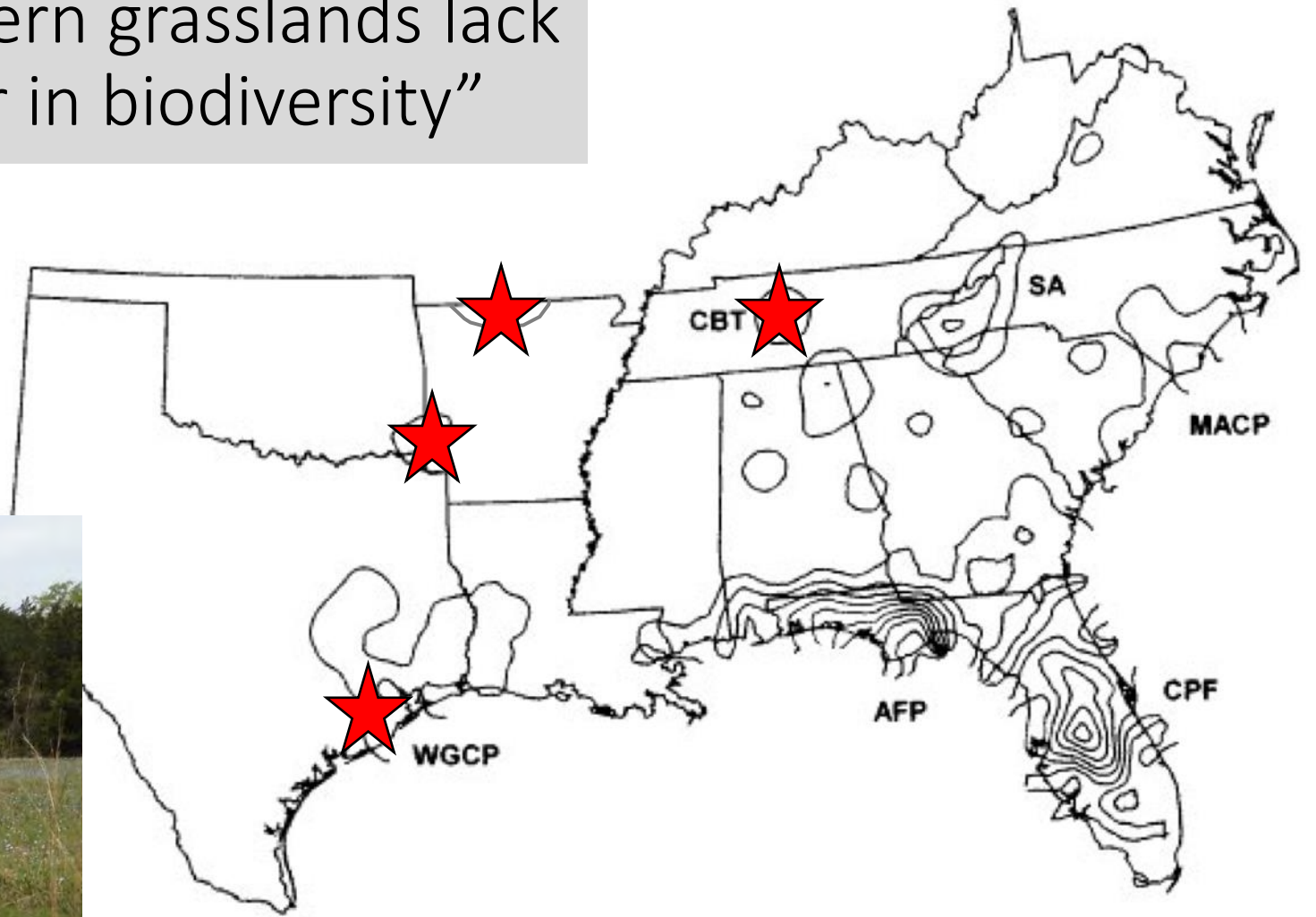
“What the modern Southern grasslands lack in size they make up for in biodiversity”



The contours of endemism shown above represent isoclines with an interval of 5 endemic species. The six identified centers of endemism from left to right are the Western Gulf Coastal Plain (WGCP), the Cumberland Plateau of Tennessee (CBT), the Appalachicola Region of the Florida Panhandle (AFP), the Appalachians (SA), Central Peninsular Florida (CPF), and the Mid-Atlantic Coastal Plain



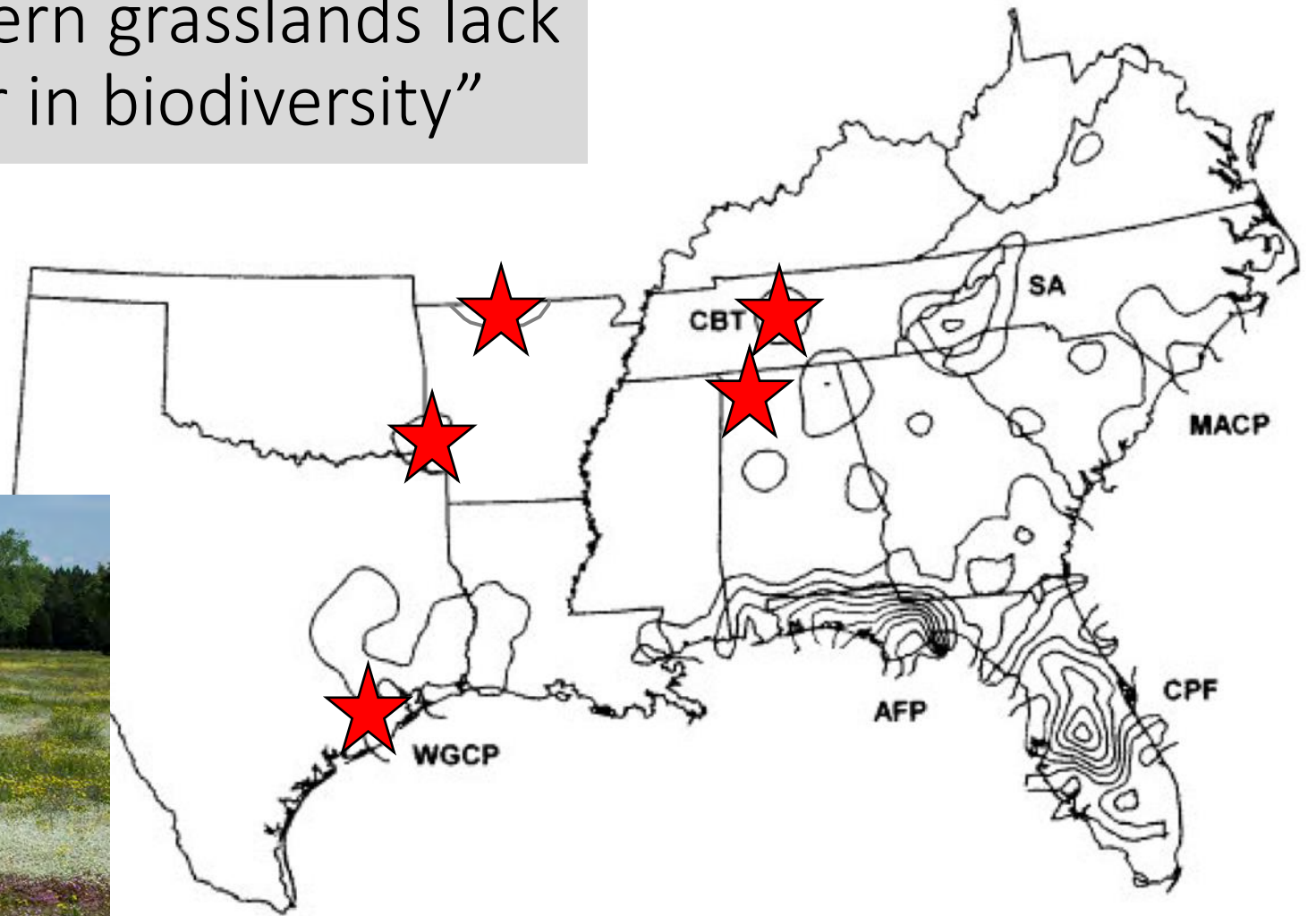
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“What the modern Southern grasslands lack in size they make up for in biodiversity”



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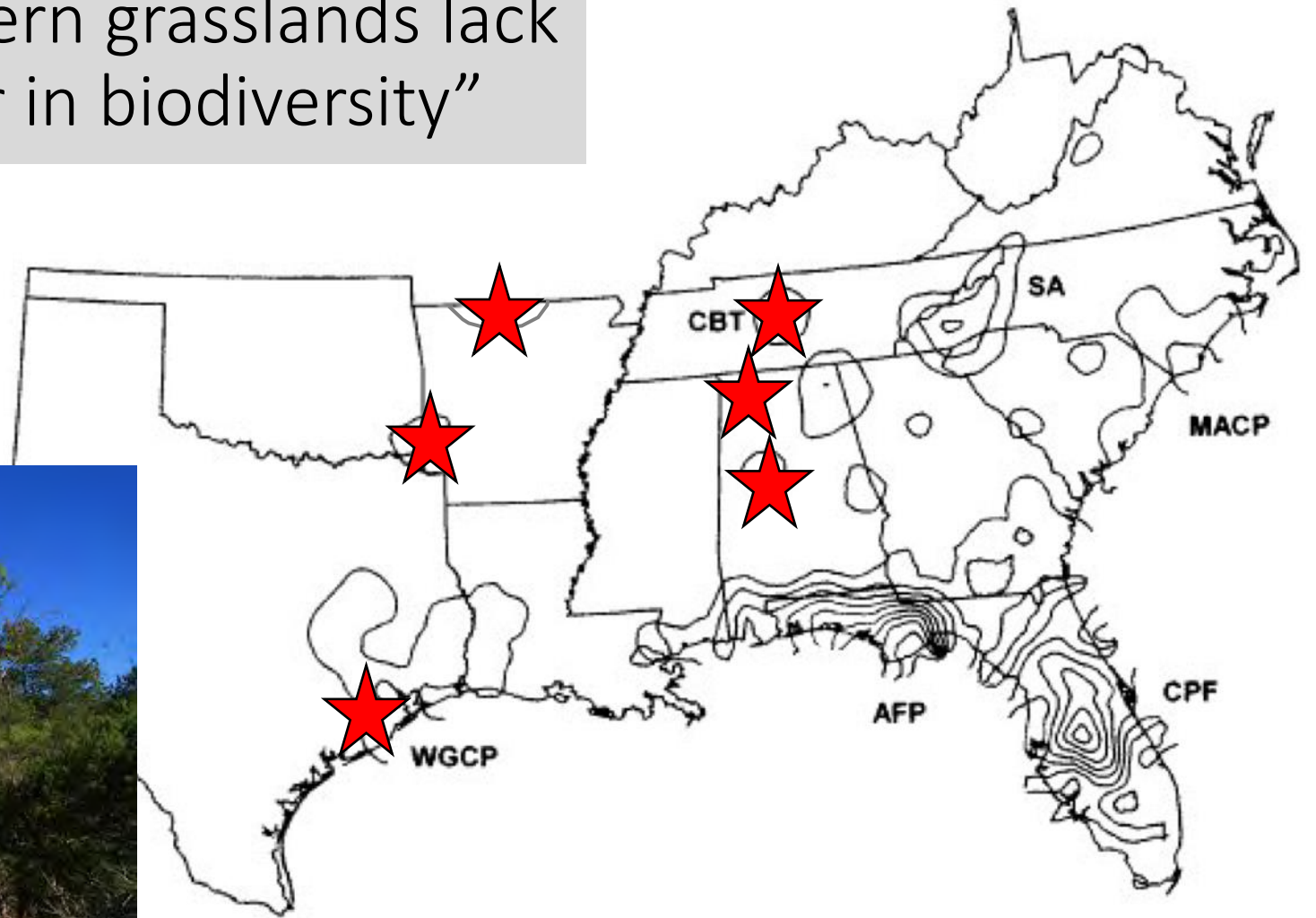
(WGCP).



“What the modern Southern grasslands lack in size they make up for in biodiversity”



(MACP).



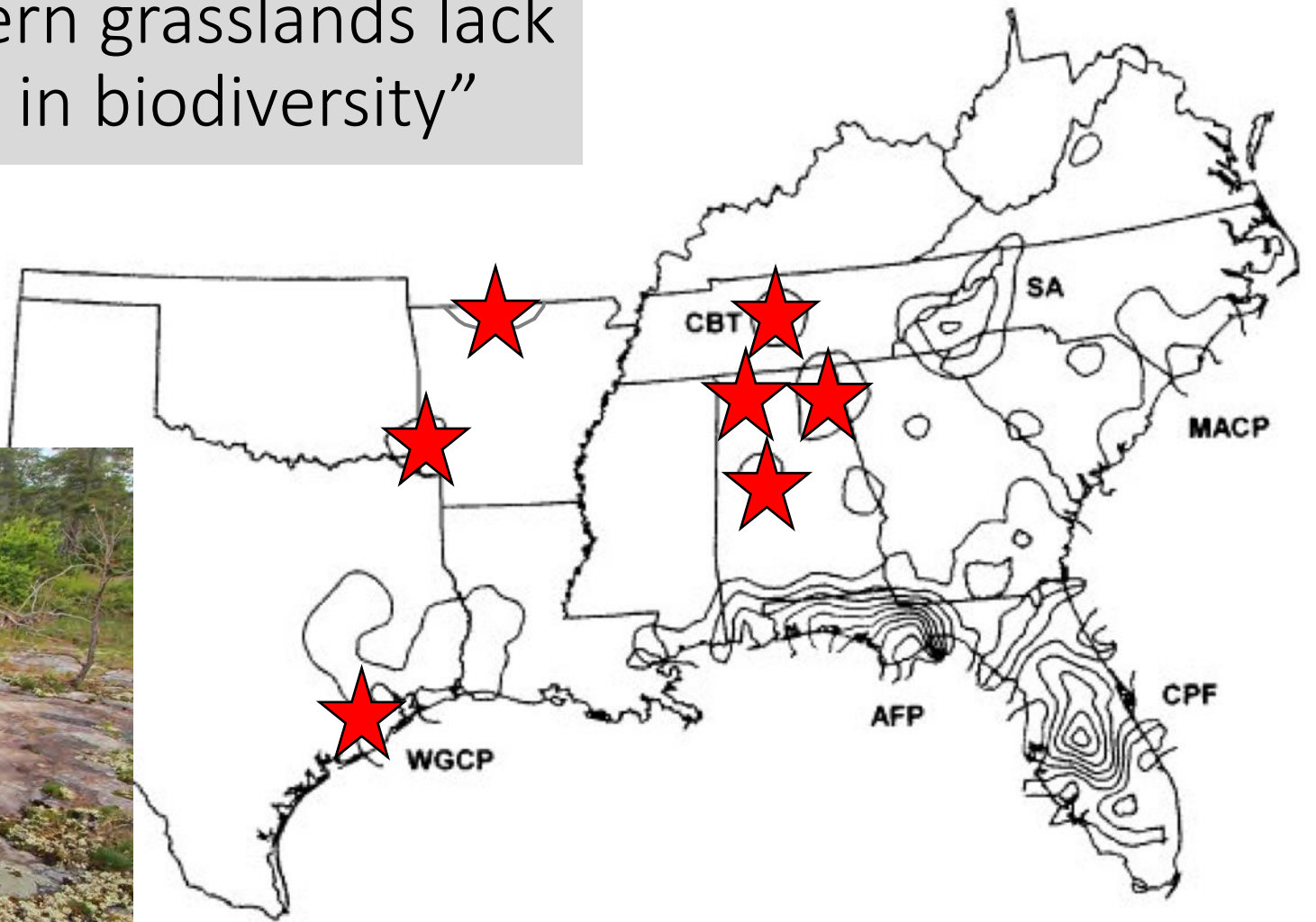
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“What the modern Southern grasslands lack in size they make up for in biodiversity”



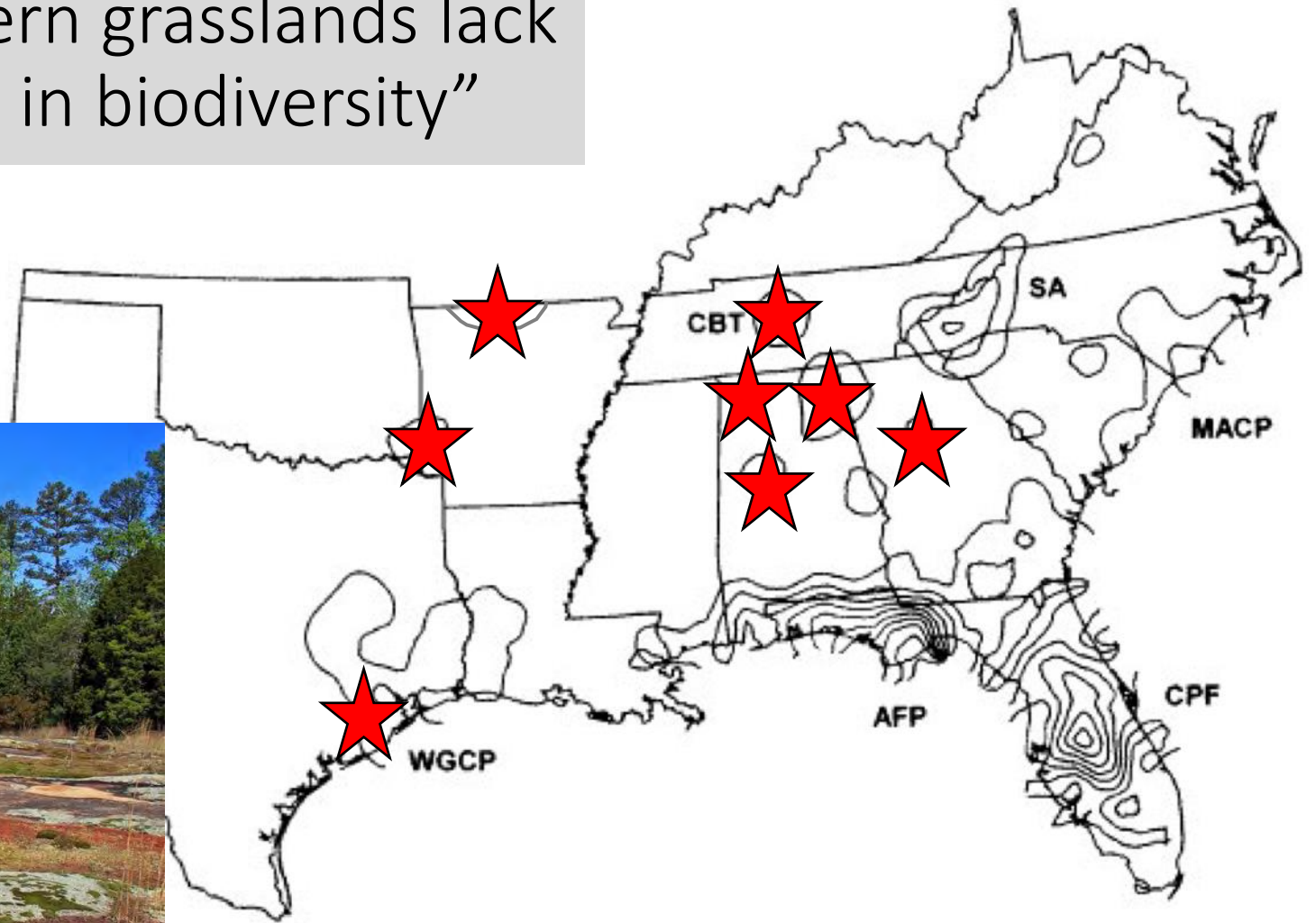
(MACP).



contours of endemism shown above represent isoclines with an interval of 5 endemic  
centers of endemism from left to right are the Western Gulf Coastal Plain (WGCP),  
Tennessee (CBT), the Apalachicola Region of the Florida Panhandle (AFP), the  
ns (SA), Central Peninsular Florida (CPF), and the Mid-Atlantic Coastal Plain



