

Evaluating Conservation Value of SFI Lands



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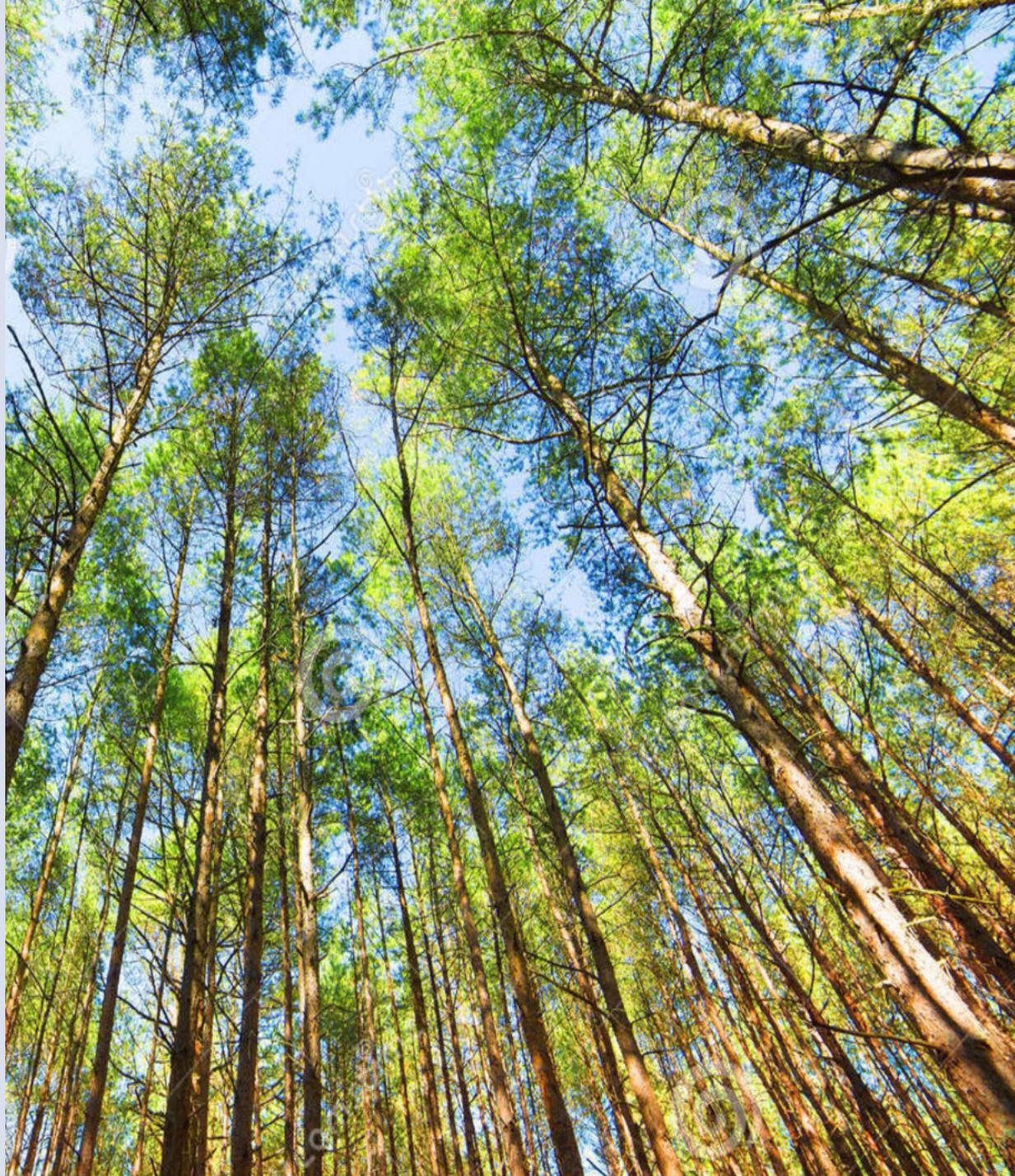


How can we assess the biodiversity and conservation value of SFI-certified forests?

What themes
express these
values that have
quantifiable
metrics?

Habitat for
priority wildlife

Ecological
Integrity



Ecological integrity:

The structure, composition, and function of an ecosystem operating within the bounds of natural or historic disturbance regimes.



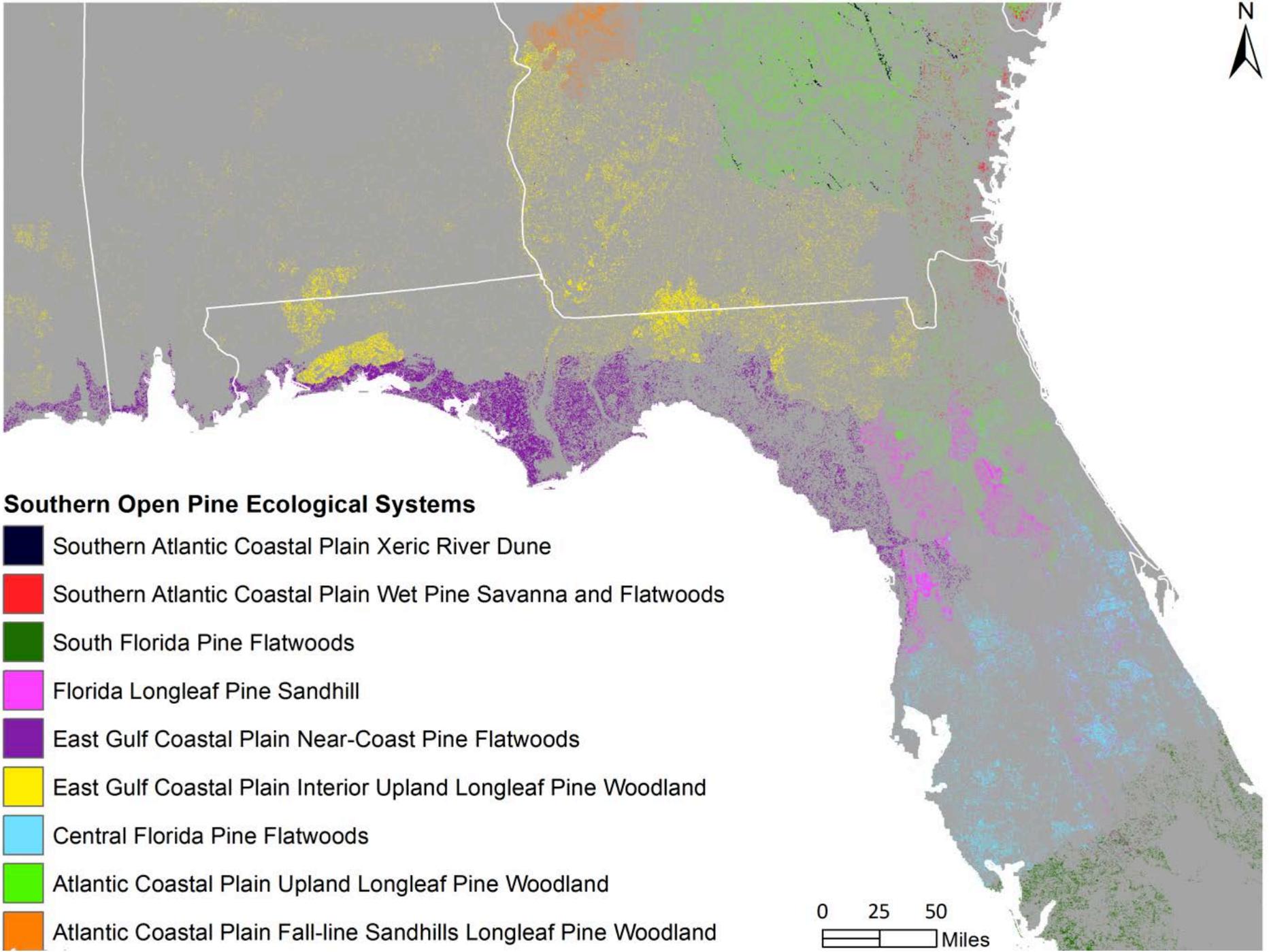
Priority Species:

Species with high conservation value, associated with the target ecosystem, and are indicators of ecological condition



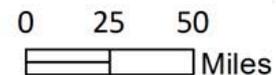


2016 Goal: Develop a rapid assessment metrics process that helps SFI-certified landowners understand/demonstrate their stands' contribution to overall ecological integrity and wildlife habitat for key species



Southern Open Pine Ecological Systems

-  Southern Atlantic Coastal Plain Xeric River Dune
-  Southern Atlantic Coastal Plain Wet Pine Savanna and Flatwoods
-  South Florida Pine Flatwoods
-  Florida Longleaf Pine Sandhill
-  East Gulf Coastal Plain Near-Coast Pine Flatwoods
-  East Gulf Coastal Plain Interior Upland Longleaf Pine Woodland
-  Central Florida Pine Flatwoods
-  Atlantic Coastal Plain Upland Longleaf Pine Woodland
-  Atlantic Coastal Plain Fall-line Sandhills Longleaf Pine Woodland



Desirable qualities for metrics:

- Maximize objectivity and repeatability
- Efficient use of existing datasets
- Minimal specific expertise required
- Easy to collect/generate/calculate
- Integrated data from remote sensing, literature, existing observations, rapid field assessment expert opinion

Dry & Mesic Longleaf Pine Woodlands

Canopy Metrics

| | Excellent | Good | Fair | Poor |
|---|---|--|---|---|
| Canopy Southern Yellow Pine Basal Area | 30-80 ft ² /acre basal area of longleaf pine | 20 to <30 or >80 to 90 ft ² /acre basal area of longleaf pine | 10 to <20 or >90 to 105 ft ² /acre basal area of longleaf pine | <10 or >105 ft ² /acre basal area of longleaf pine |
| Southern Yellow Pine Canopy Cover | 30-65% canopy cover of longleaf pine | >20 to <30% canopy cover or >65 to 75% canopy cover of longleaf pine | 10-20% canopy cover or >75 to 85% canopy cover of longleaf pine | <10% cover or >85% cover of longleaf pine |



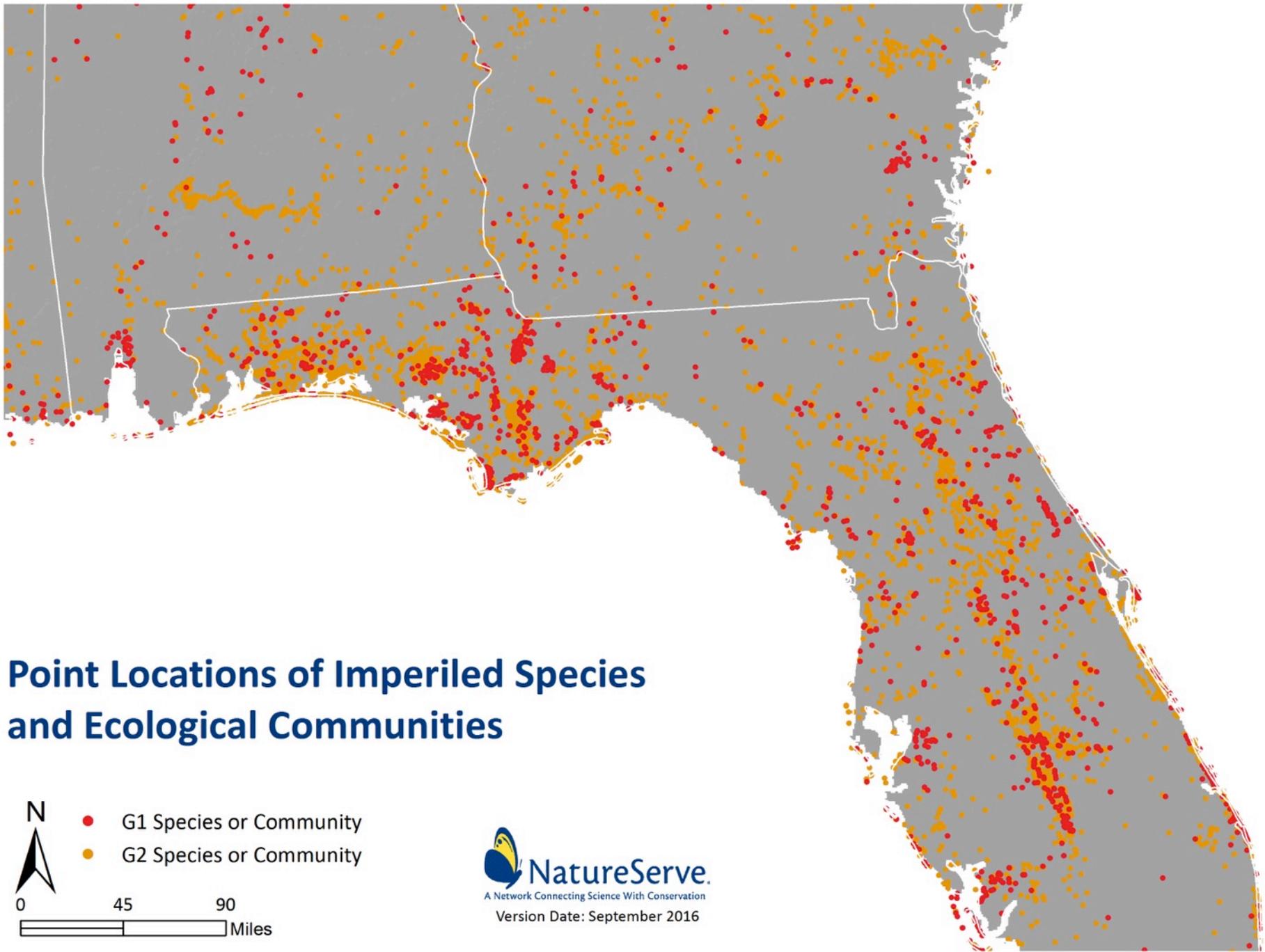
- Canopy metrics: Canopy cover area, stand density index
- Midstory metrics: Shrub cover, fire tolerant plant cover
- Ground layer metrics: Invasive cover, herbaceous cover, regeneration
- Landscape metrics: Connectivity, corridors

Types of forest condition metrics associated with open pine forest ecosystems



- Red-cockaded woodpecker
- Brown-headed nuthatch
- Pine warbler
- Prairie warbler
- Eastern diamondback rattlesnake
- Pocket gopher (Southeastern, Baird's, Plains, Ozark)
- Pine snake (Louisiana, Black, Florida)
- Bachman's sparrow
- Northern bobwhite
- Gopher tortoise