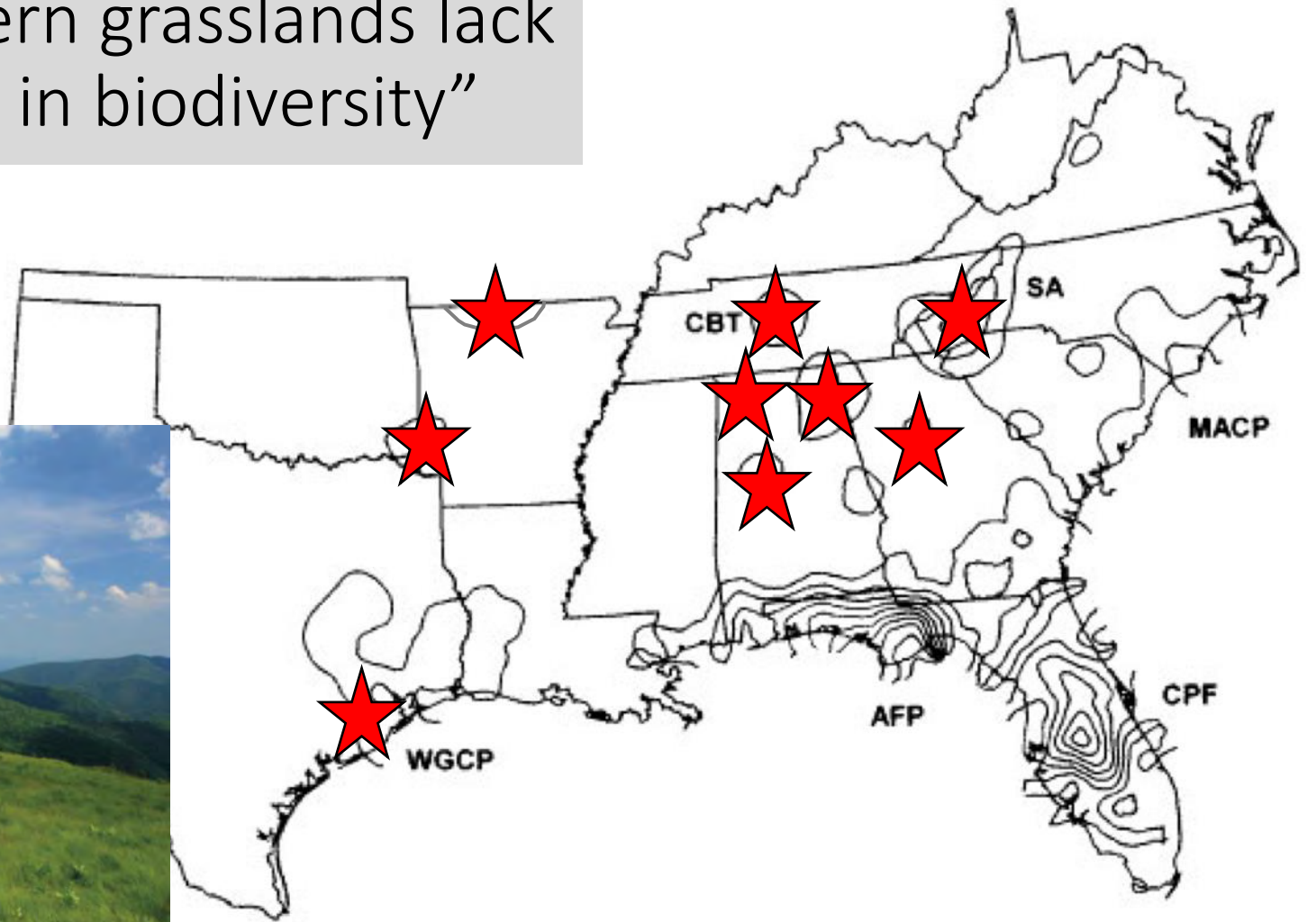
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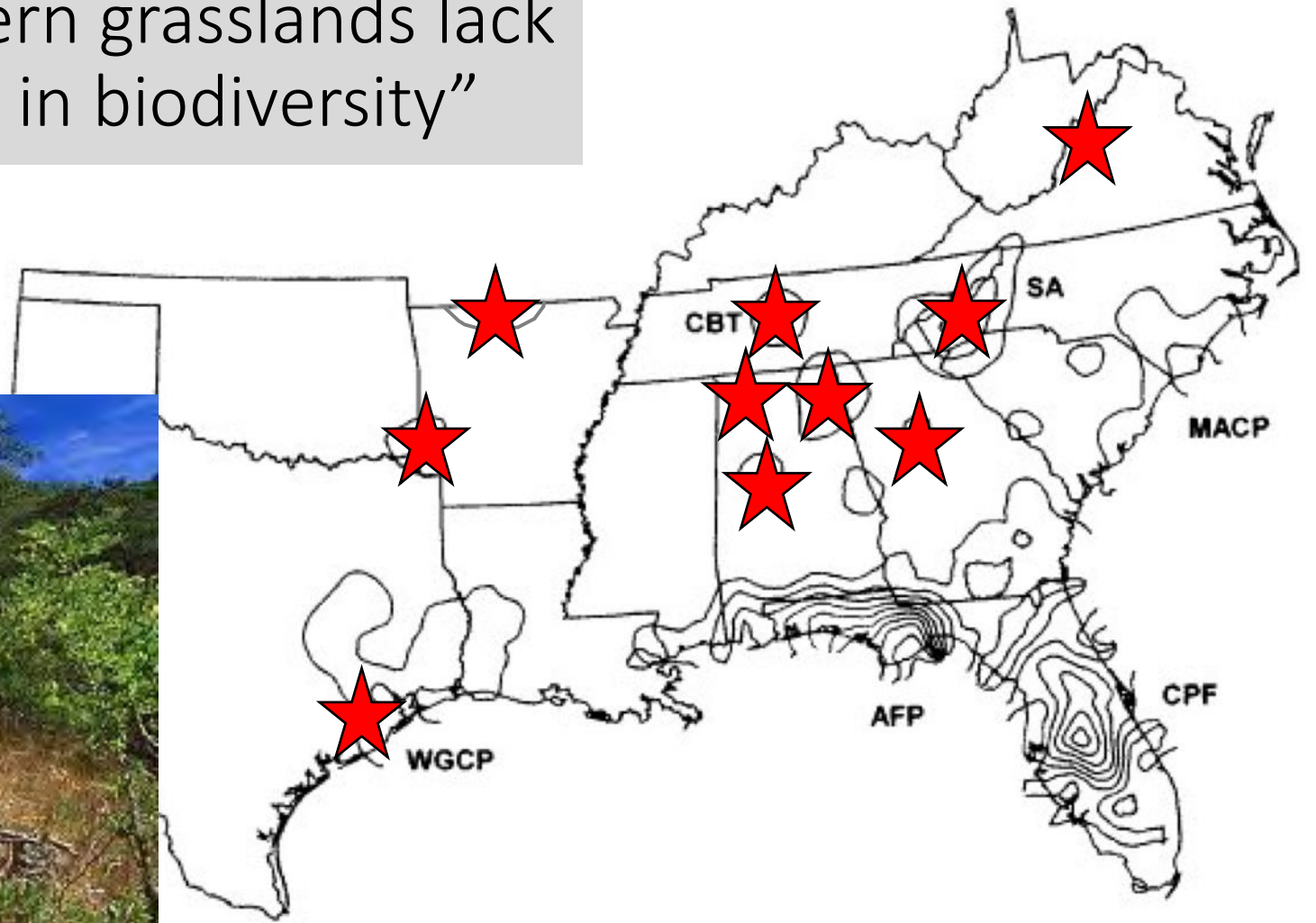
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“What the modern Southern grasslands lack in size they make up for in biodiversity”



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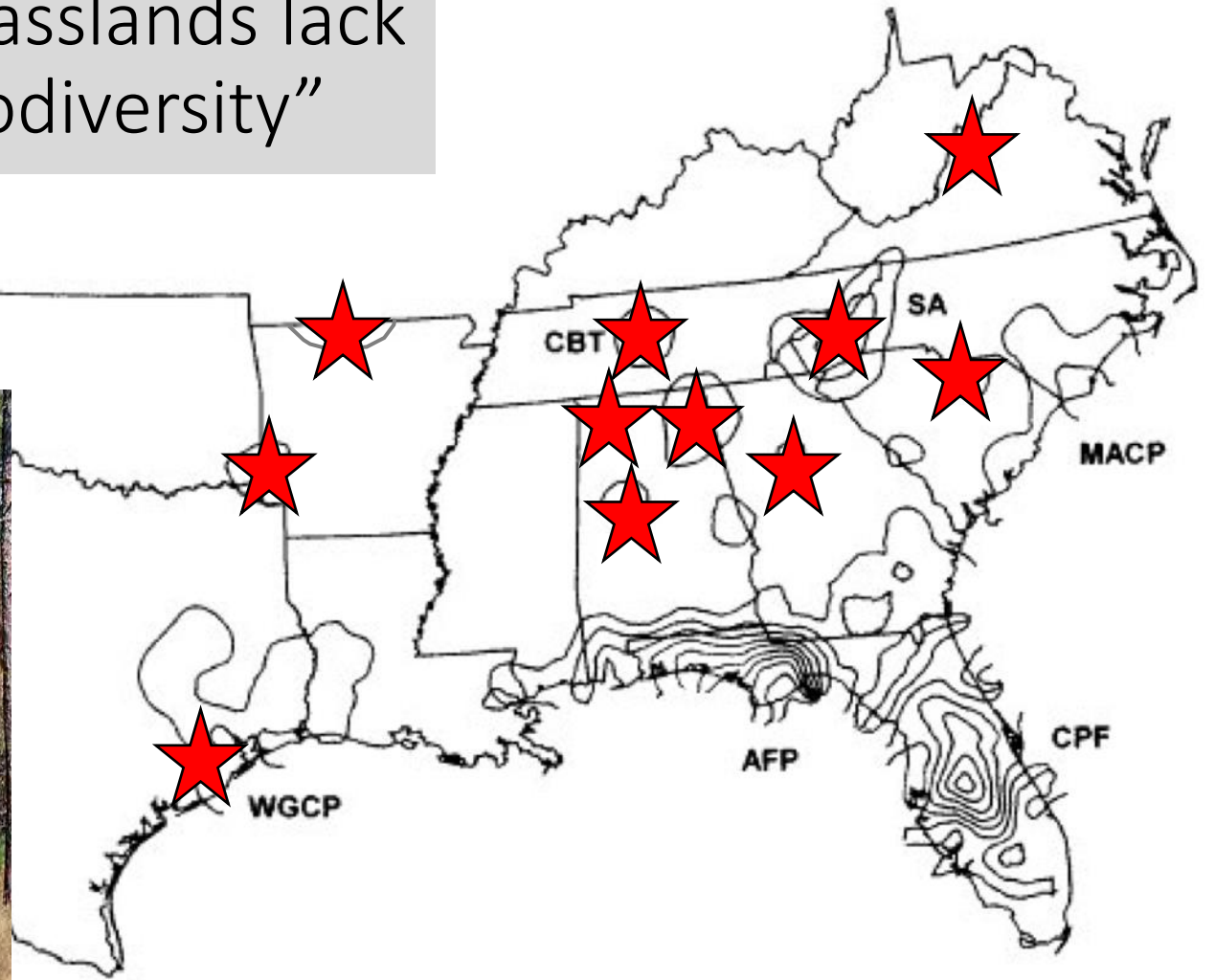


“What the modern Southern grasslands lack in size they make up for in biodiversity”



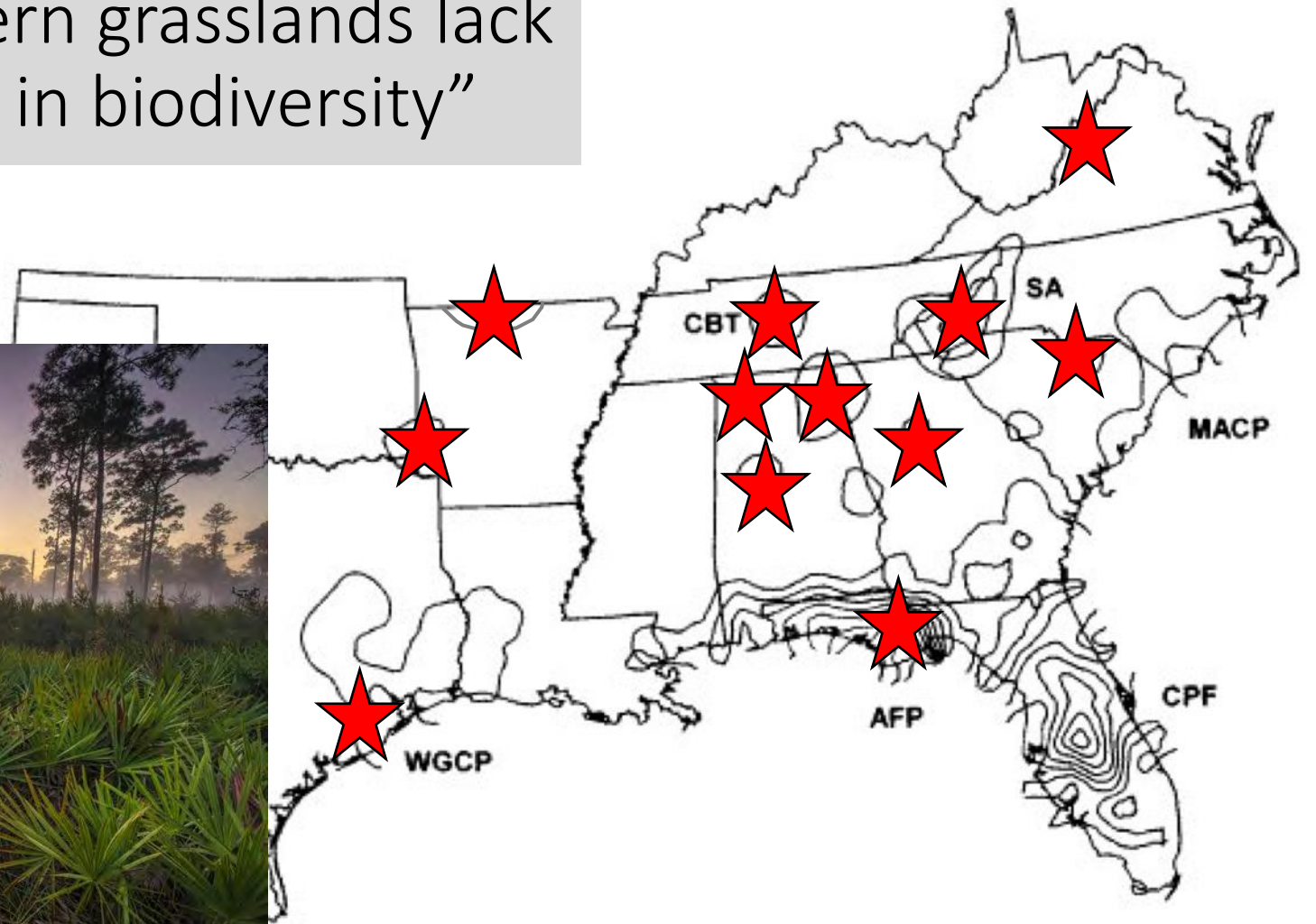
©2006 Jeffrey Phippen

Isoclines of endemism shown above represent isoclines with an interval of 5 endemic species. The centers of endemism from left to right are the Western Gulf Coastal Plain (WGCP), the Central Basin of Tennessee (CBT), the Appalachicola Region of the Florida Panhandle (AFP), the Southern Appalachians (SA), Central Peninsular Florida (CPF), and the Mid-Atlantic Coastal Plain (MACP).





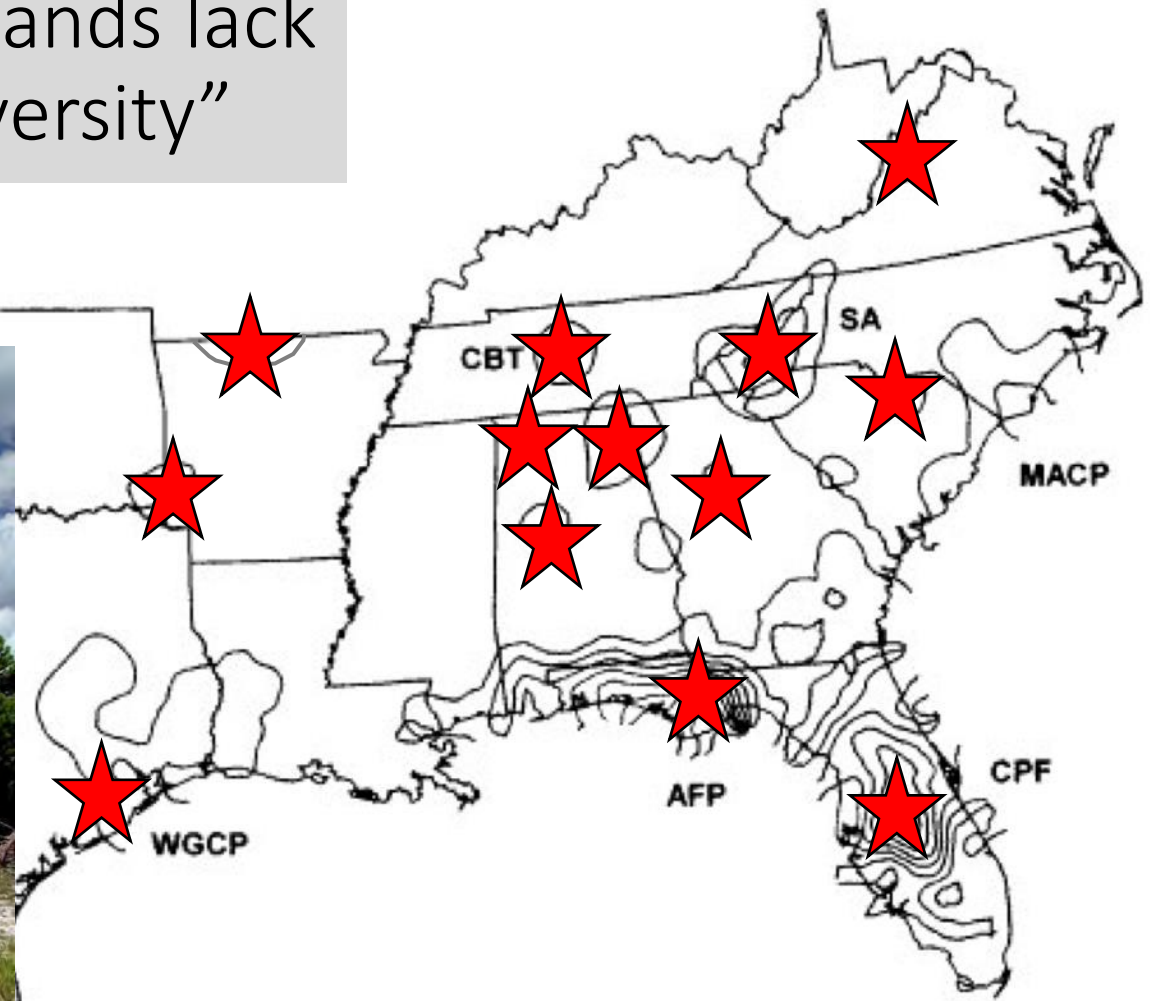
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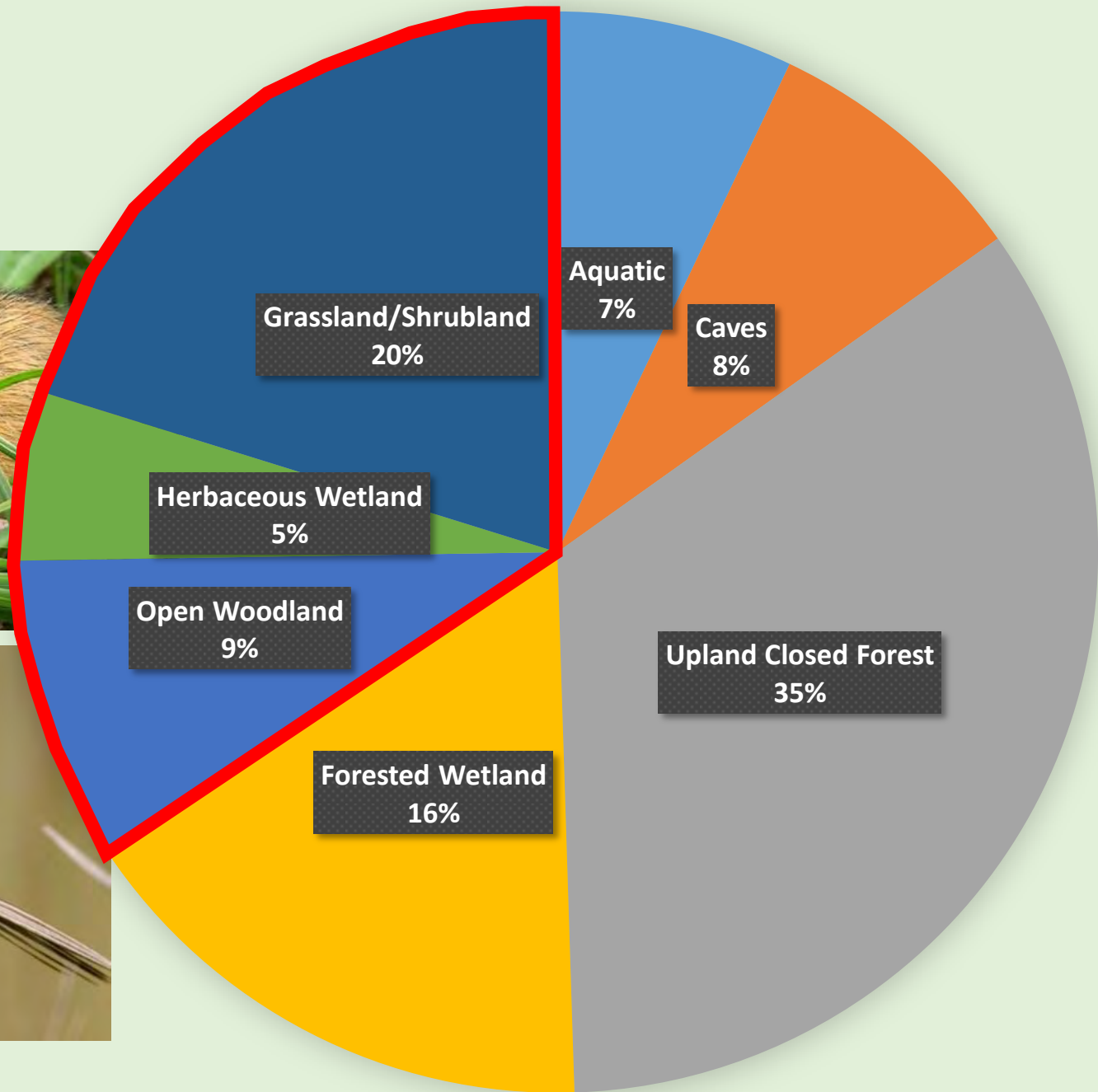
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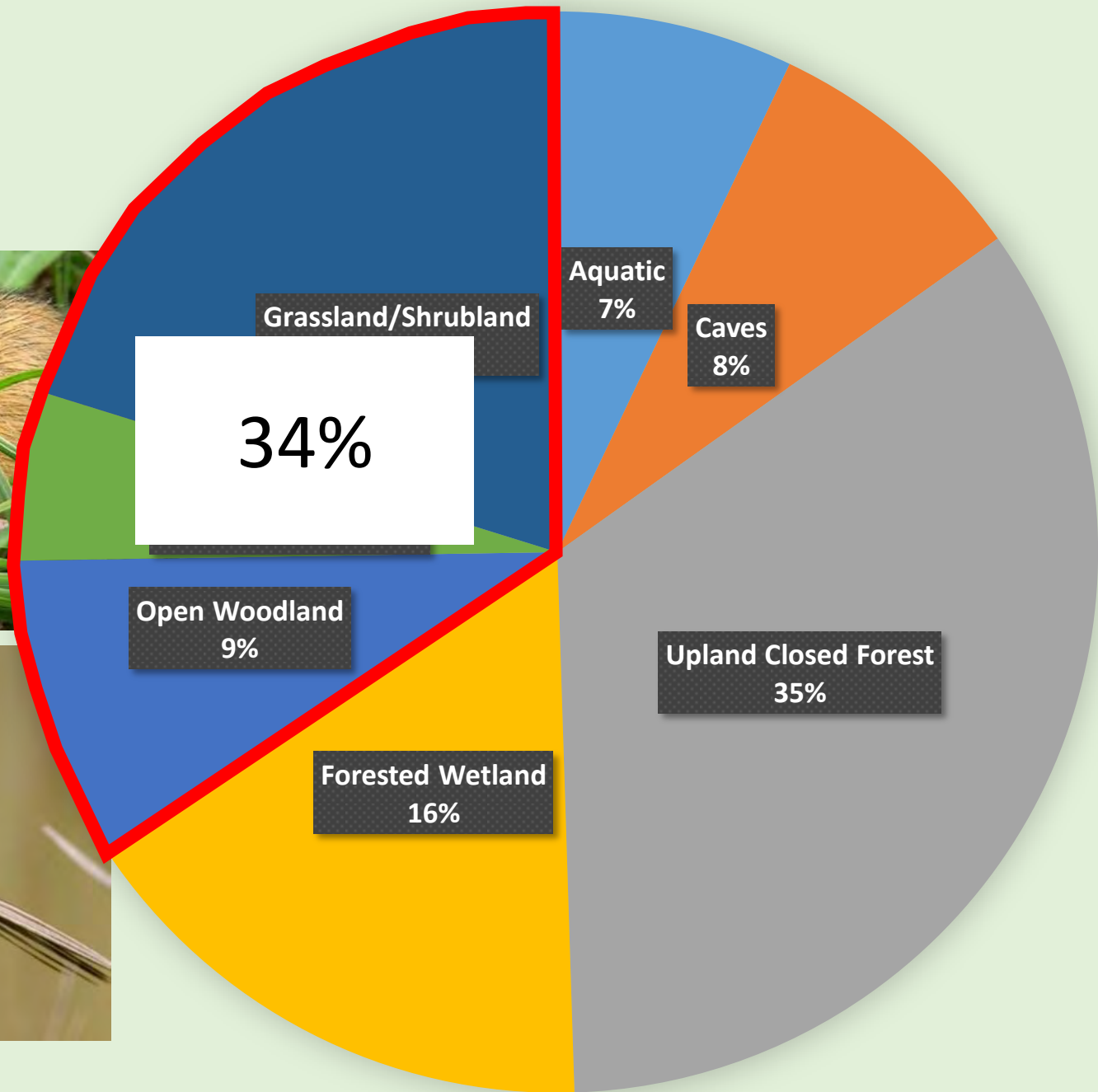


# Animal Biodiversity





# Animal Biodiversity

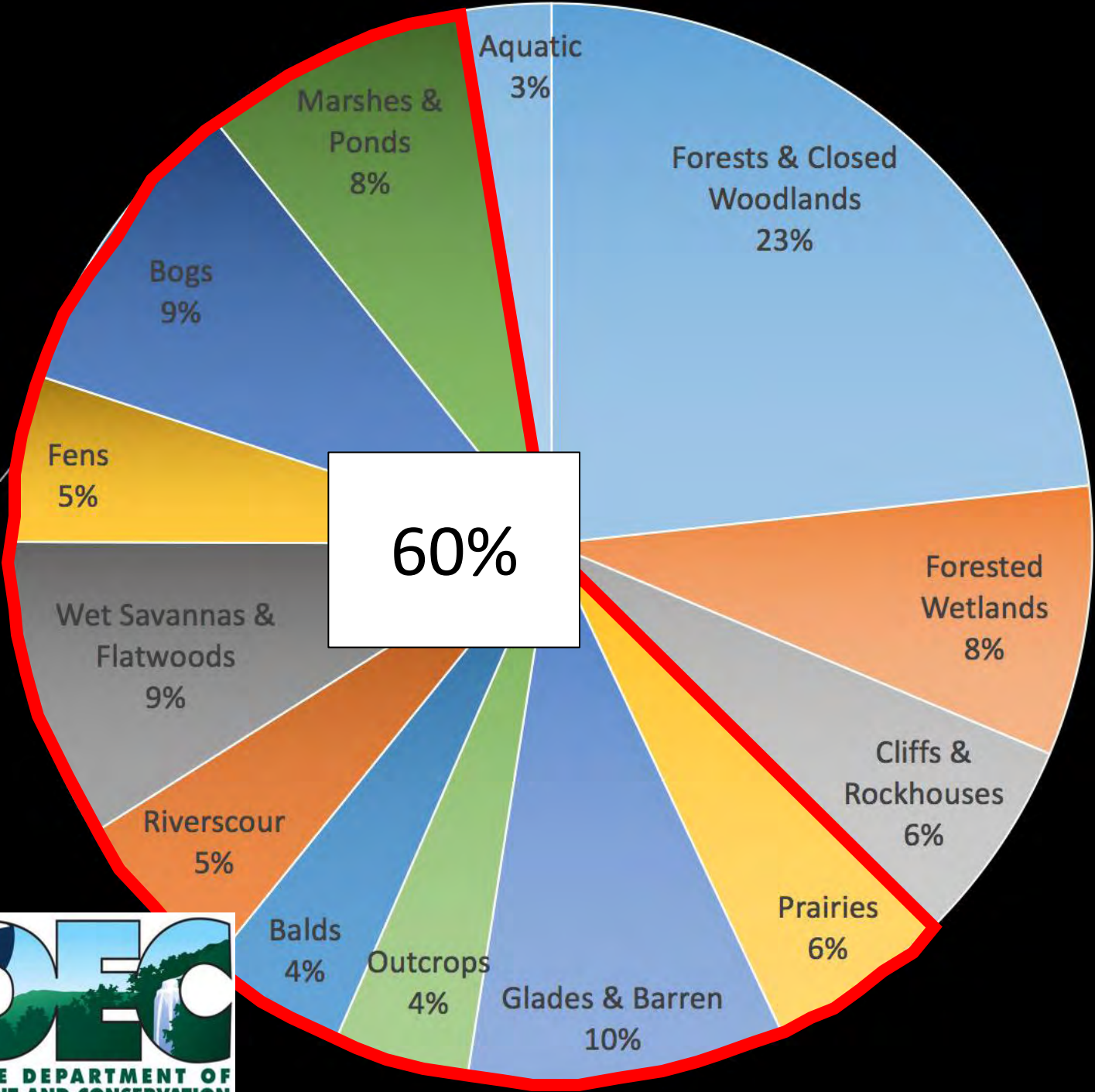
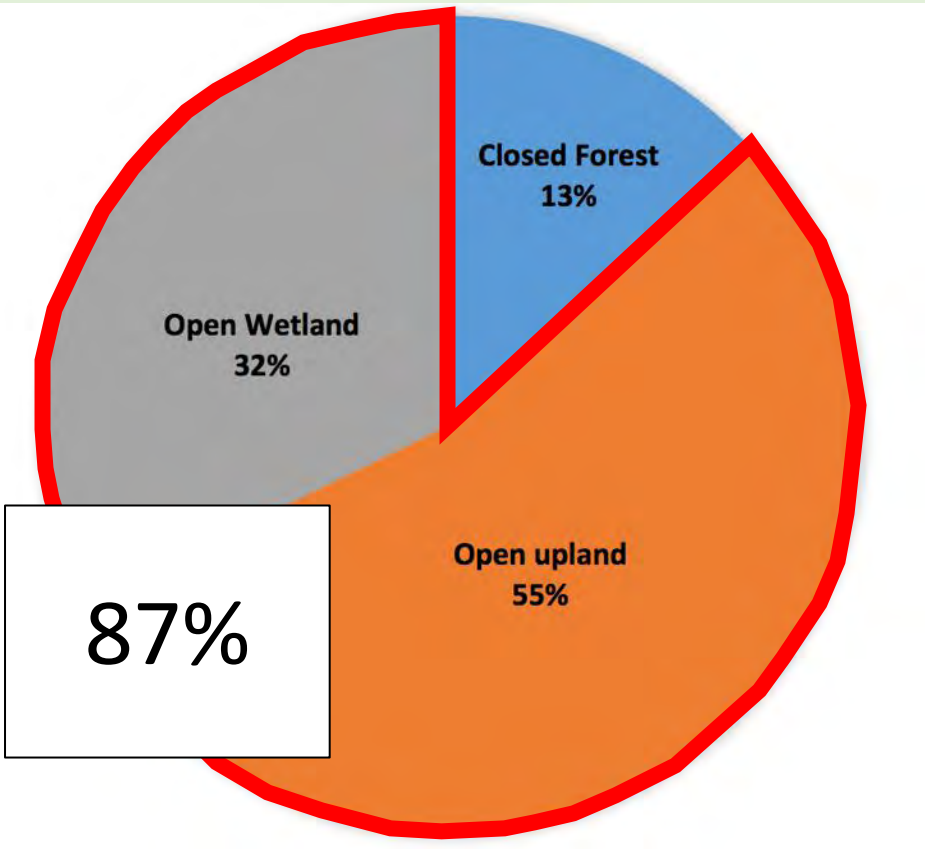