Examples of priority species associated with open pine forest ecosystems

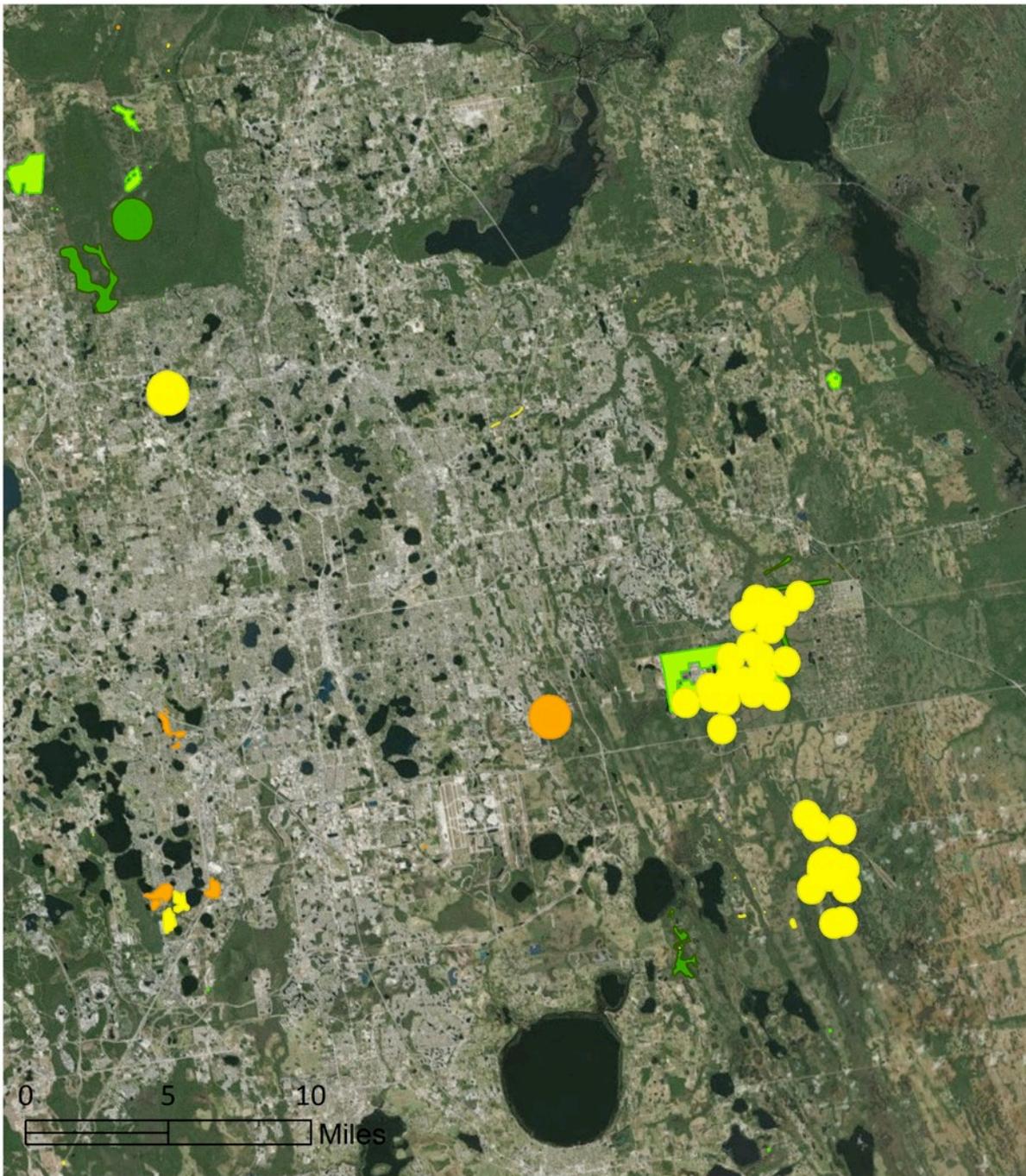


Point Locations of Imperiled Species and Ecological Communities



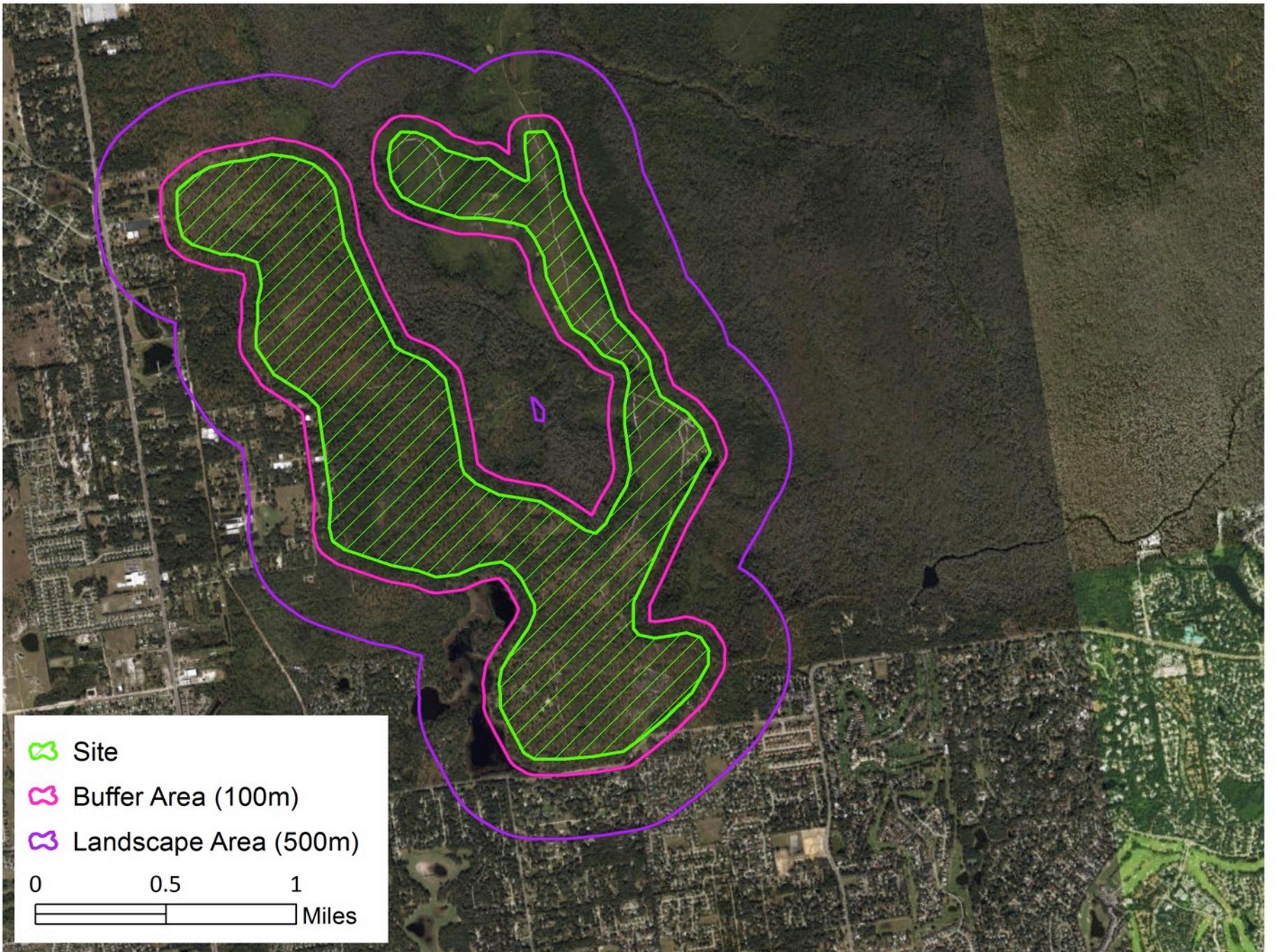
- G1 Species or Community
- G2 Species or Community

0 45 90
Miles



EOs by Rank

- A
- B
- C
- D

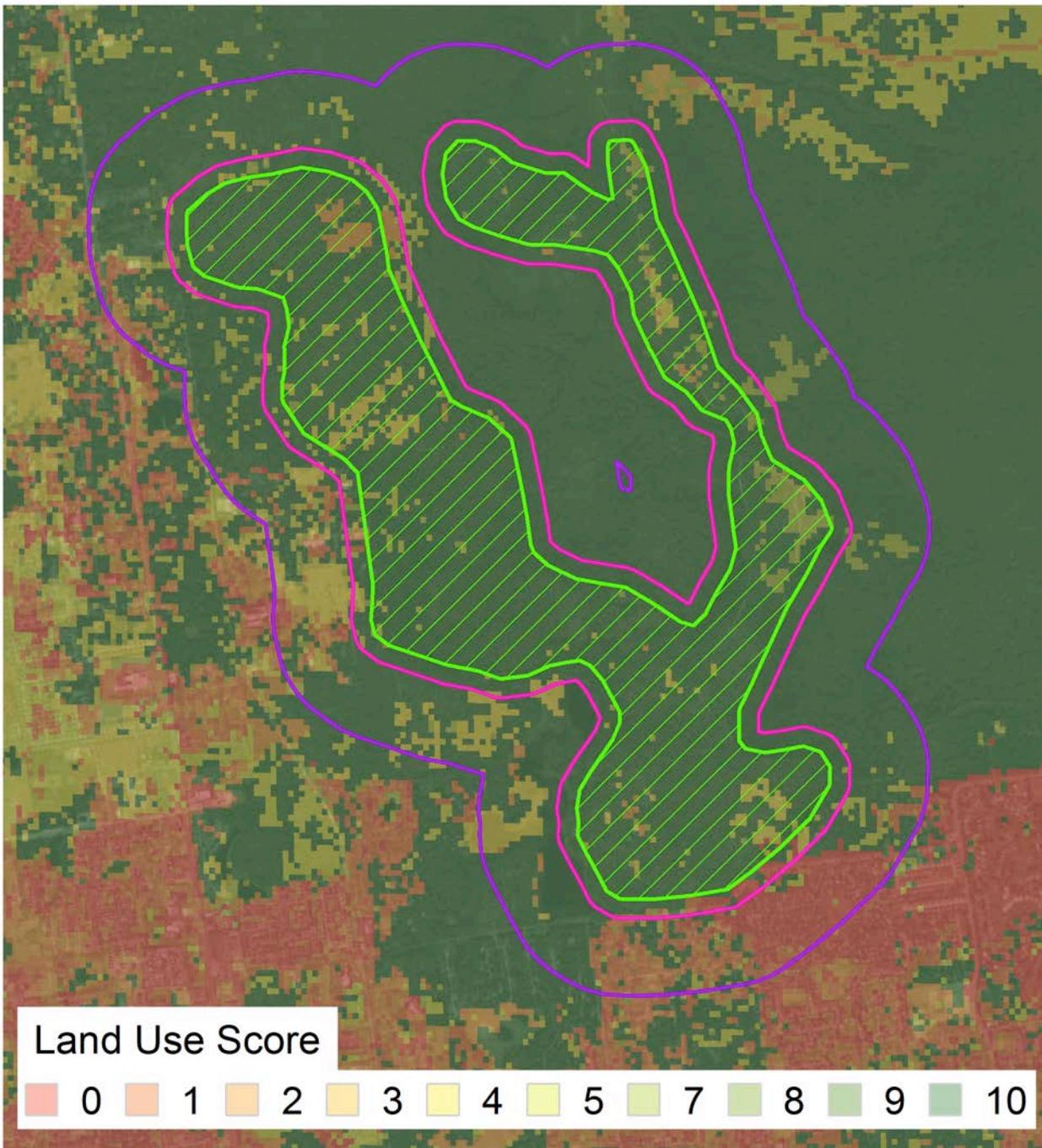


Site, Buffer, and Landscape Condition: Land Use Index (LUI)