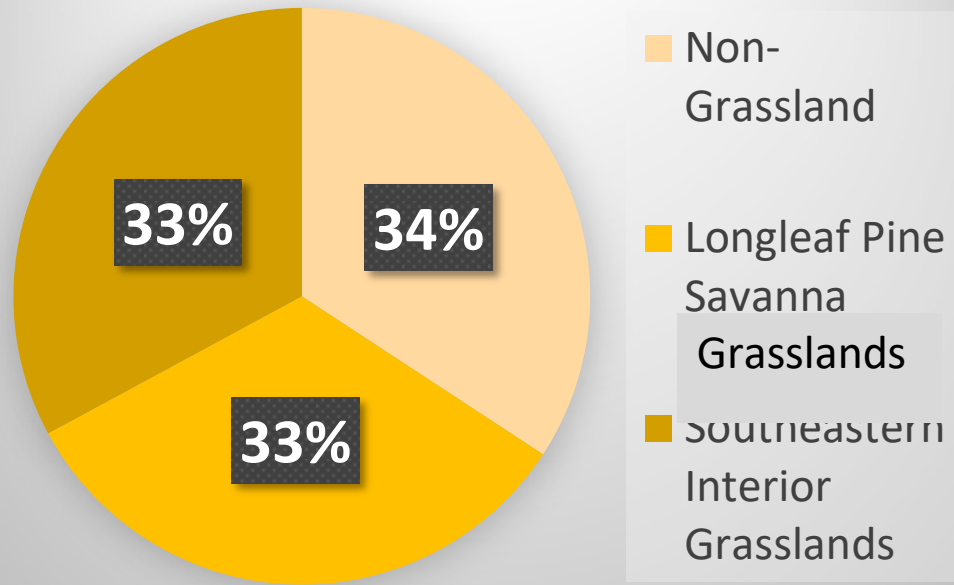


# Plant Biodiversity

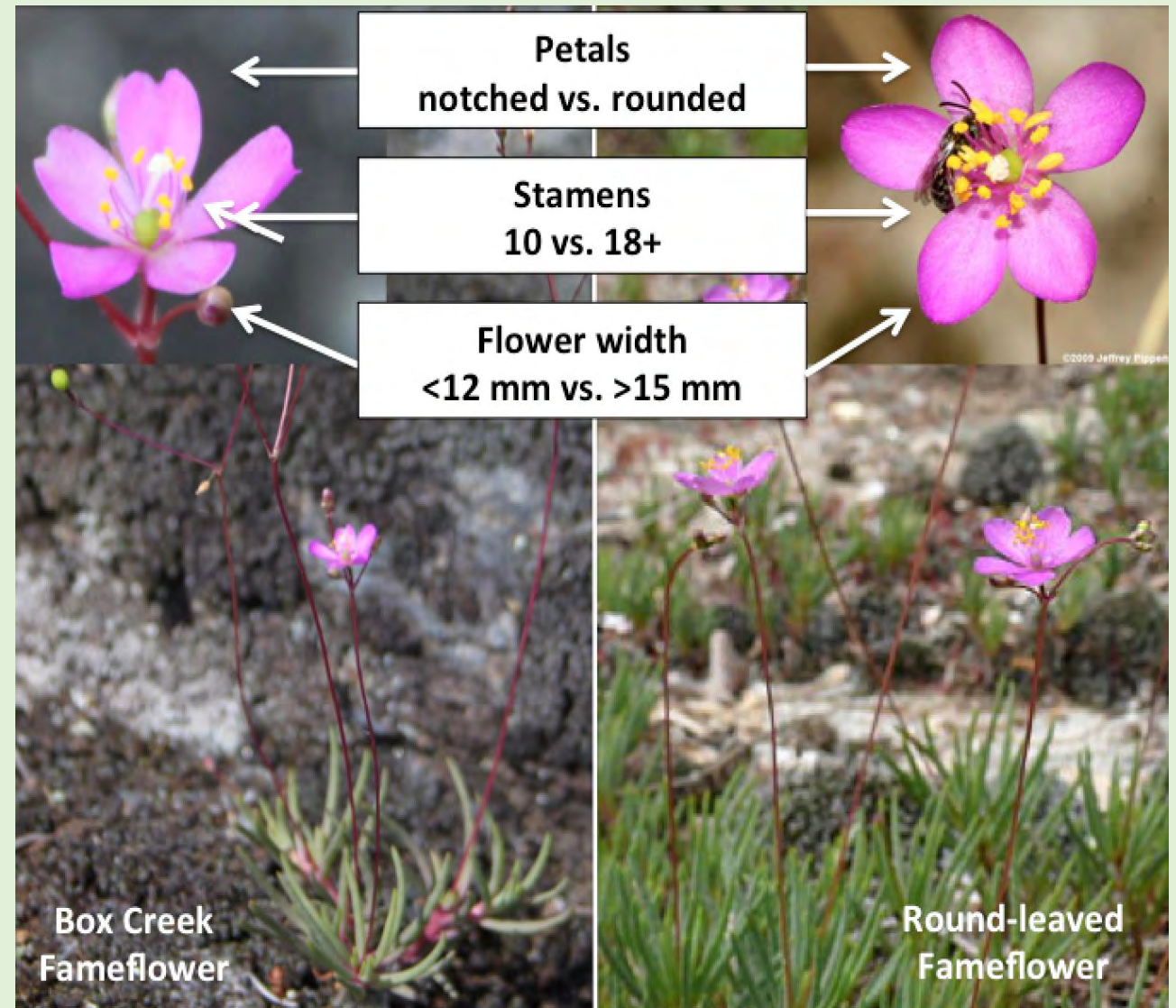




## New Species Described Since 1960

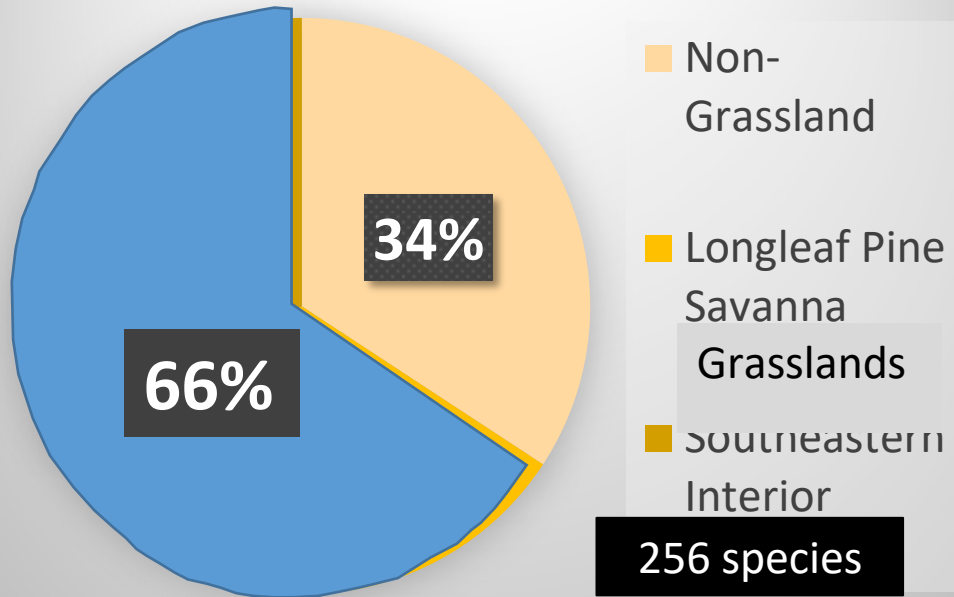


# Hotspots for New Species

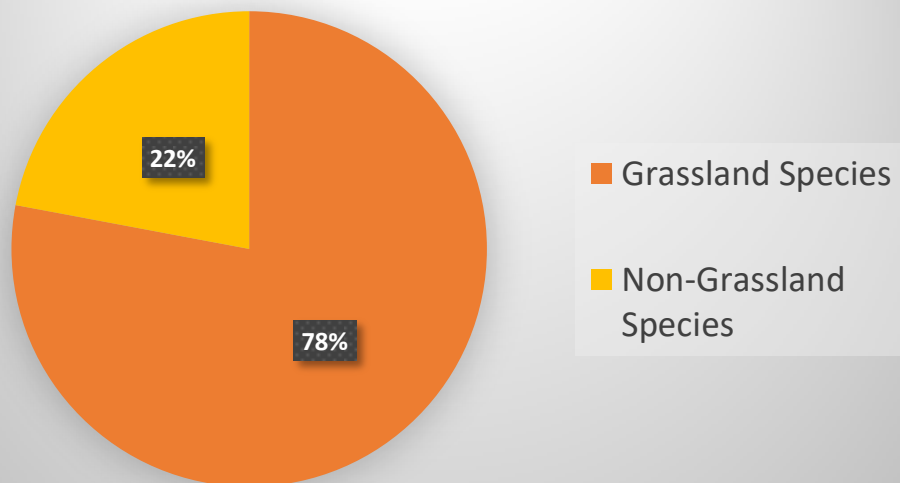




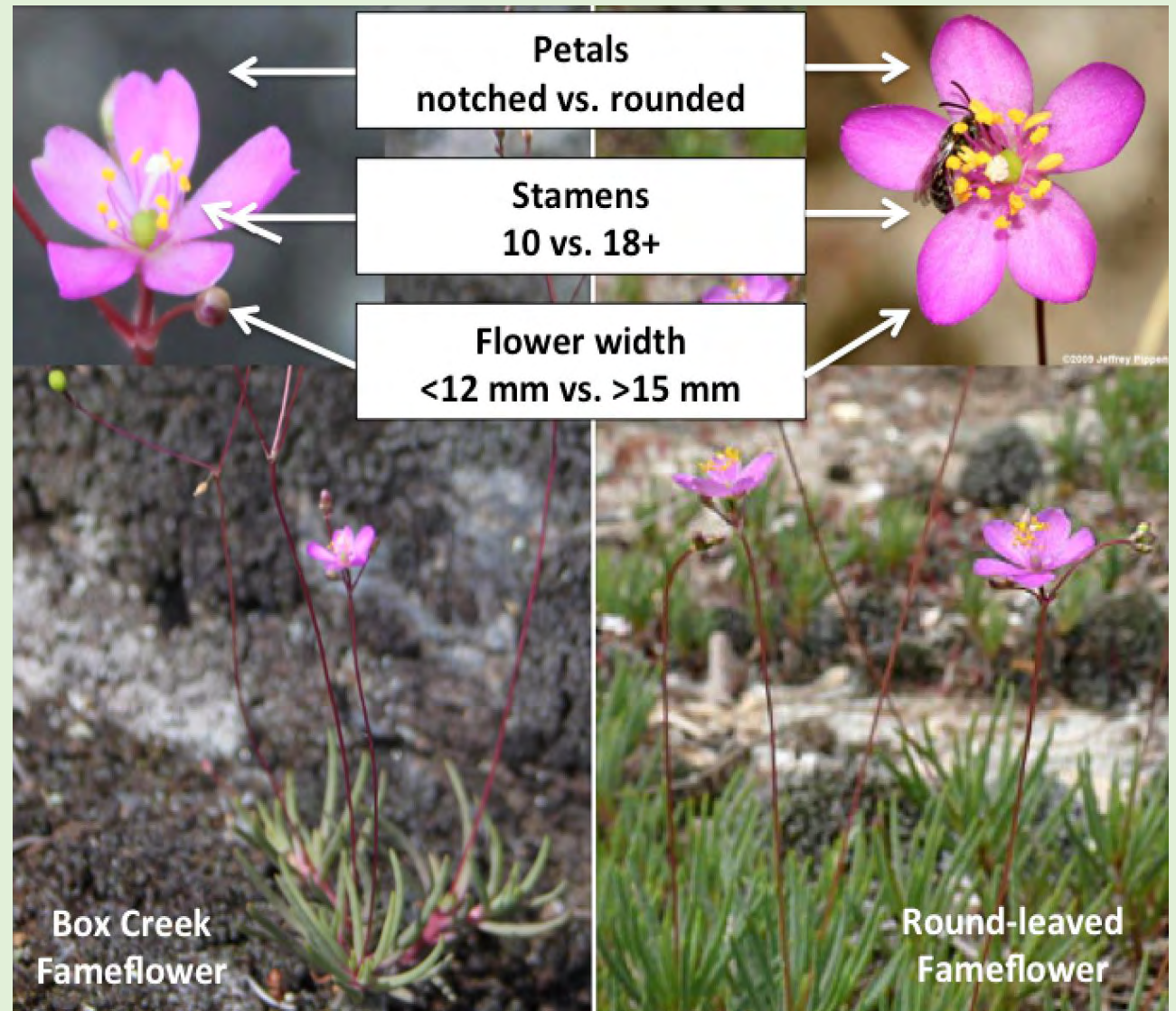
## New Species Described Since 1960



## New Species Being Described

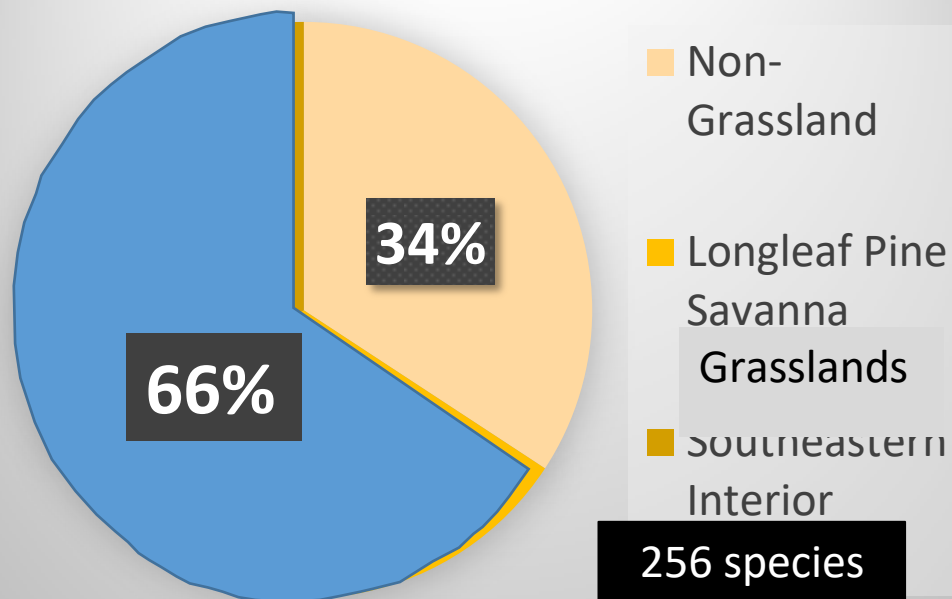


# Hotspots for New Species

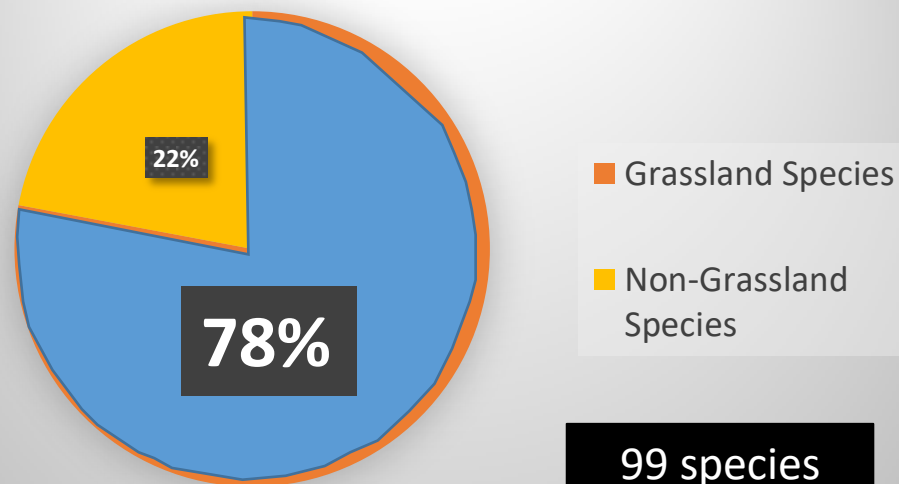




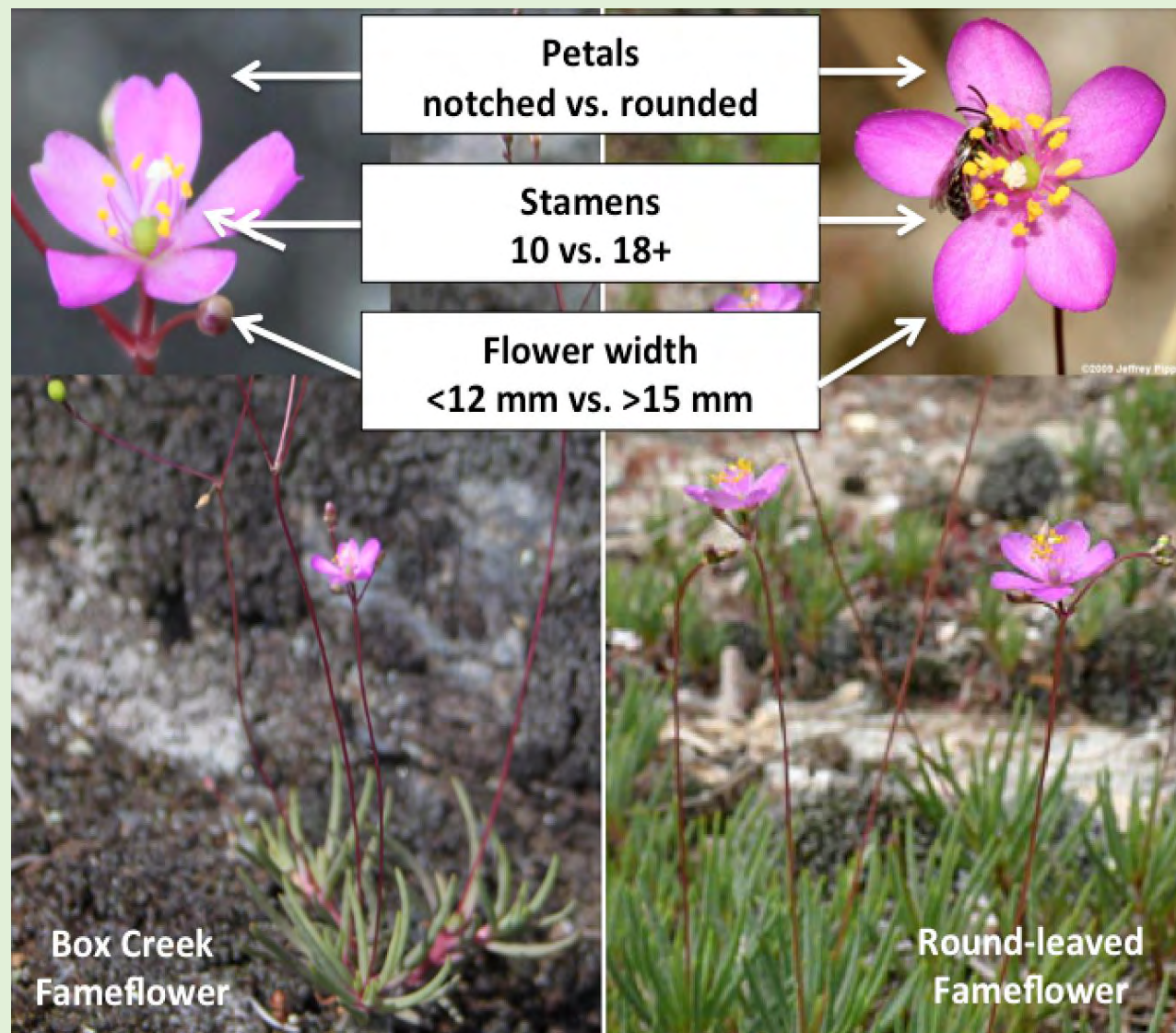
## New Species Described Since 1960



## New Species Being Described

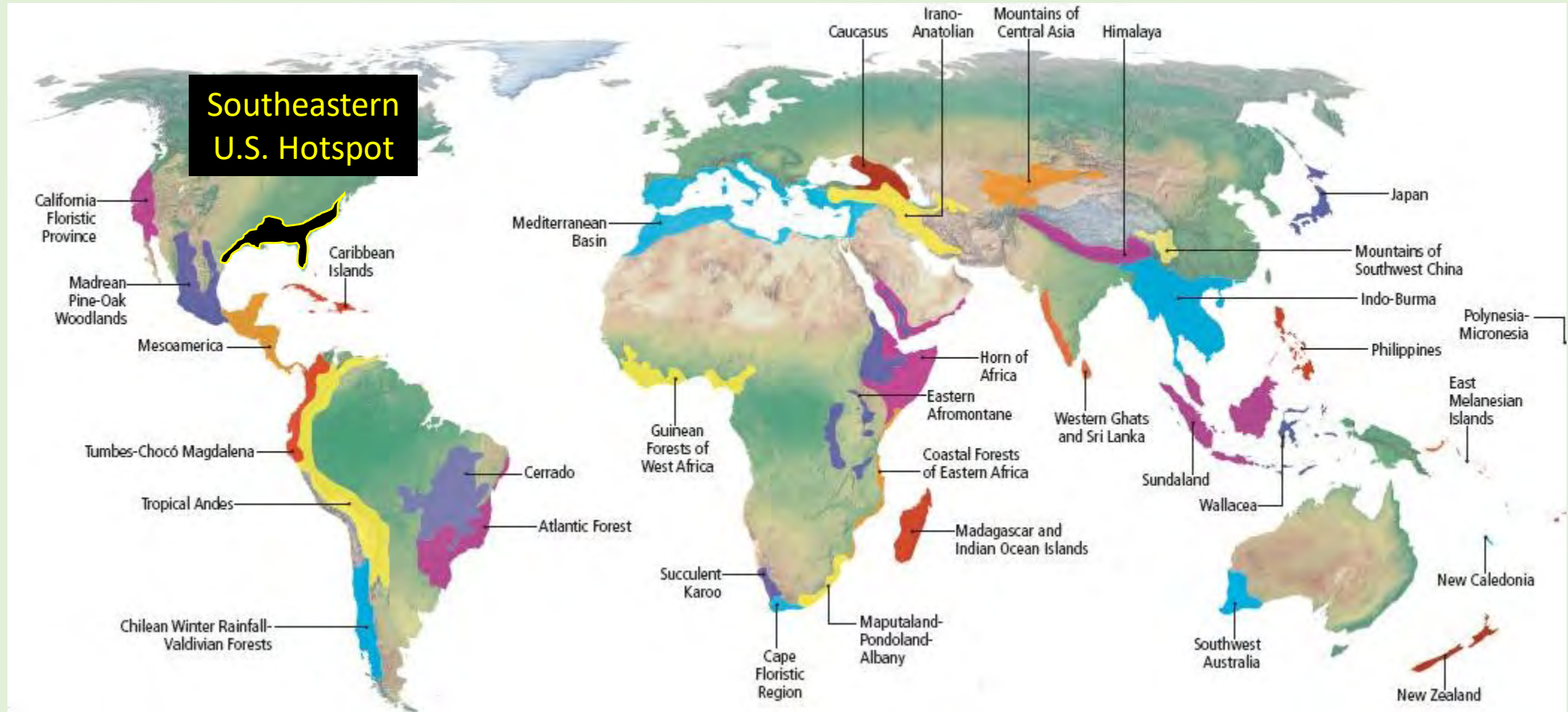


# Hotspots for New Species



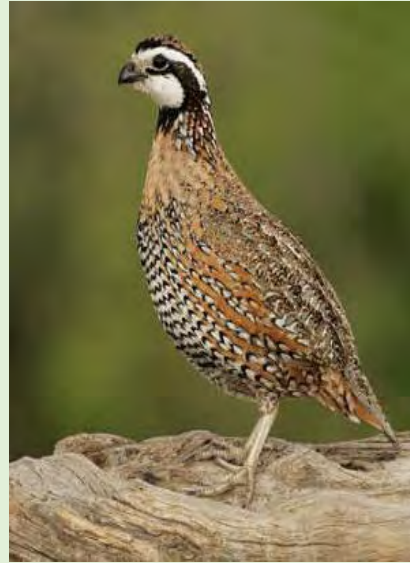


# Global Biodiversity Hotspots





# Ecological Collapse





# Renewed Interest in Grassland Conservation





# Renewed Interest in Grassland Conservation

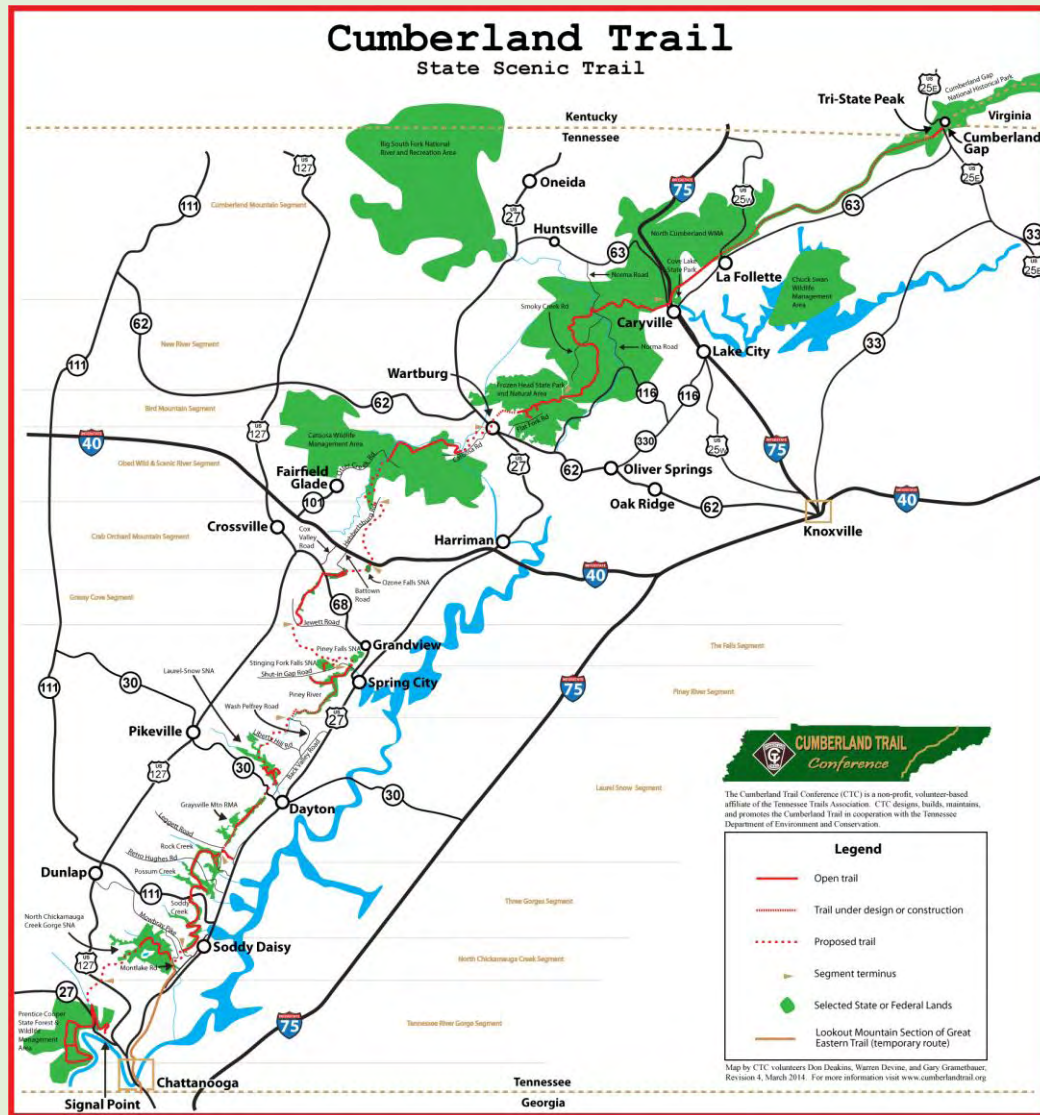








# Are our existing preserves doing an effective job of capturing biodiversity?





## Legend

### Acidic Plateau Surface Wetlands

● Last obs >20 years

● Last obs <20 years

Public Lands - Cumberland Plateau

Cumberland Plateau and Escarpment

Public Lands



Is what we're  
doing really  
working?