Site 
LUI Score = 9.5
Rating = A

Buffer 
LUI Score = 9.2
Rating = B

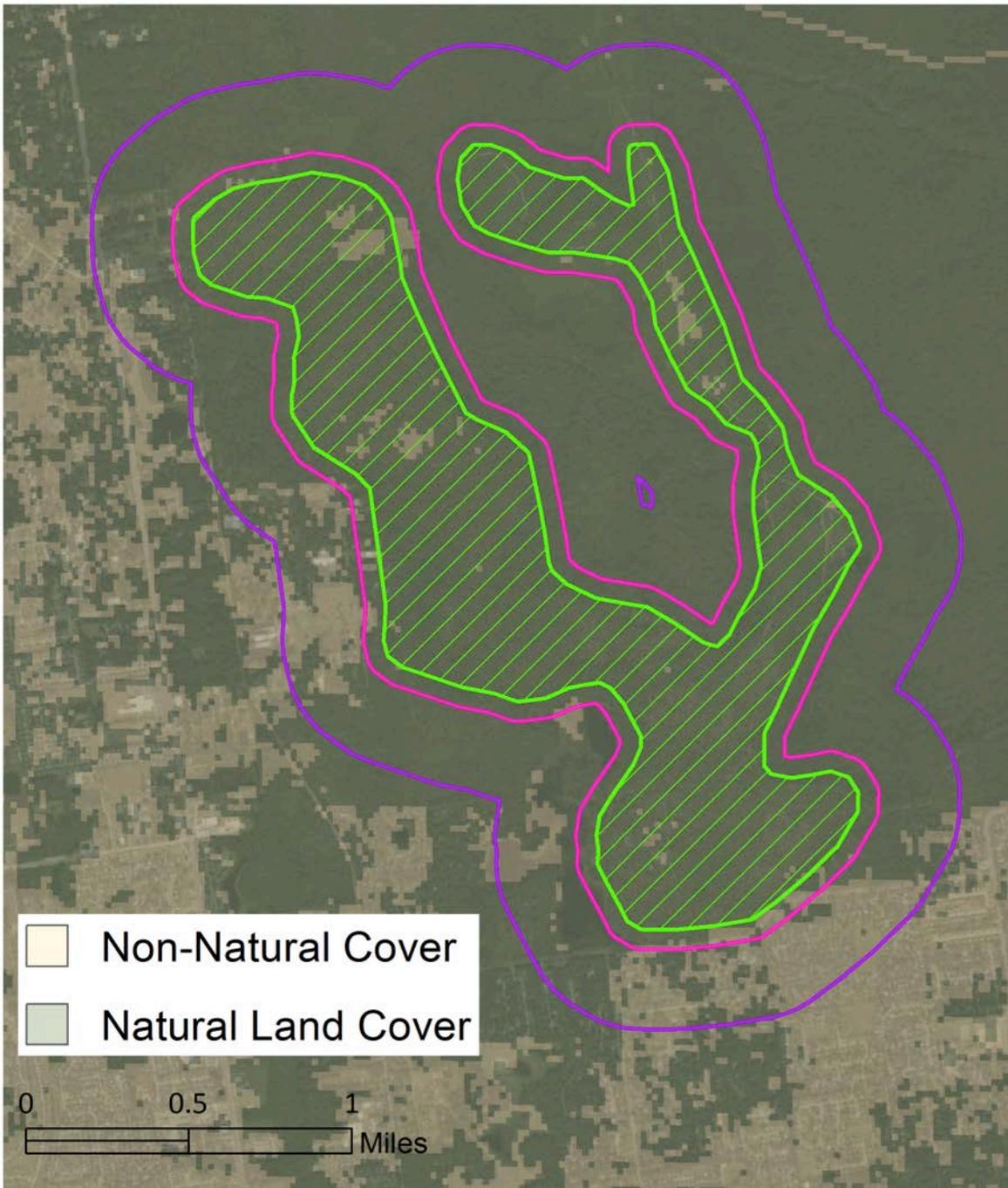
Landscape 
LUI Score = 8.7
Rating = B



Buffer and Landscape Condition: Connectivity

Buffer 
Percent Natural = 95%
Rating = A

Landscape 
Percent Natural = 88%
Rating = B+





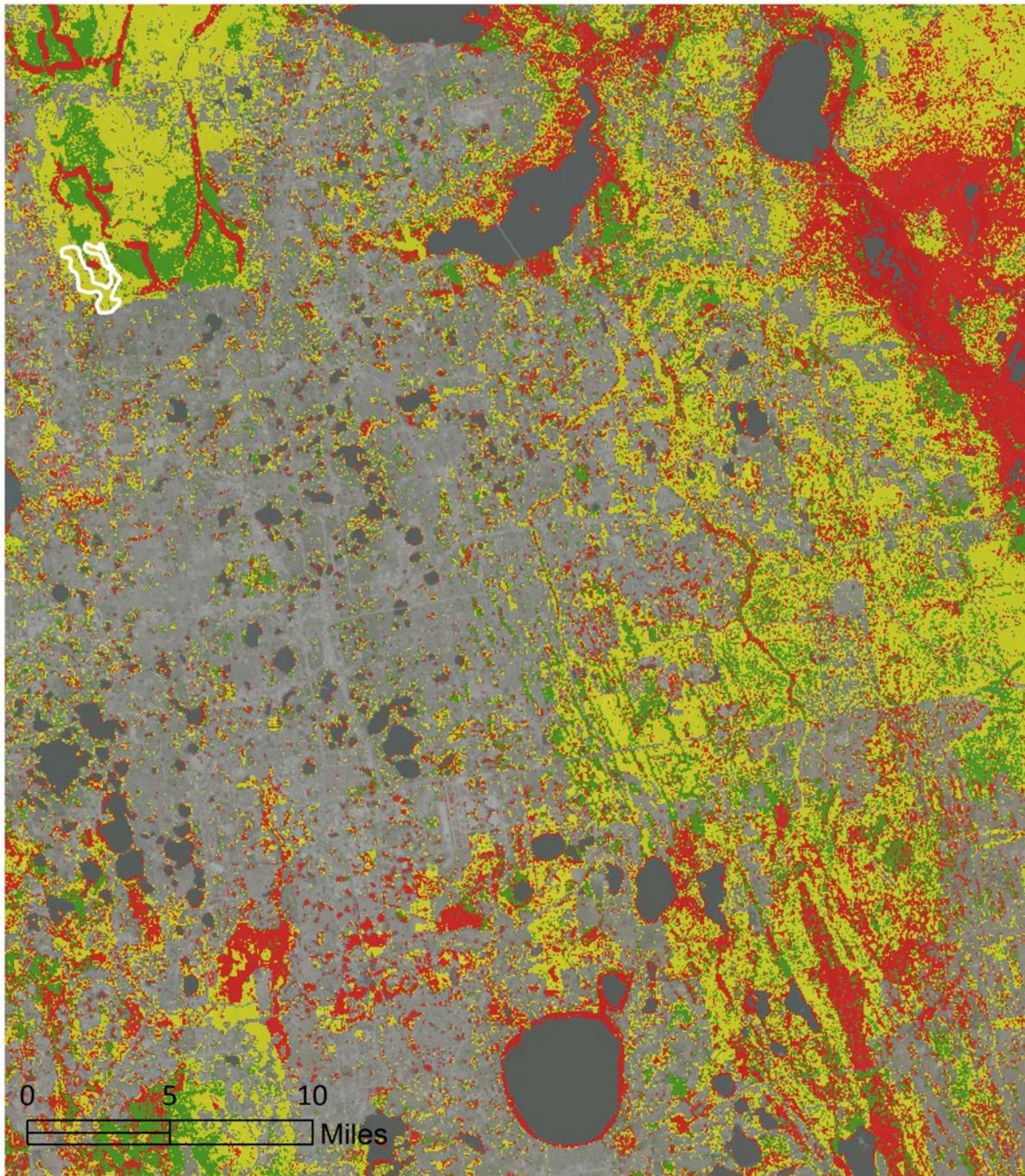