**64%** of 231 element  
occurrence records for  
40 rare species are  
unprotected

Map Credit: Sunny Fleming  
Tennessee Division of Natural Areas















Are we prepared to accept the permanent loss of  
Southern grasslands?



**Until there is a coordinated effort to conserve,  
research, and rebuild them they will continue to slip  
into oblivion**



Can our grasslands survive into the 22<sup>nd</sup> century in the face of climate change and habitat loss?





## Part 2

# Time for a Paradigm Shift





**Dreaming Big:** Letting science, conservation, and passion drive the VISION



*Our mission is to understand, preserve, restore, and promote the grassland ecosystems of the southeastern U.S. through research, consultation and coordination of on-the-ground conservation, administration of grants, and education & outreach.*

## ***SGI Objectives***

- **Research**
- **Education**
- **Consultation**





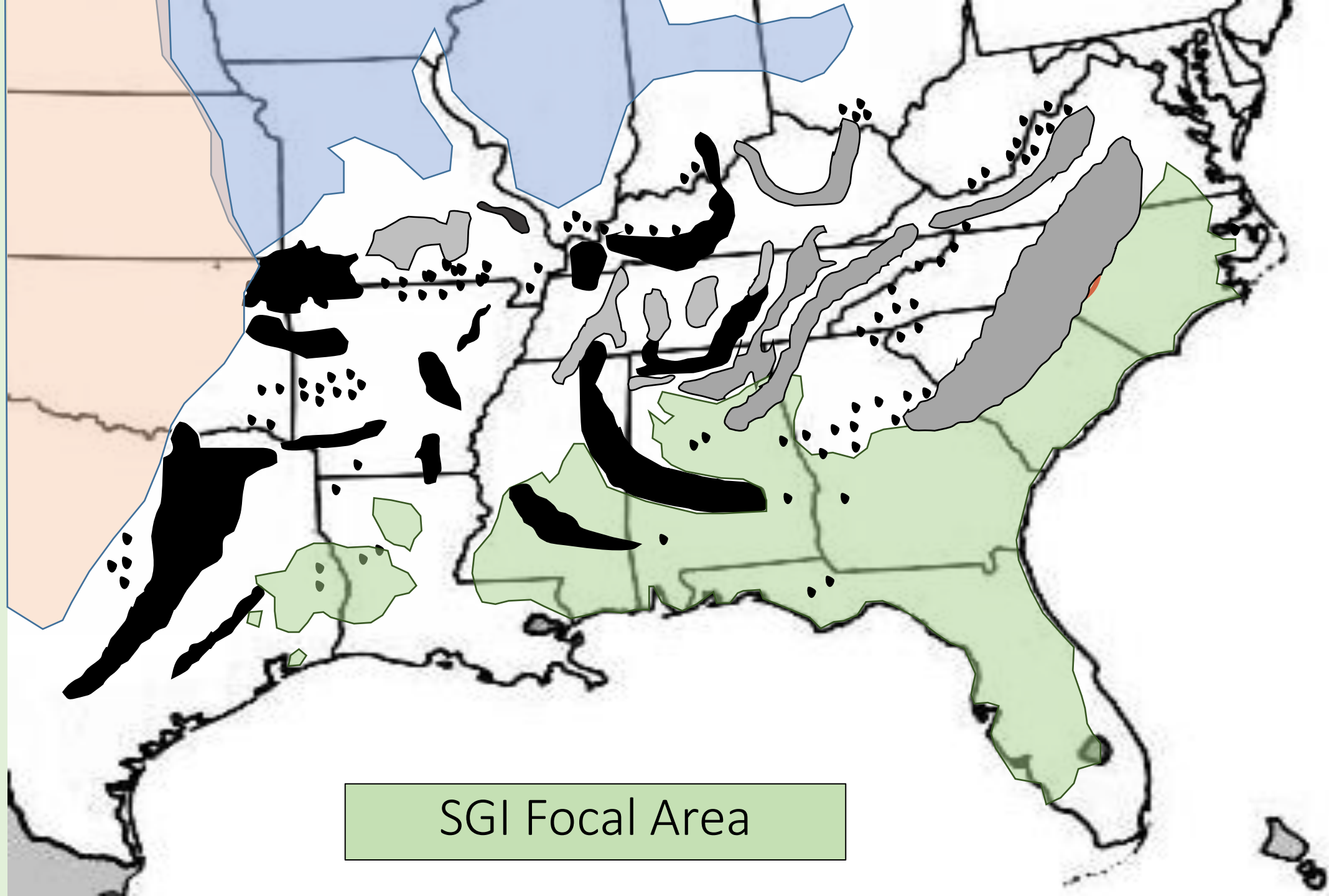
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## ***SGI Objectives***

- **Research**
- **Education**
- **Consultation**
- **Granting Program**

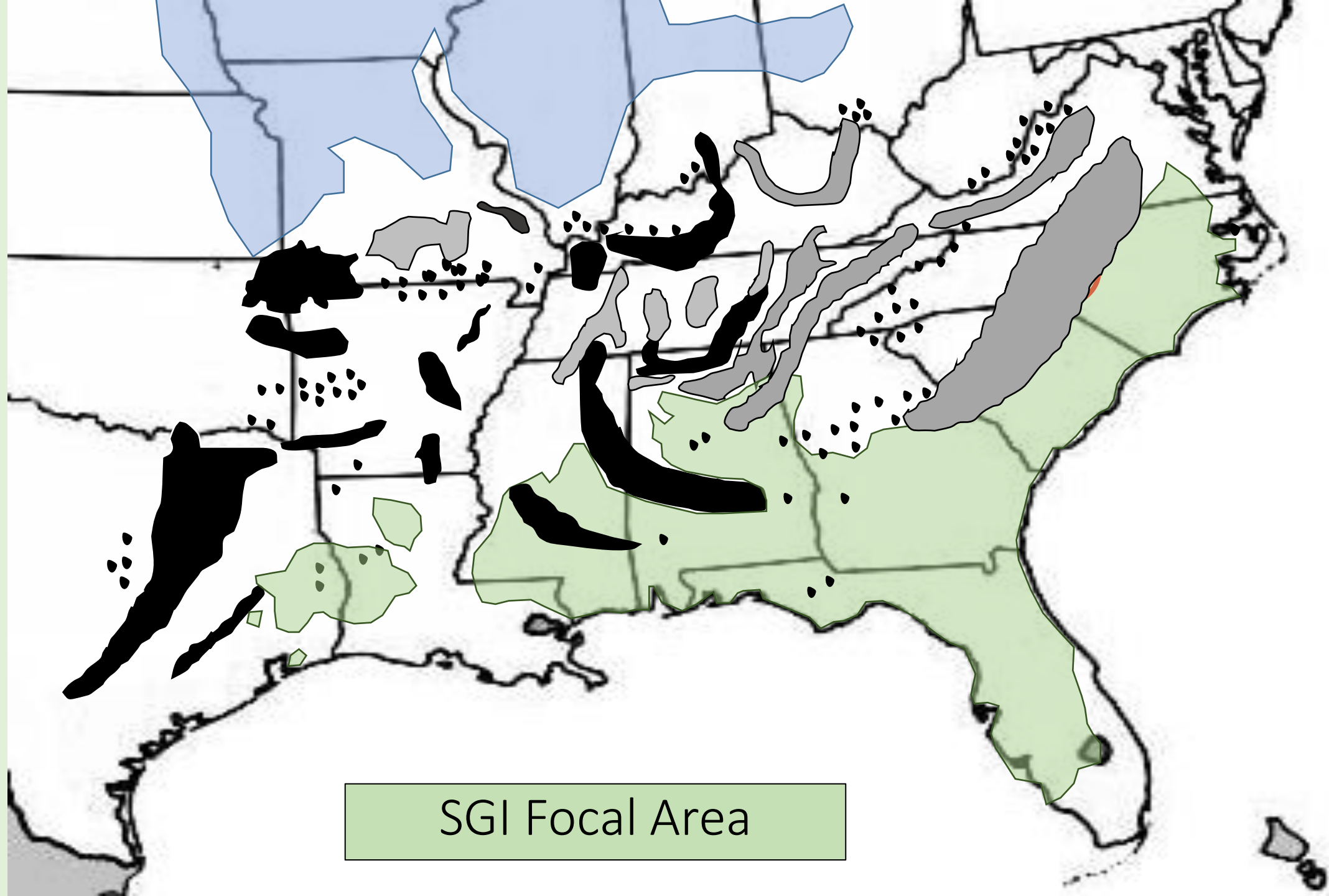






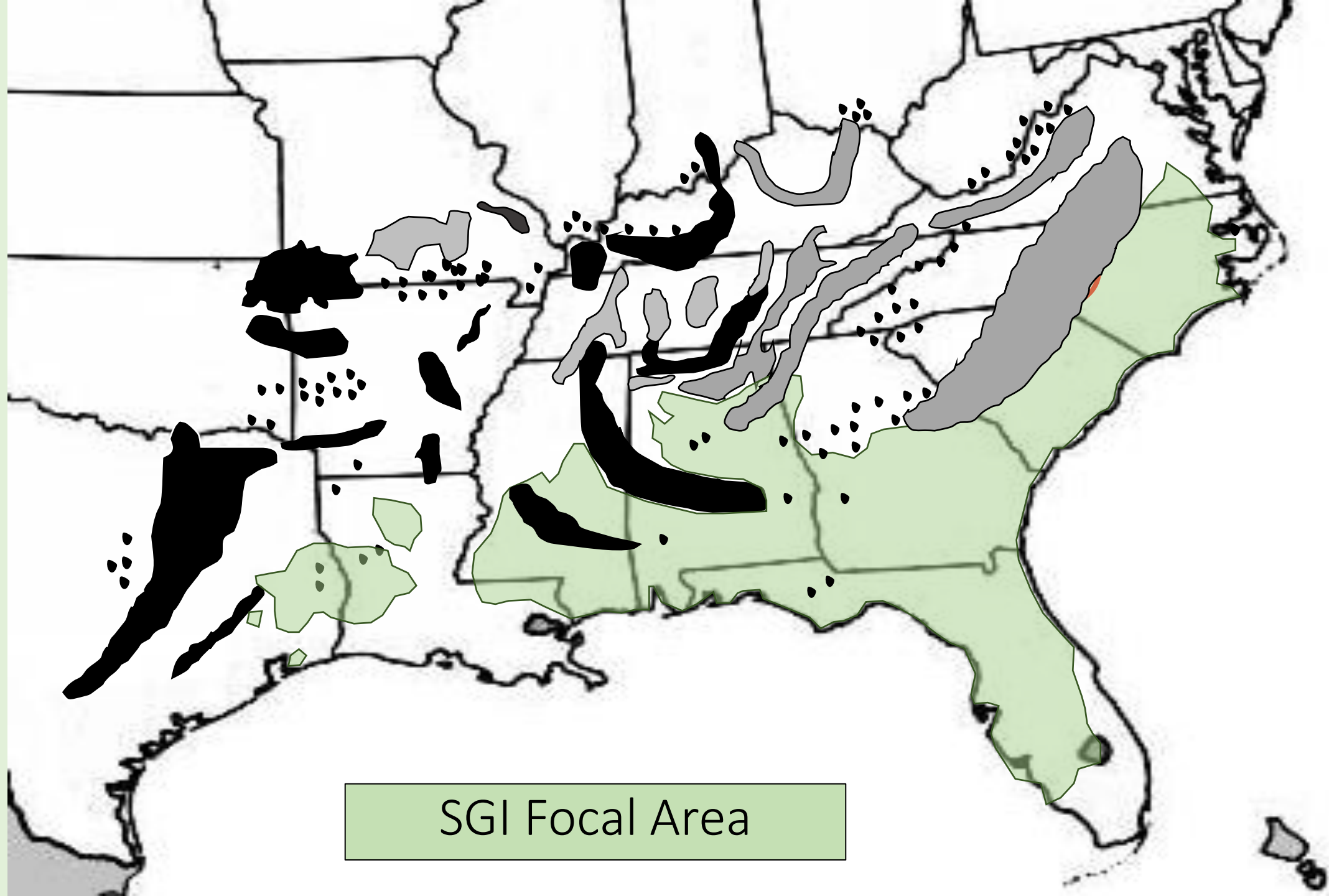
SGI Focal Area





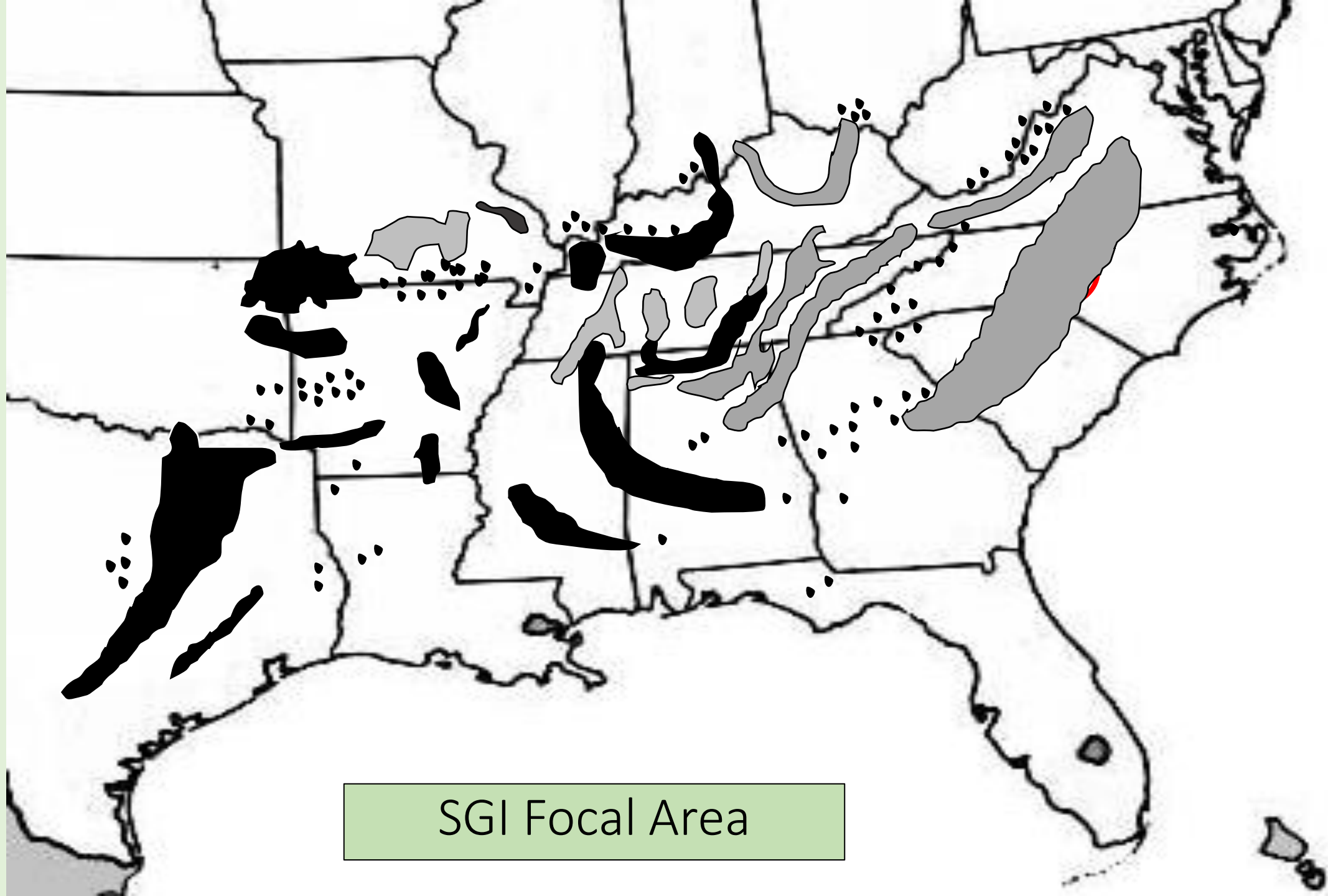
SGI Focal Area





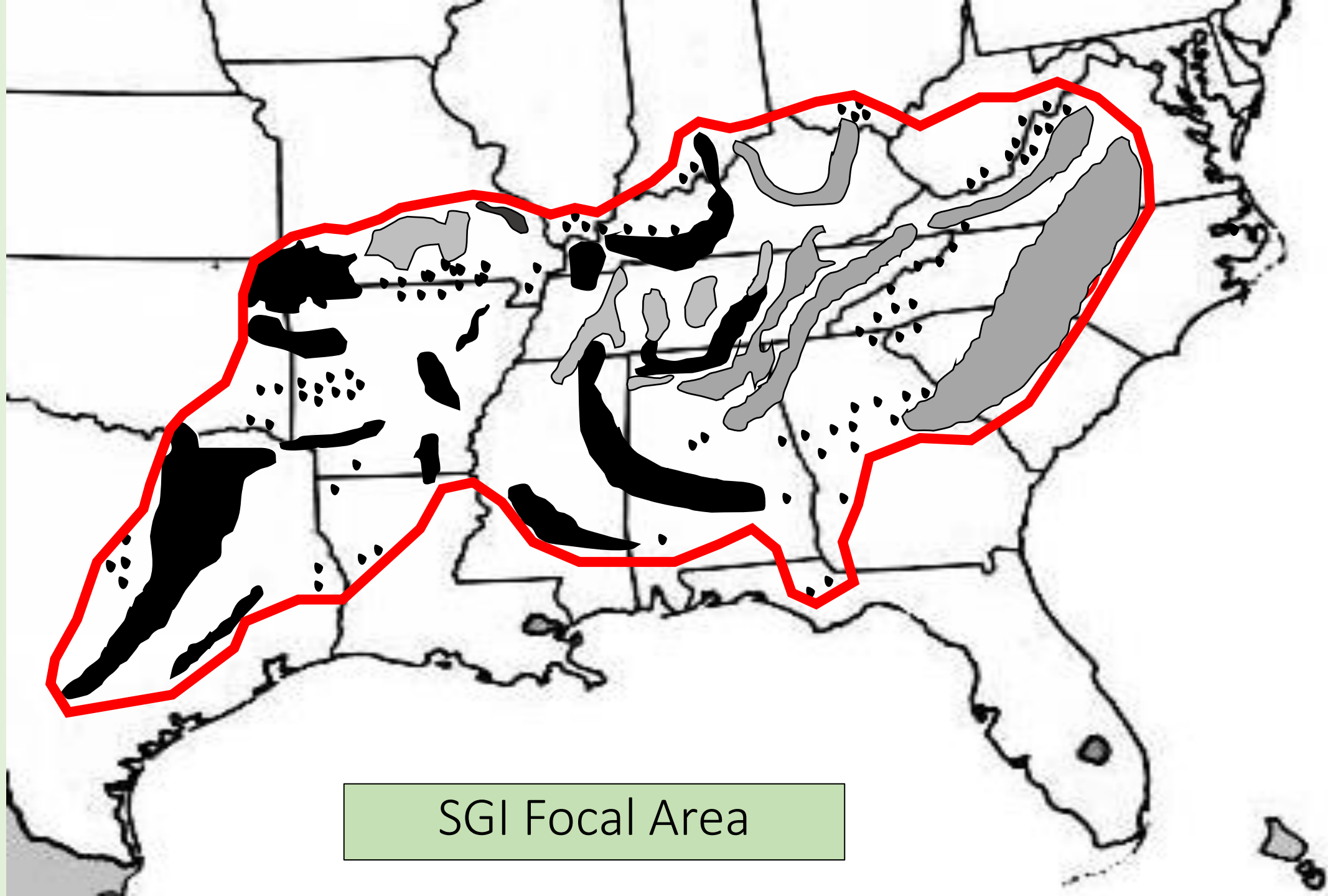
SGI Focal Area





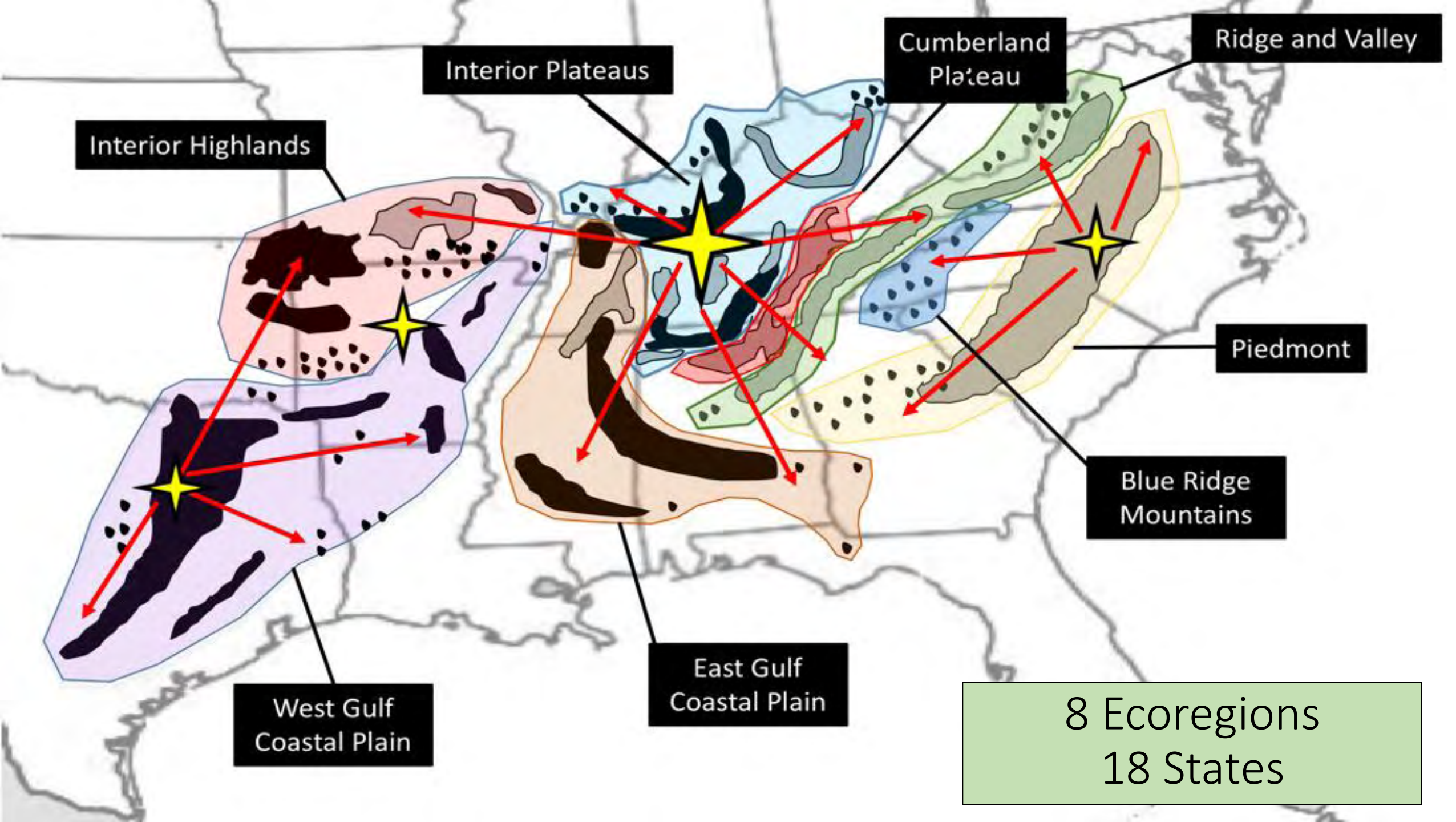
SGI Focal Area





SGI Focal Area







# APSU Center for Field Biology



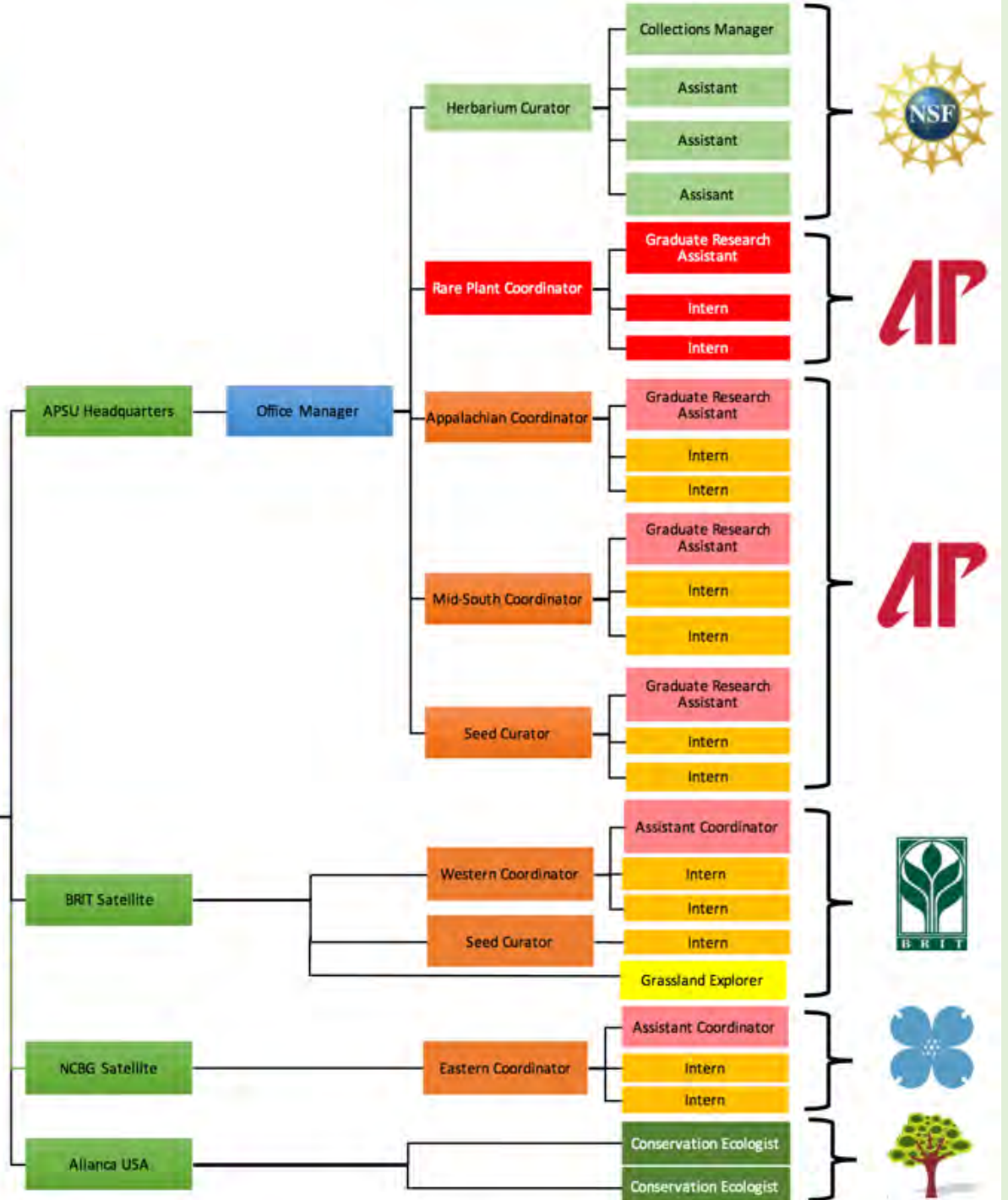


# Southeastern Grasslands Conservation Center

**AP Austin Peay**  
State University  
*Find Your Place in the World*



SGCP Director



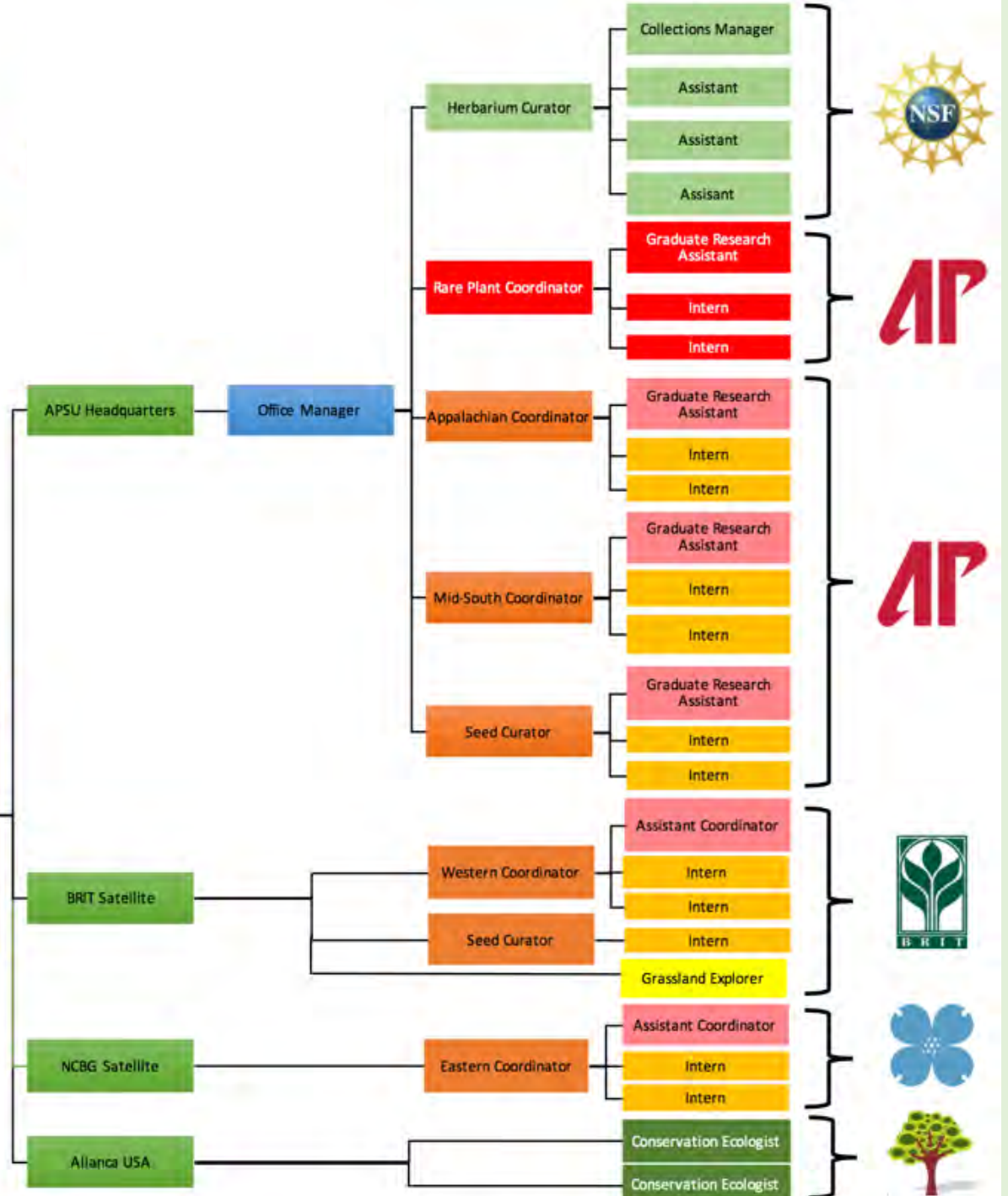