Site from
previous
examples

Natural Land Cover

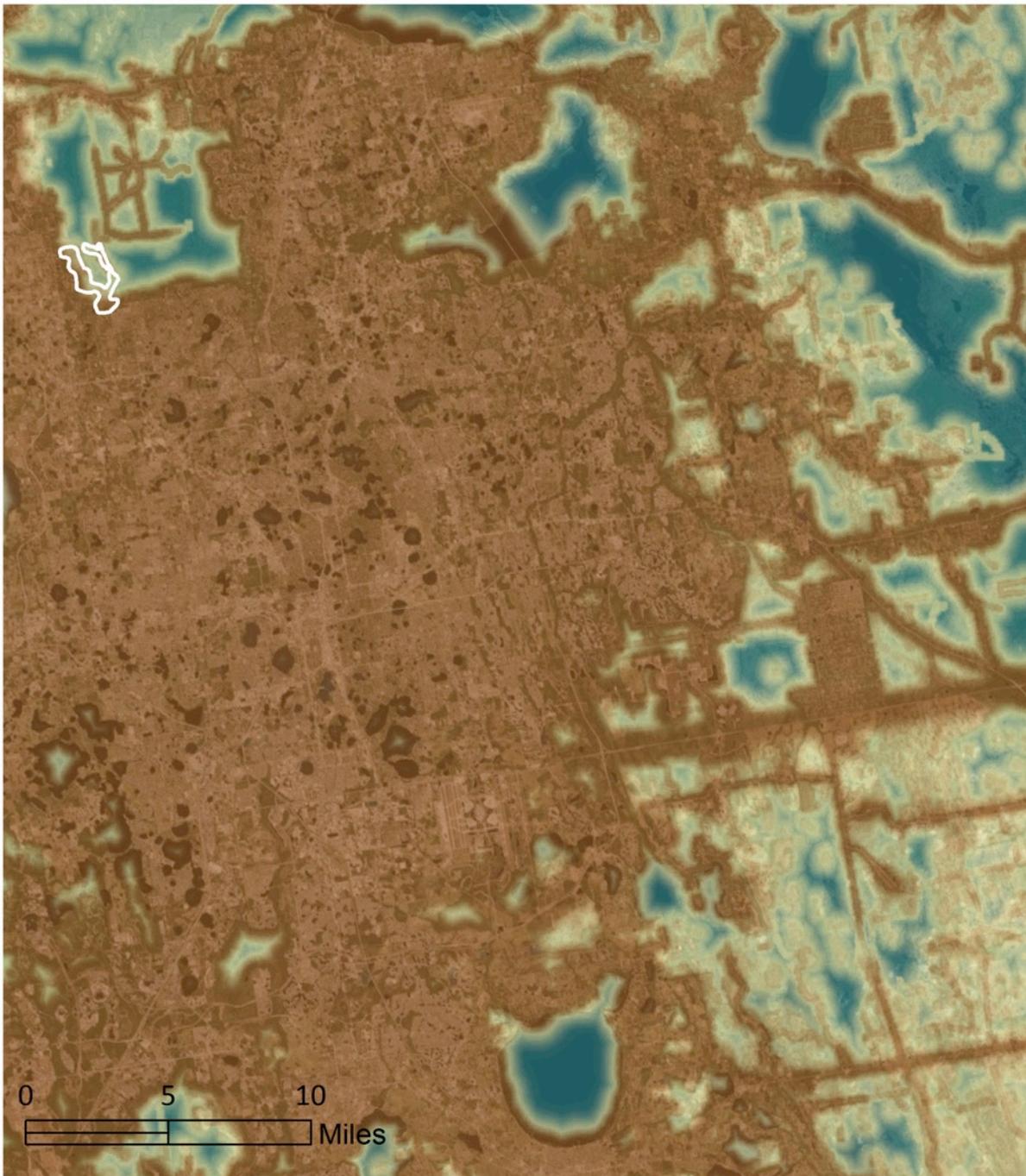


- Non-Natural Cover
- Natural Land Cover
- Water

Fire Regime Condition Class

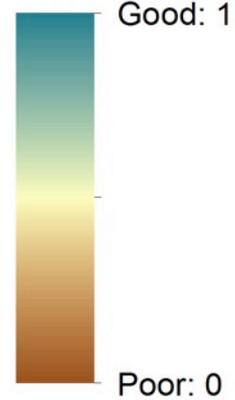


- Class I (minimal departure)
- Class II (moderate departure)
- Class III (high departure)
- Not Classified

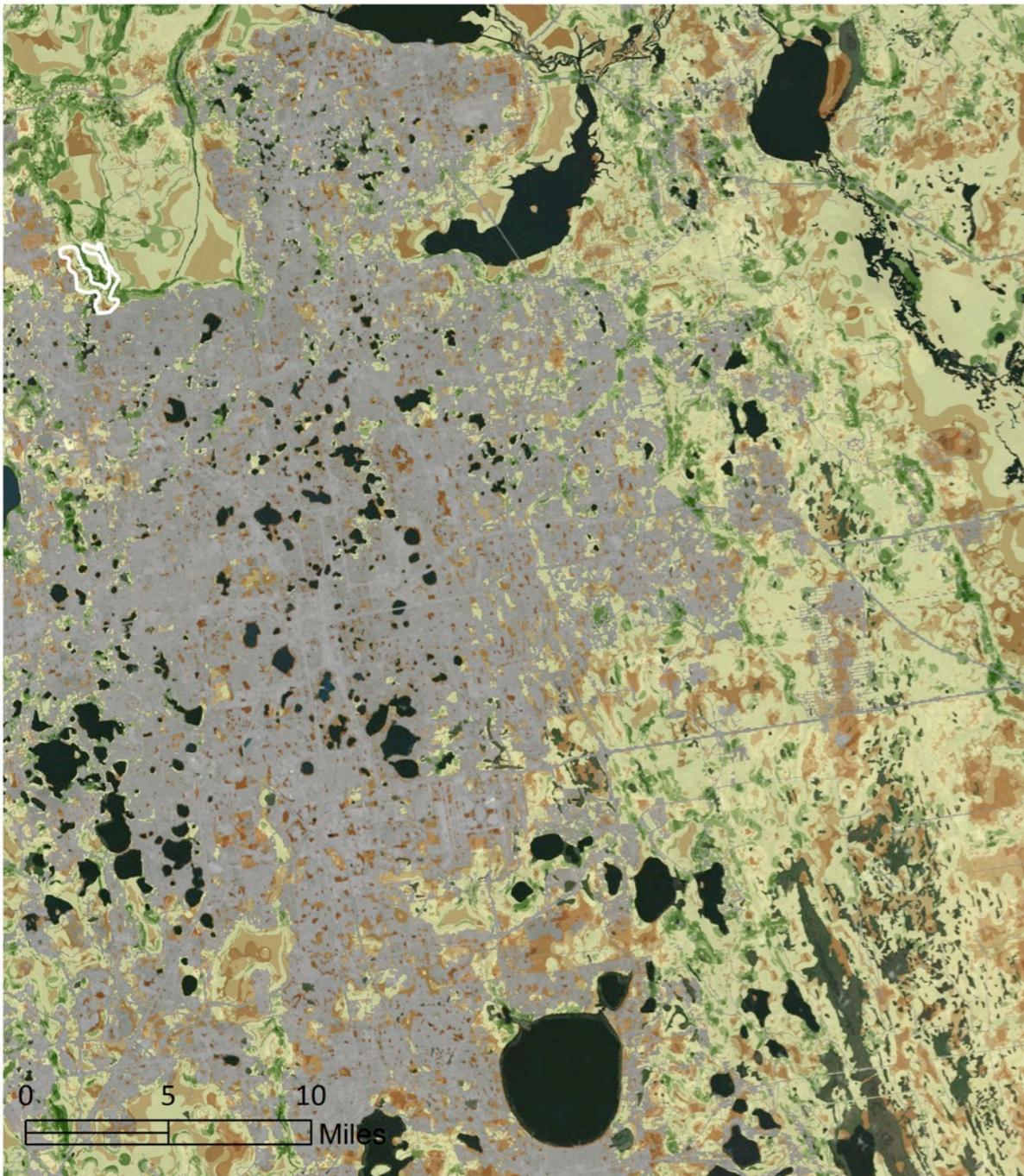


Landscape Condition

Landscape Condition

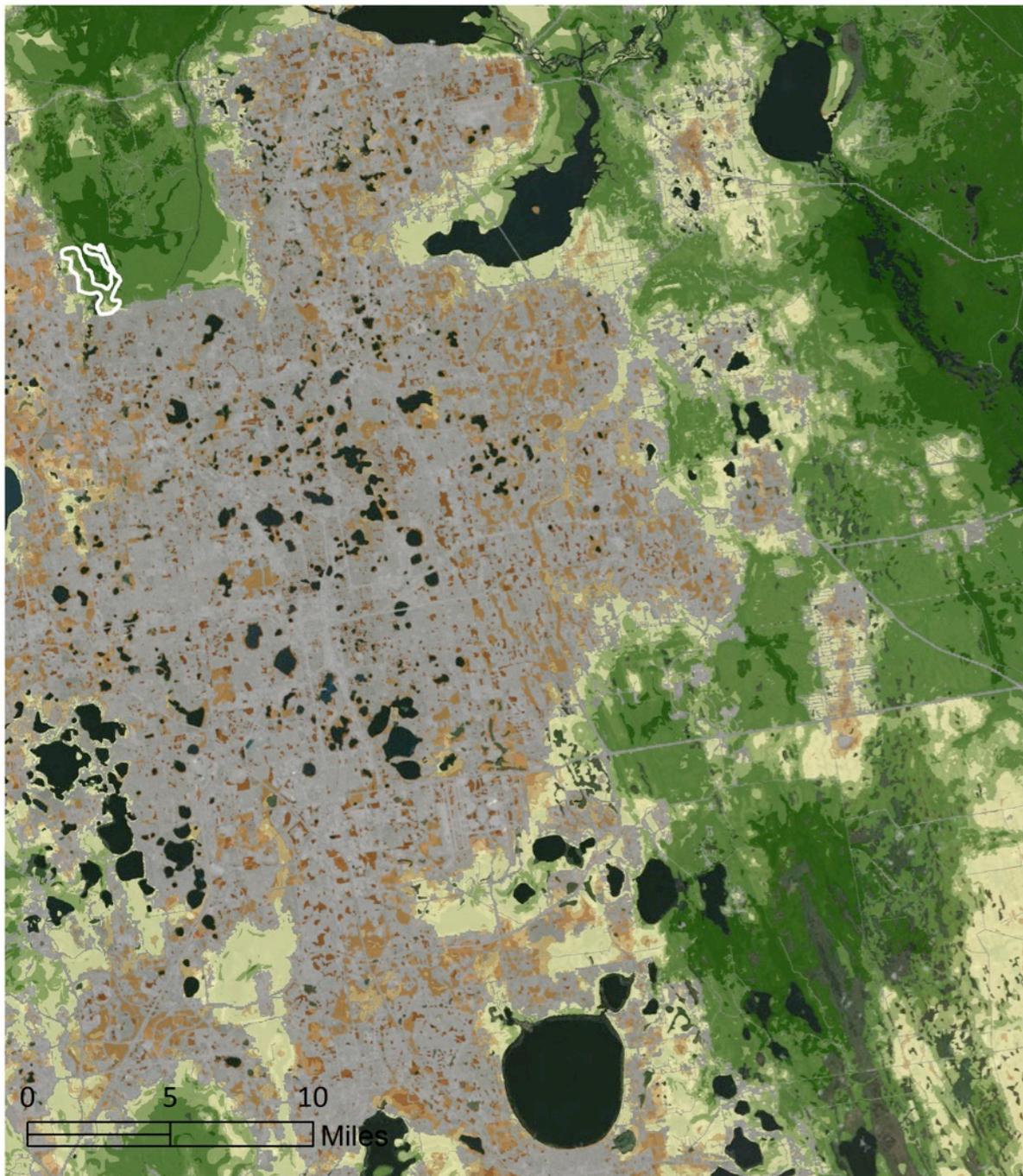


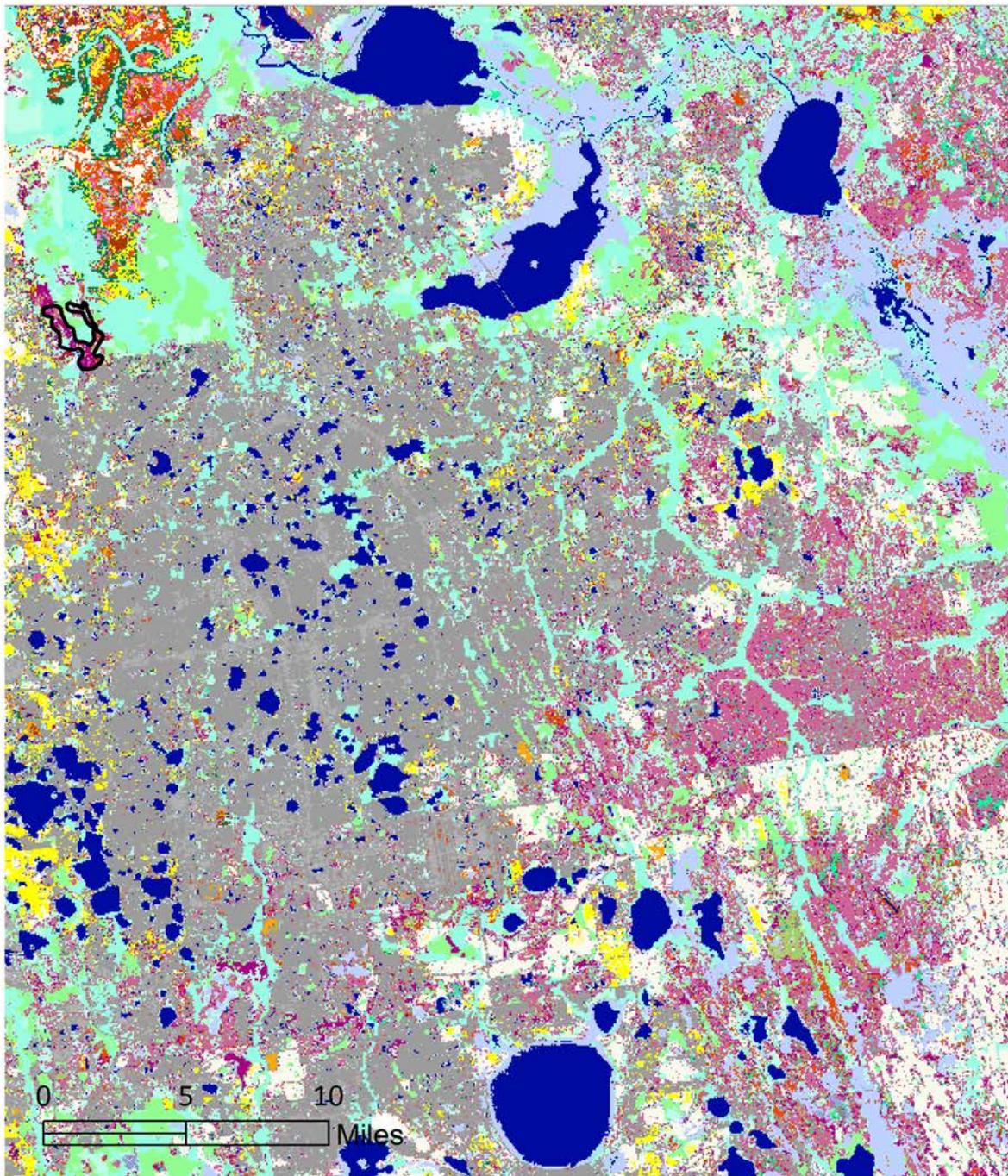
Terrestrial Resilience: Landscape Diversity



- Far Above Average (>2 SD)
- Above Average (1 SD to 2 SD)
- Slightly Above Avg (0.5 to 1 SD)
- Average (-0.5 to 0.5 SD)
- Slightly Below Avg (-0.5 to -1 SD)
- Below Average (-1 to -2 SD)
- Far Below Average (<-2 SD)
- Developed
- Water

Terrestrial Resilience: Local Connectedness





Human Use

- Agriculture - Cultivated Crops and Irrigated
- Agriculture - Pasture/Hay
- Developed
- Managed Tree Plantation

Open Pine

- Atlantic Coastal Plain Upland Longleaf Pine Woodland
- Central Florida Pine Flatwoods
- Florida Longleaf Pine Sandhill