# Southeastern Grasslands Conservation Center

## The Southeastern Grassland Biodiversity Center



### SGCP Director

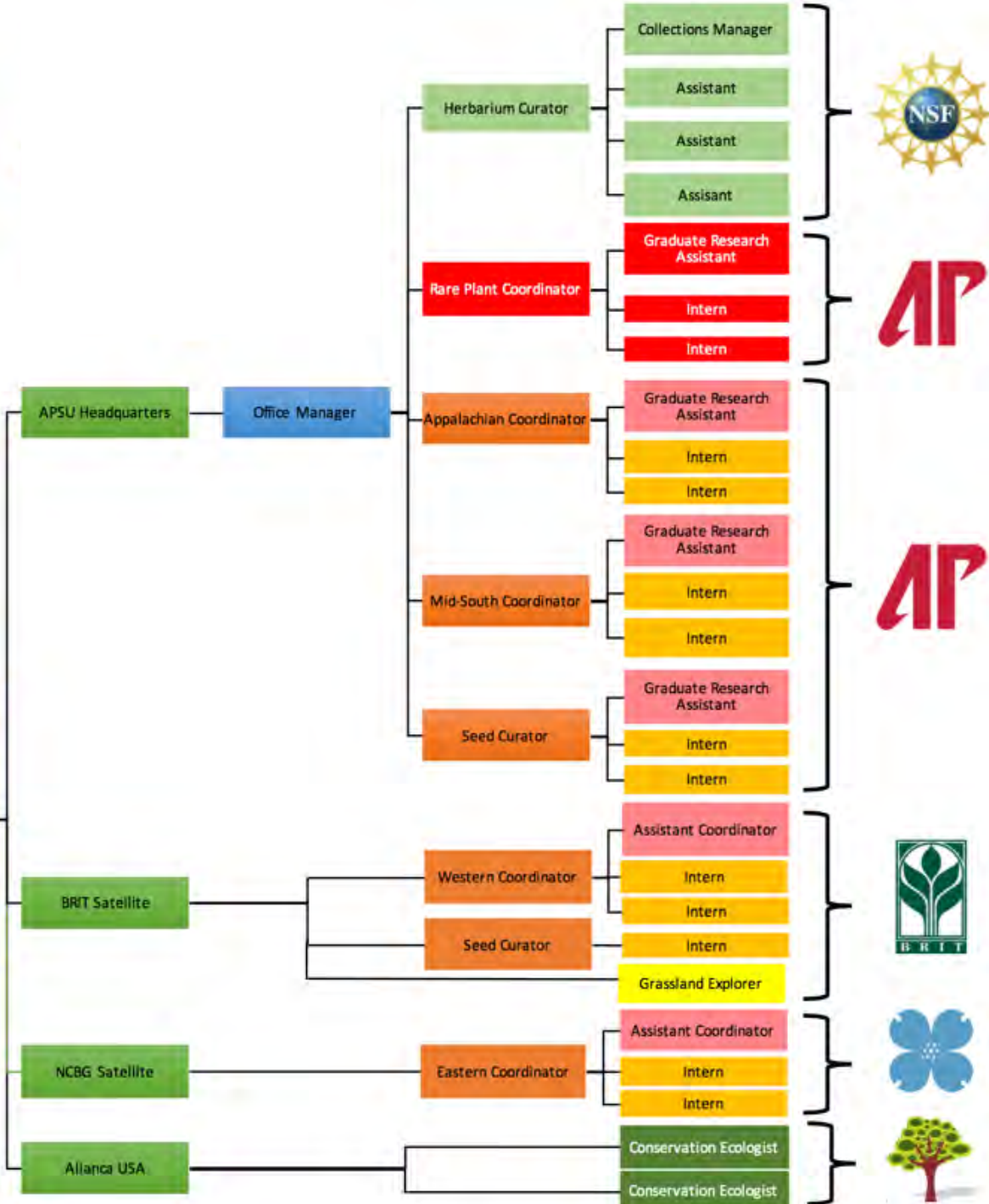




# Grassland Museum



## SGCP Director

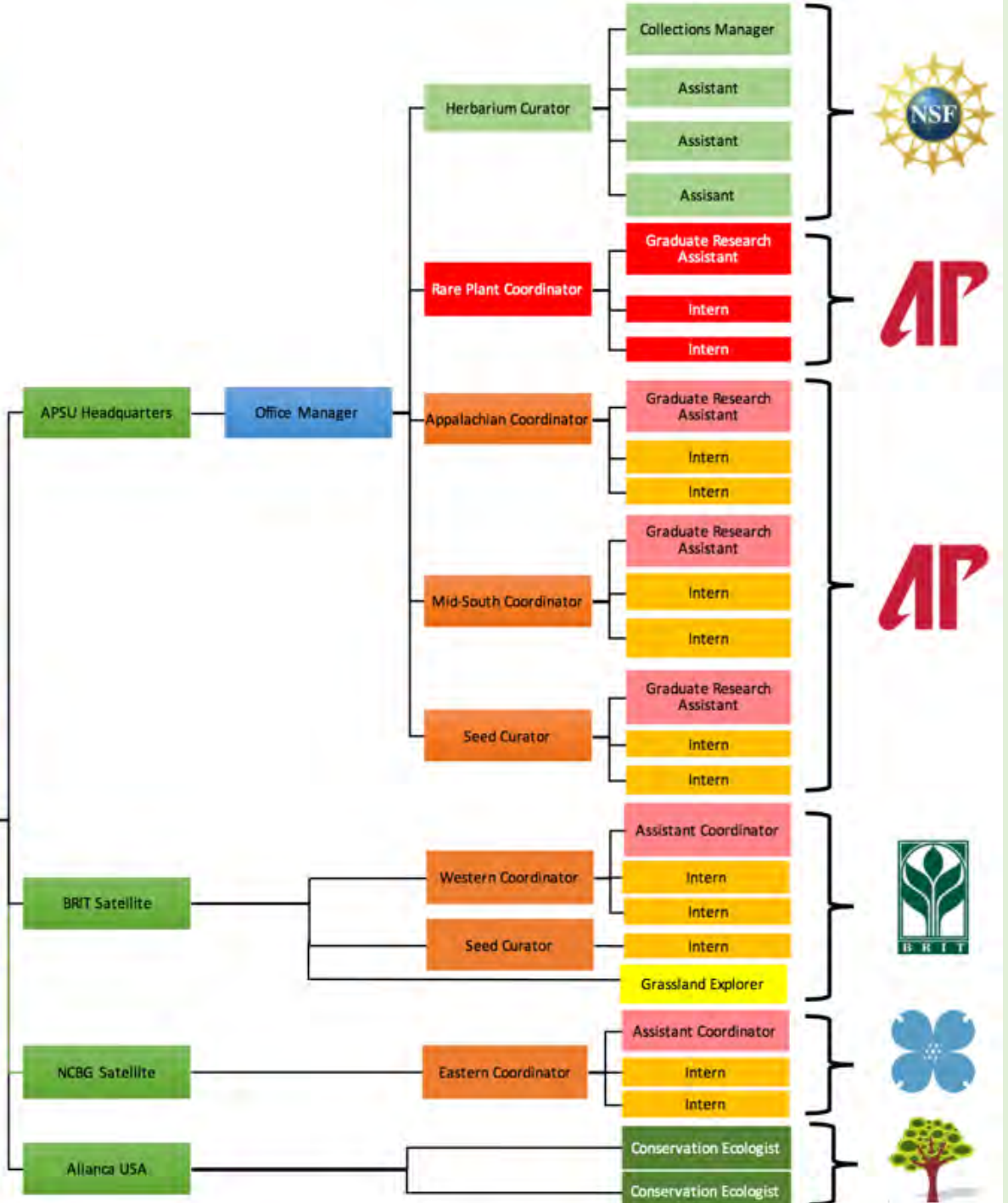




# Grassland Seedbank



## SGCP Director

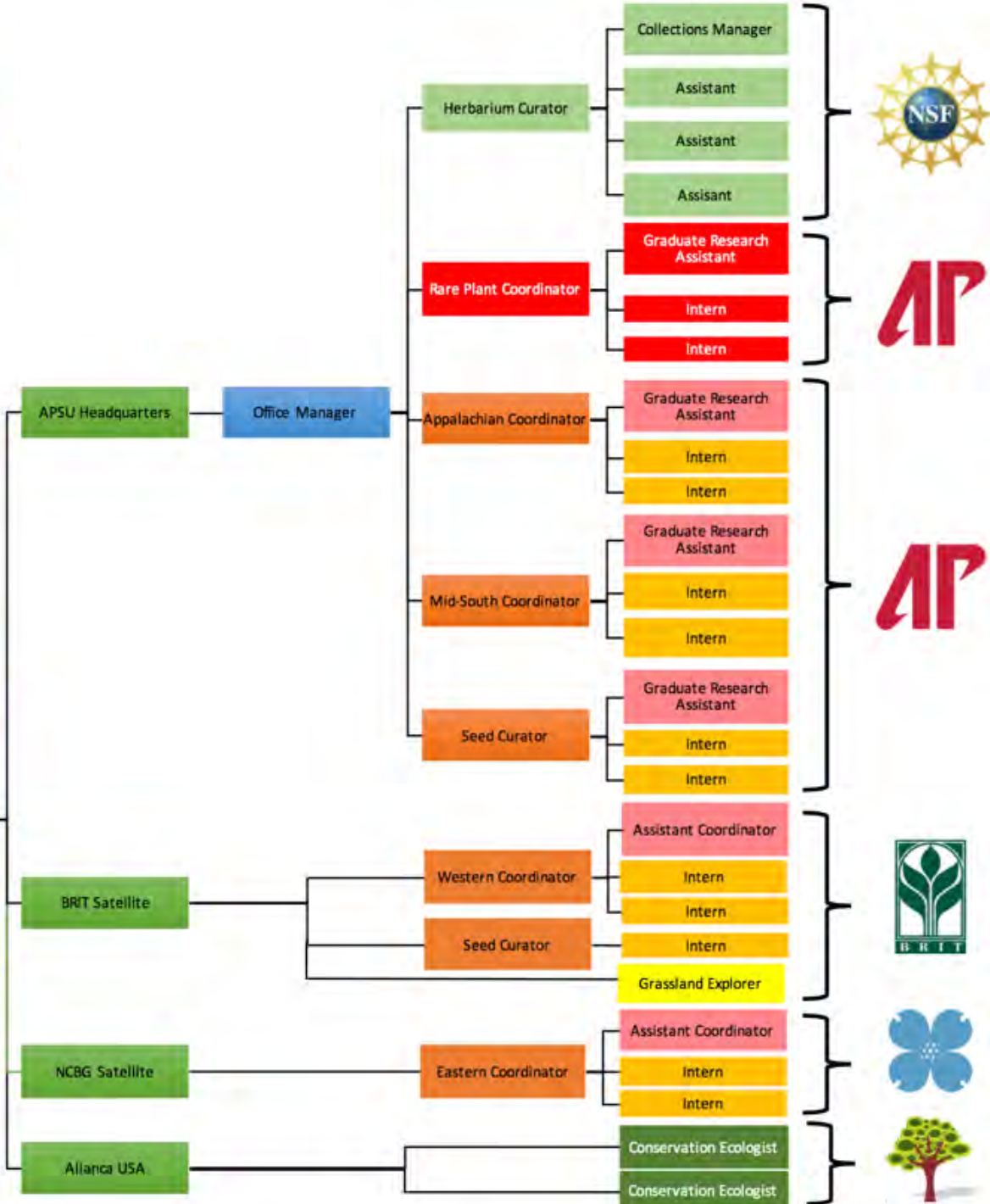




# Grassland Seedbank



SGCP Director

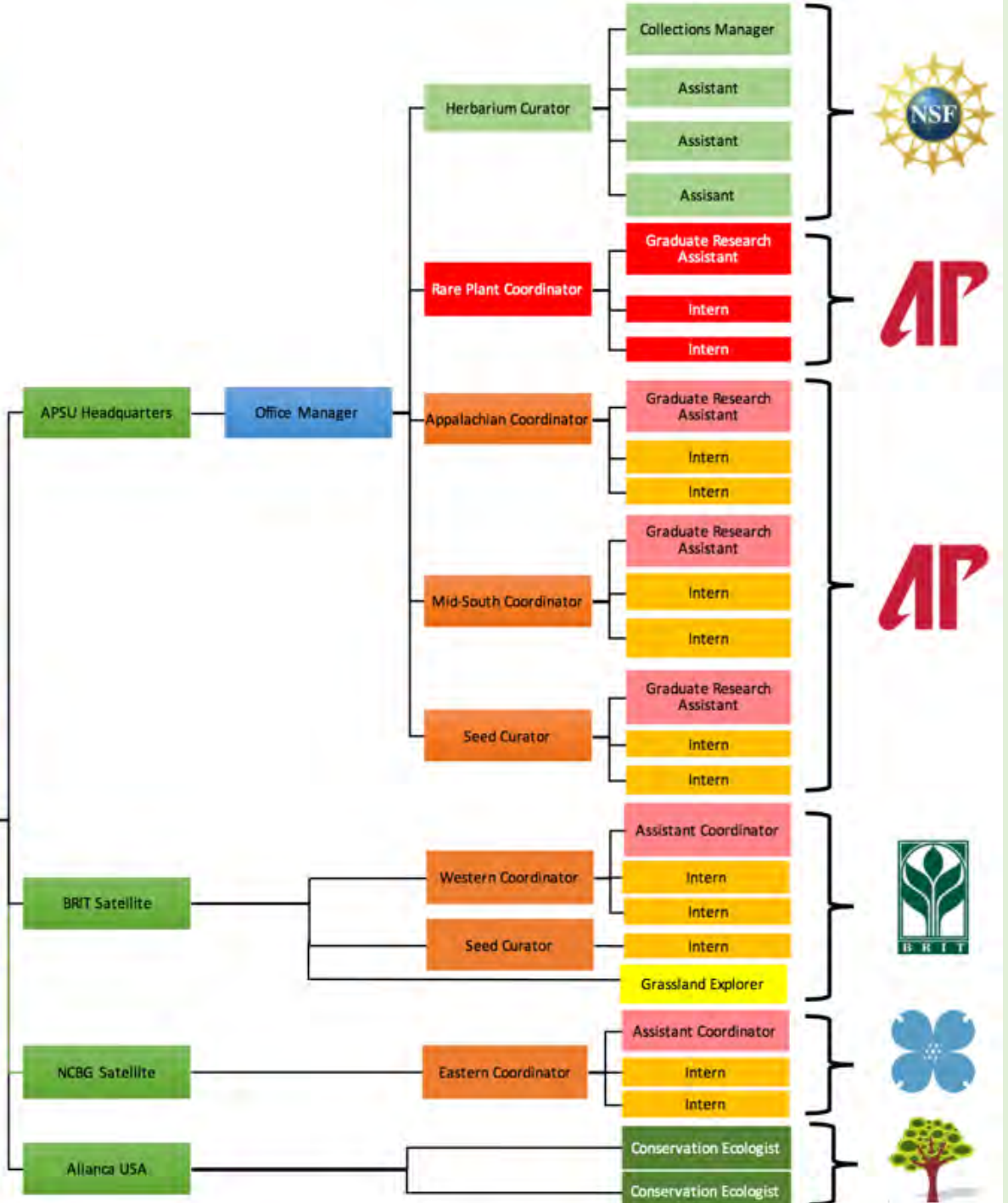




# Grassland Seedbank



## SGCP Director

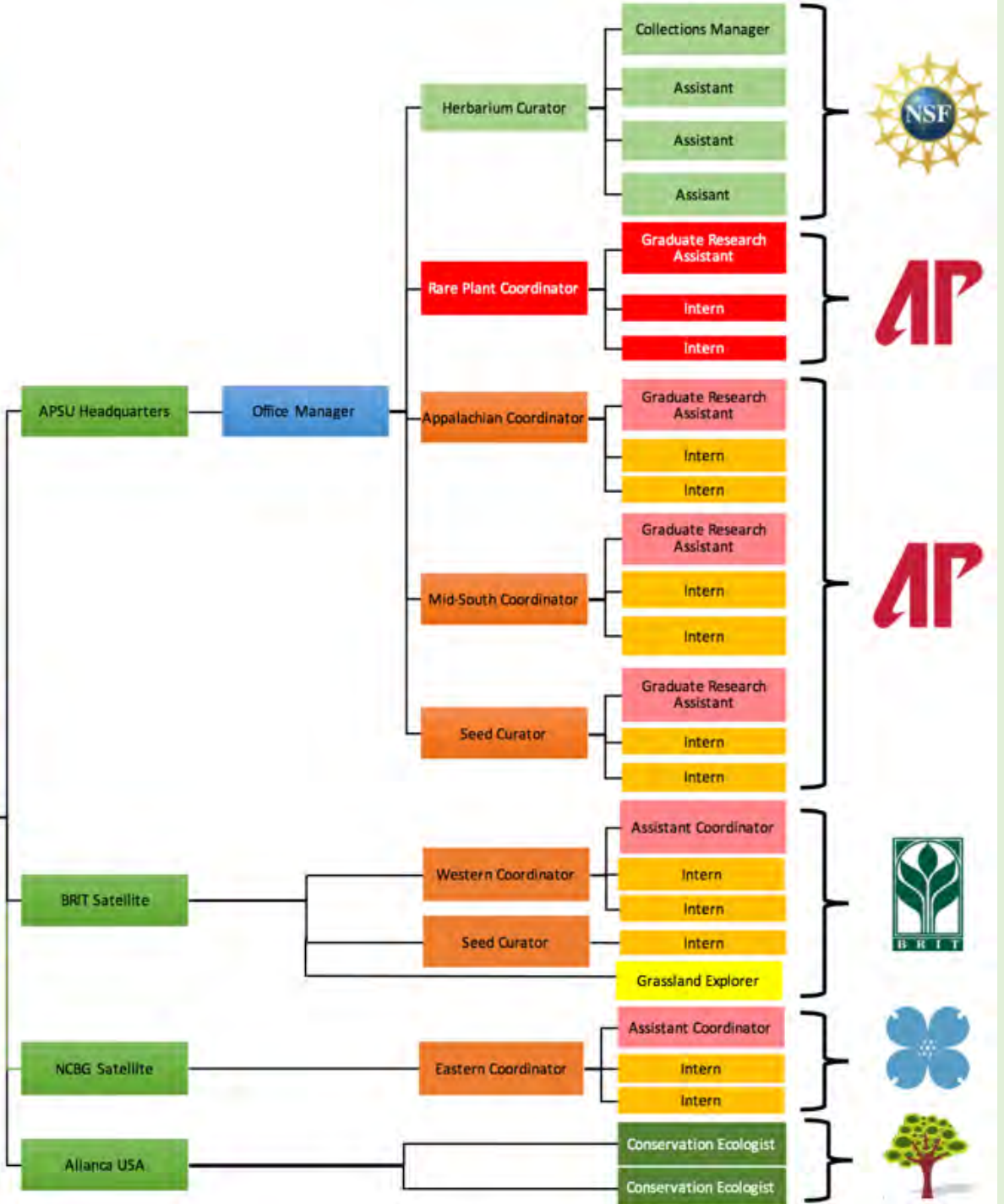




# Grassland Research Herbarium



SGCP Director





# “Botanists Without Borders”



- Research Coordination & Prioritization
- Development of Southeastern Grasslands Database
- Biodiversity Exploration

Theo Witsell  
Grassland Biodiversity Explorer



# Seed Curator & Rare Plant Coordinator

-jointly  
manage  
garden &  
greenhouse  
operations







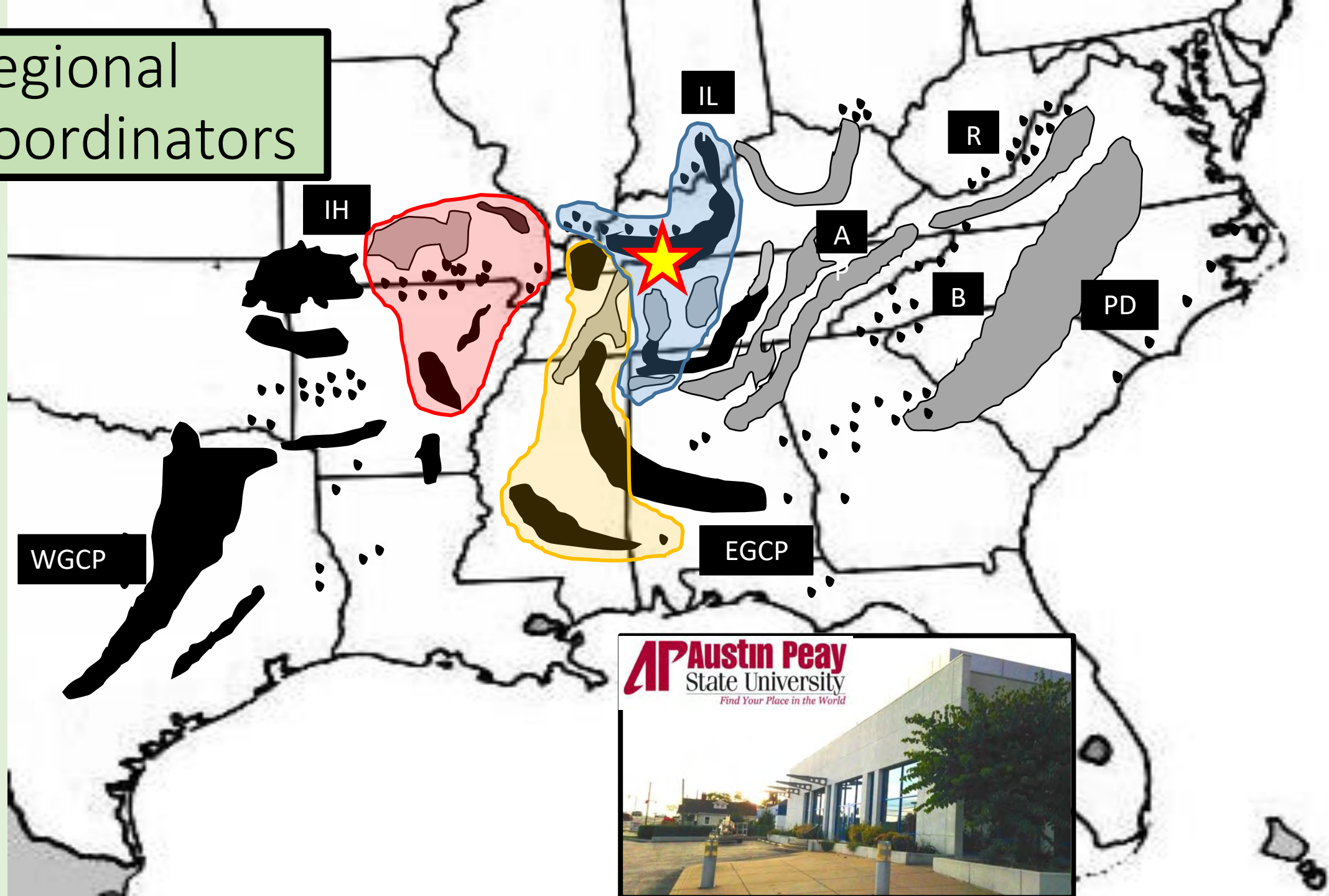
# APSU Botanical Garden

307 native species





# Regional Coordinators



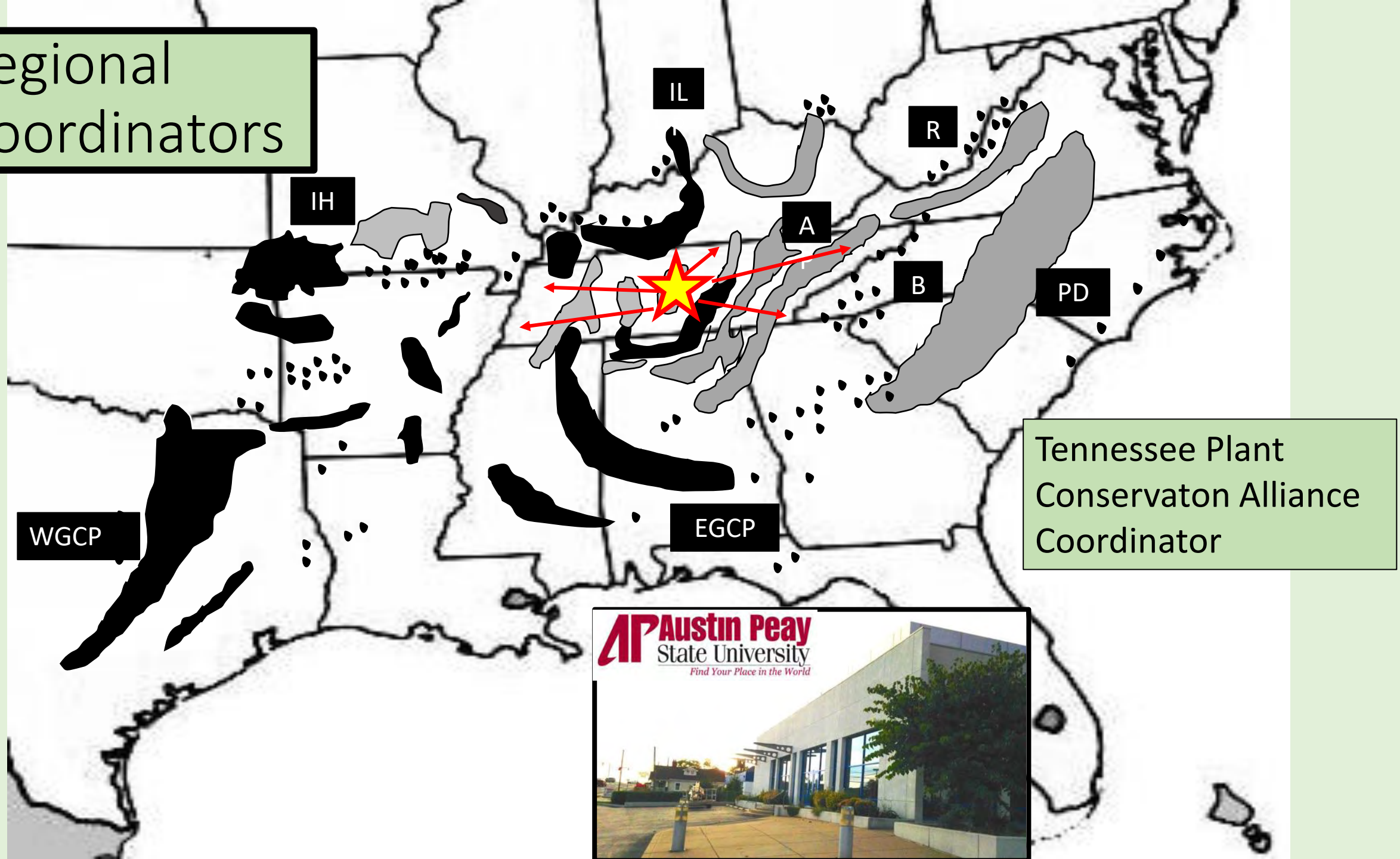


# Regional Coordinators





# Regional Coordinators



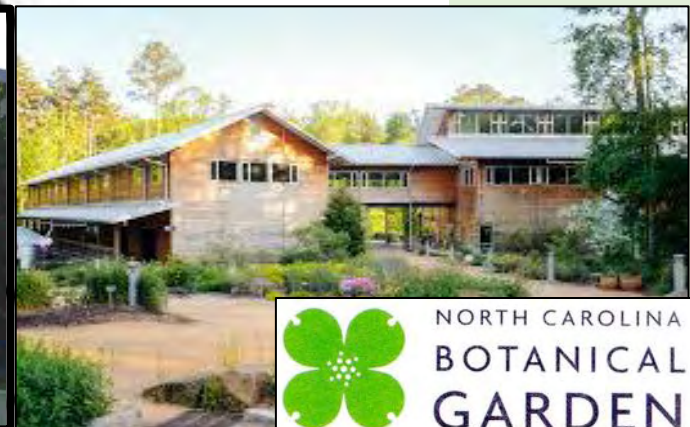
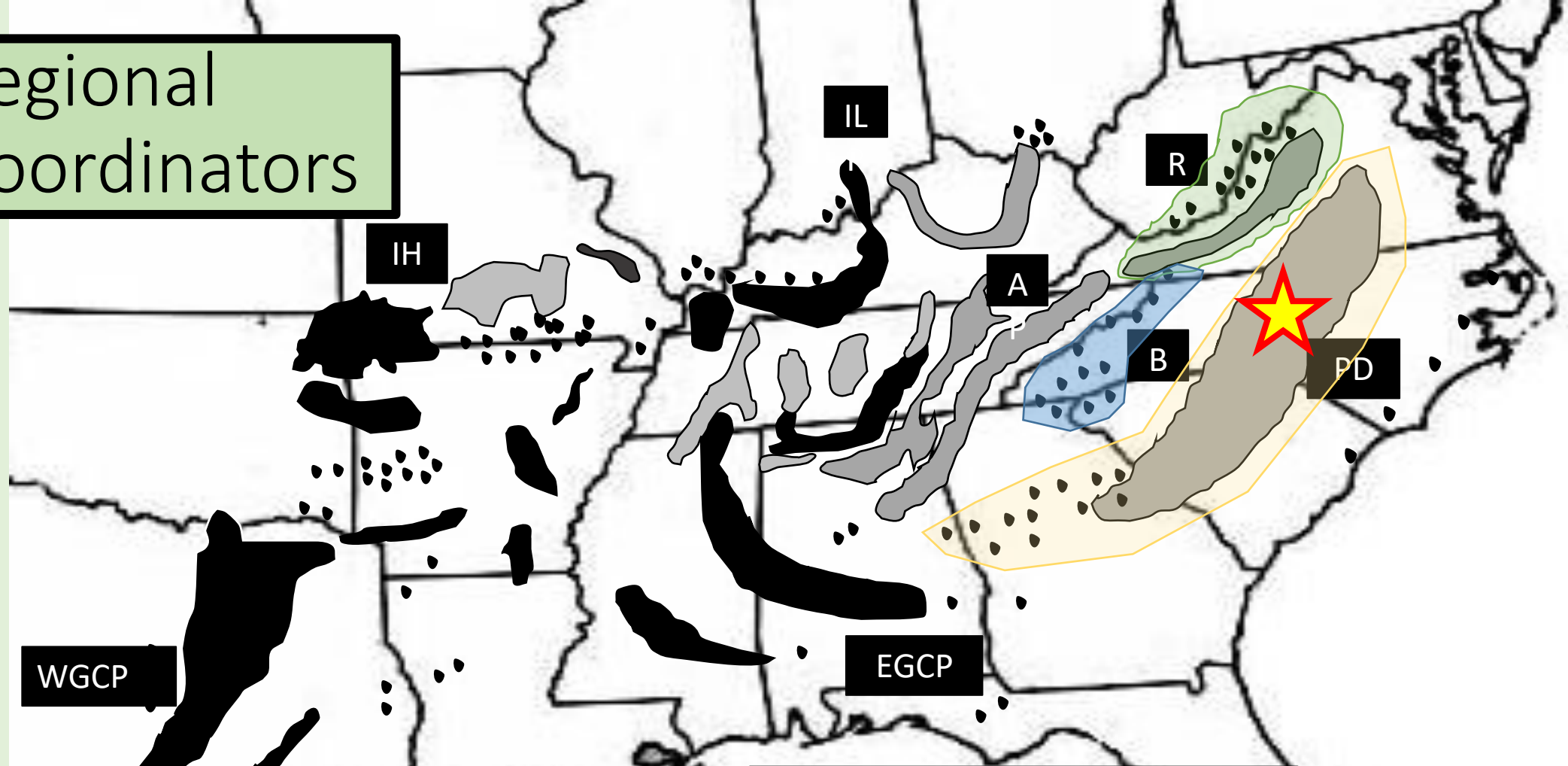


# Regional Coordinators



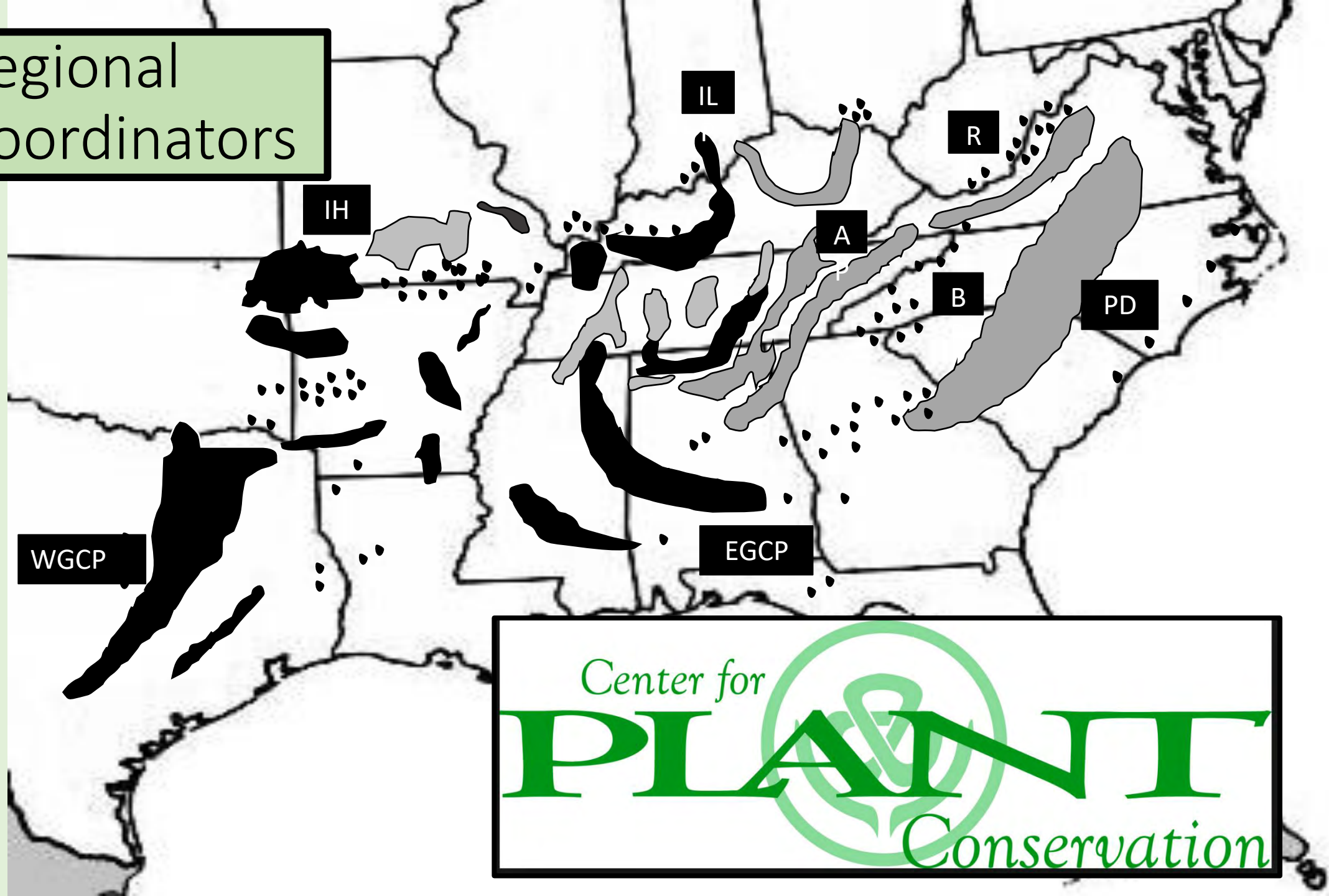


# Regional Coordinators





# Regional Coordinators

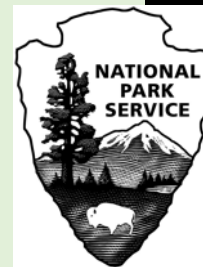
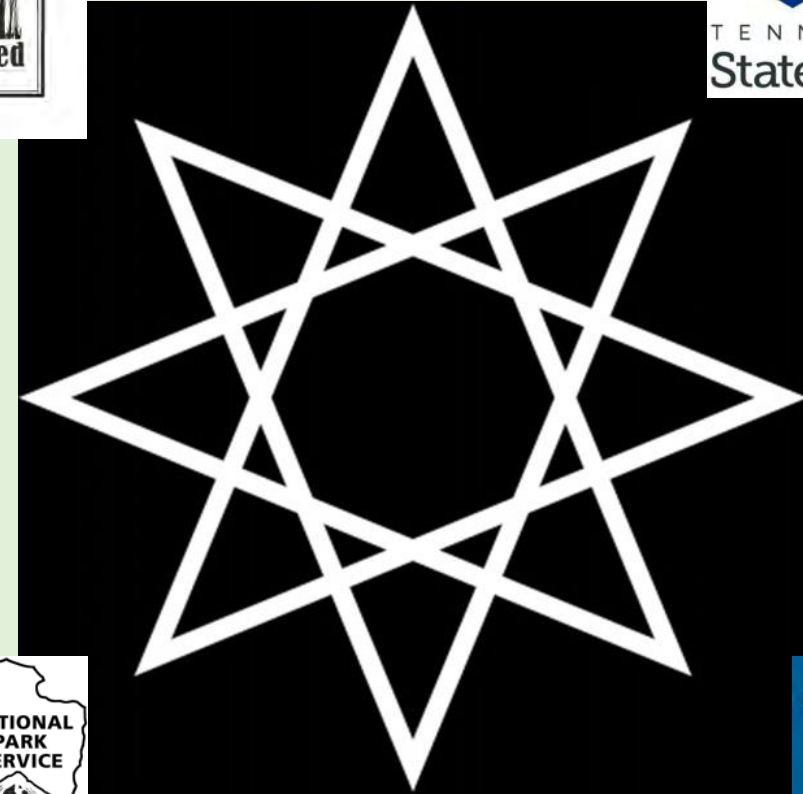




# TPCA Coordinator



Research & On-the-ground-  
conservation







GRAs / Interns





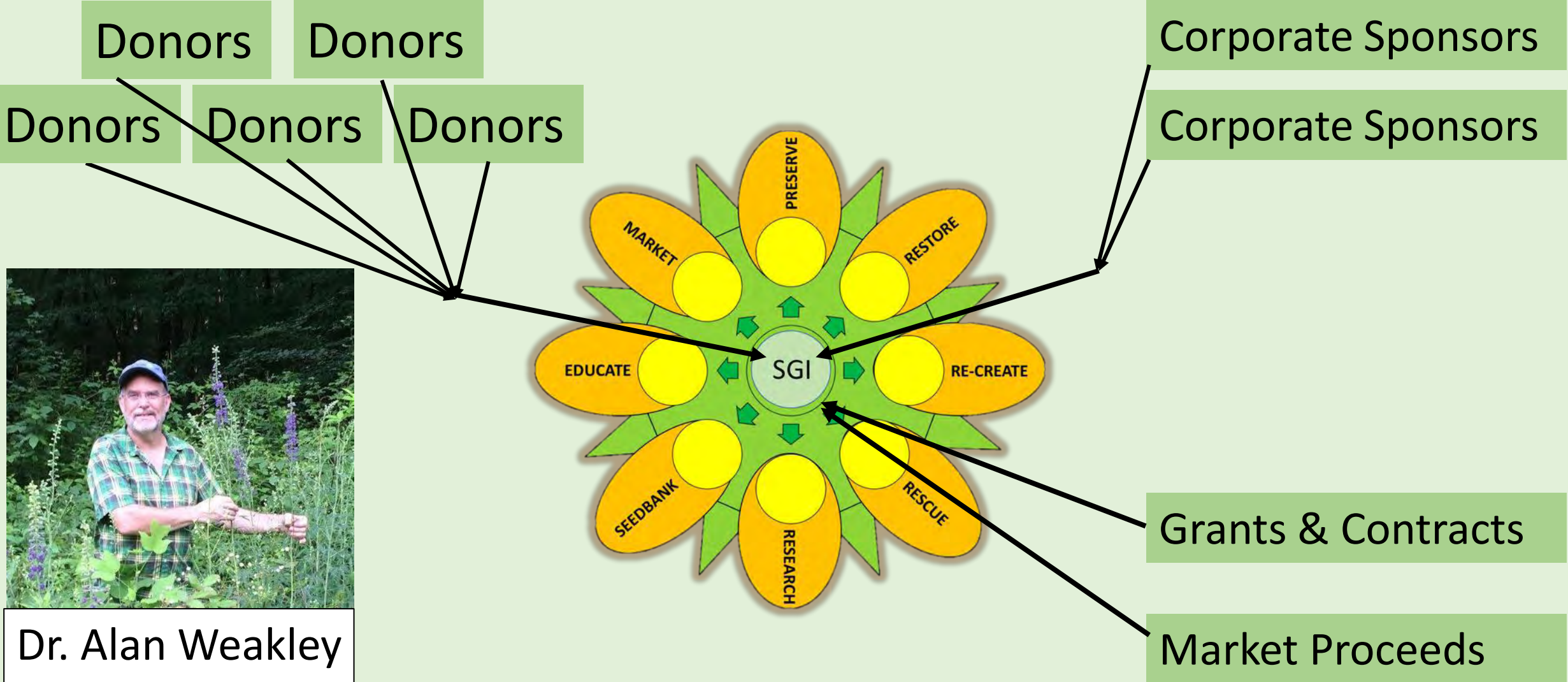
# How will we function as a granting program?



- Private donors
- Corporations
- Government agencies (grants & contracts)



# What kinds of projects will we support?



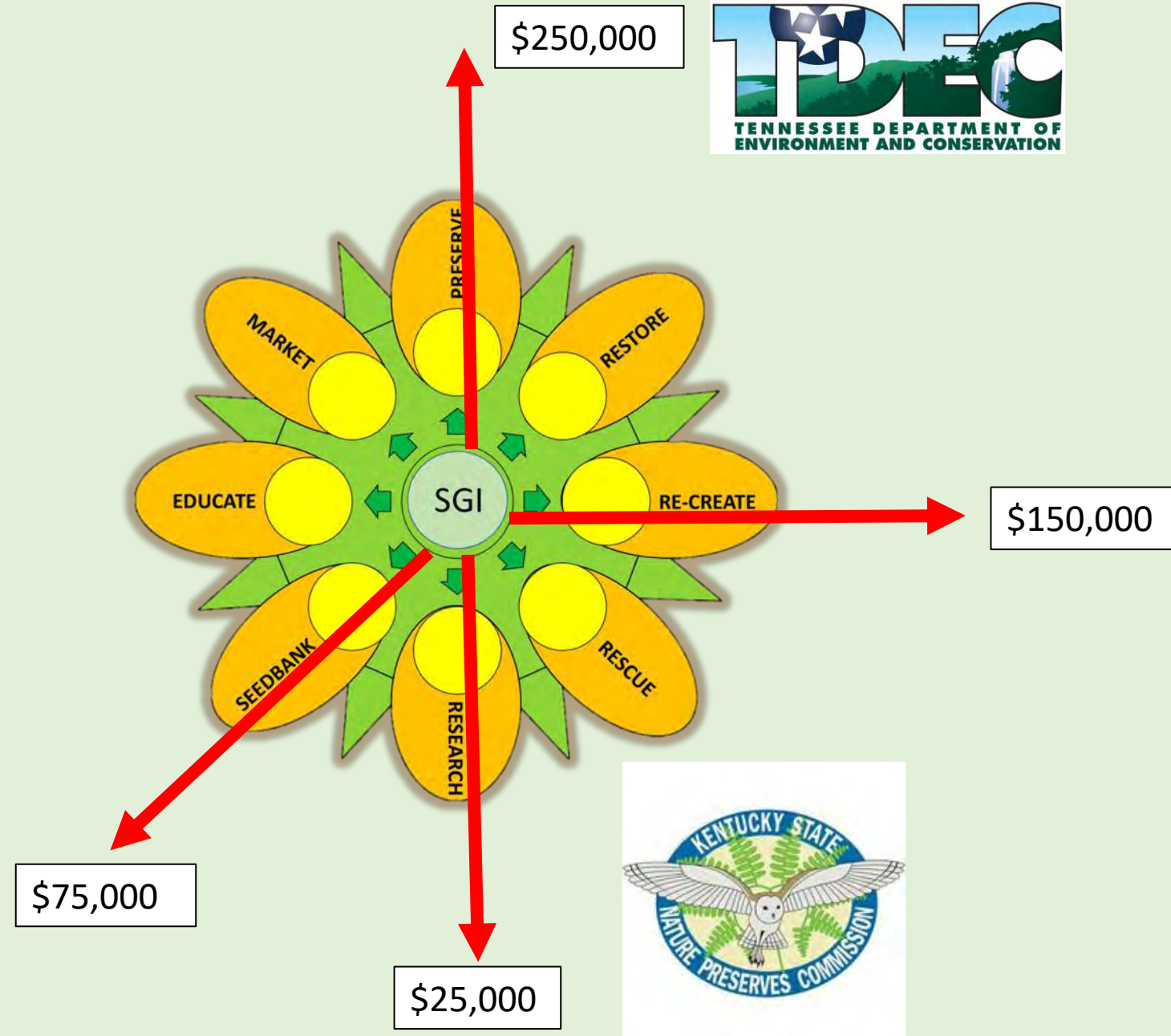
Dr. Alan Weakley  
Chair, Grassland  
Advisory Board



# What kinds of projects will we support?



Dr. Alan Weakley  
Chair, Grassland  
Advisory Board







PRESERVATION



RESTORATION



RESEARCH & MONITORING



RESCUE



RE-CREATION



SEED-BANKING





MARKET-DRIVEN



EDUCATION & OUTREACH