Other Upland Forest

- Southern Coastal Plain Oak Dome and Hammock

Ruderal

- Non-Specific Disturbed
- Recently Logged or Burned
- Ruderal

Upland Grassland

- Florida Dry Prairie
- Florida Peninsula Inland Scrub

Water

- Open Water

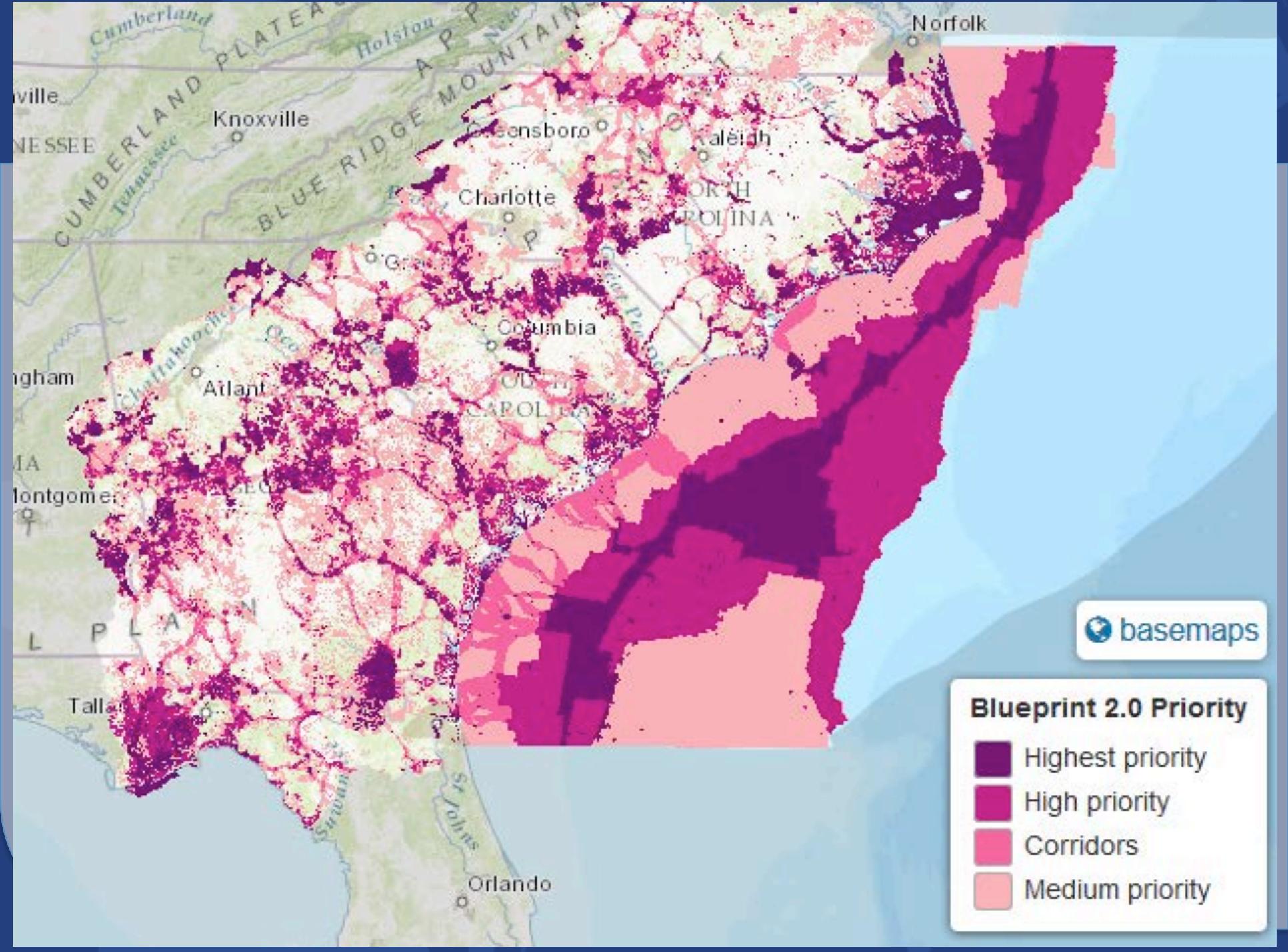
Wetland Forest

- East Gulf Coastal Plain Depression Pond
- S. Coastal Plain Blackwater River Floodplain Forest
- Southern Coastal Plain Hydric Hammock
- Southern Coastal Plain Nonriverine Basin Swamp
- Southern Coastal Plain Nonriverine Cypress Dome

Wetland Herbaceous

- Central Florida Wet Prairie and Herbaceous Seep
- Floridian Highlands Freshwater Marsh

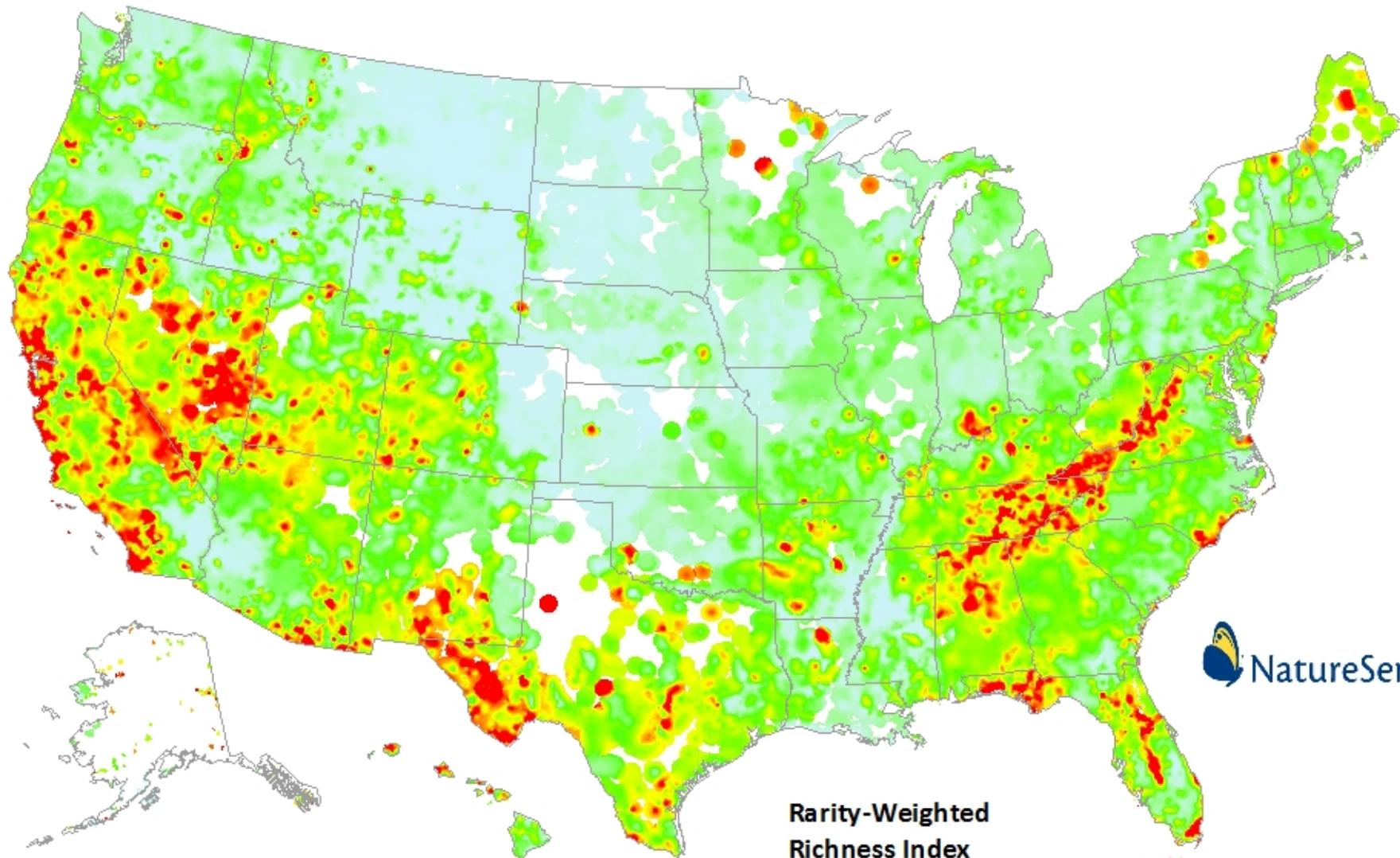




basemaps

Blueprint 2.0 Priority

-  Highest priority
-  High priority
-  Corridors
-  Medium priority



**Rarity-Weighted
Richness Index**



0 100 200 Miles

Source: NatureServe and its Natural Heritage member programs 2013
Produced by NatureServe, October 2013

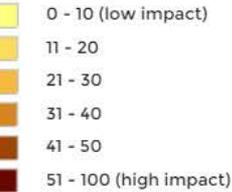
Next Steps

- Refine approach so that it can be used in target ecosystem (open pine)
- Develop generic approach that can be used in other ecosystems
- Publish simple to use manual and database so partners can easily implement a metrics based approach to measuring conservation value on their lands.

FAO Forest cover
 FAO Mangrove cover

Human Footprint

Human Footprint Score (2005)



Fire occurrence

- Agricultural expansion
- Dams, mines, and hydrocarbon wells
- Forest cover (Government reported)
- Mangrove cover (Government reported)

State

Response

Benefit

Step 2 Select scale

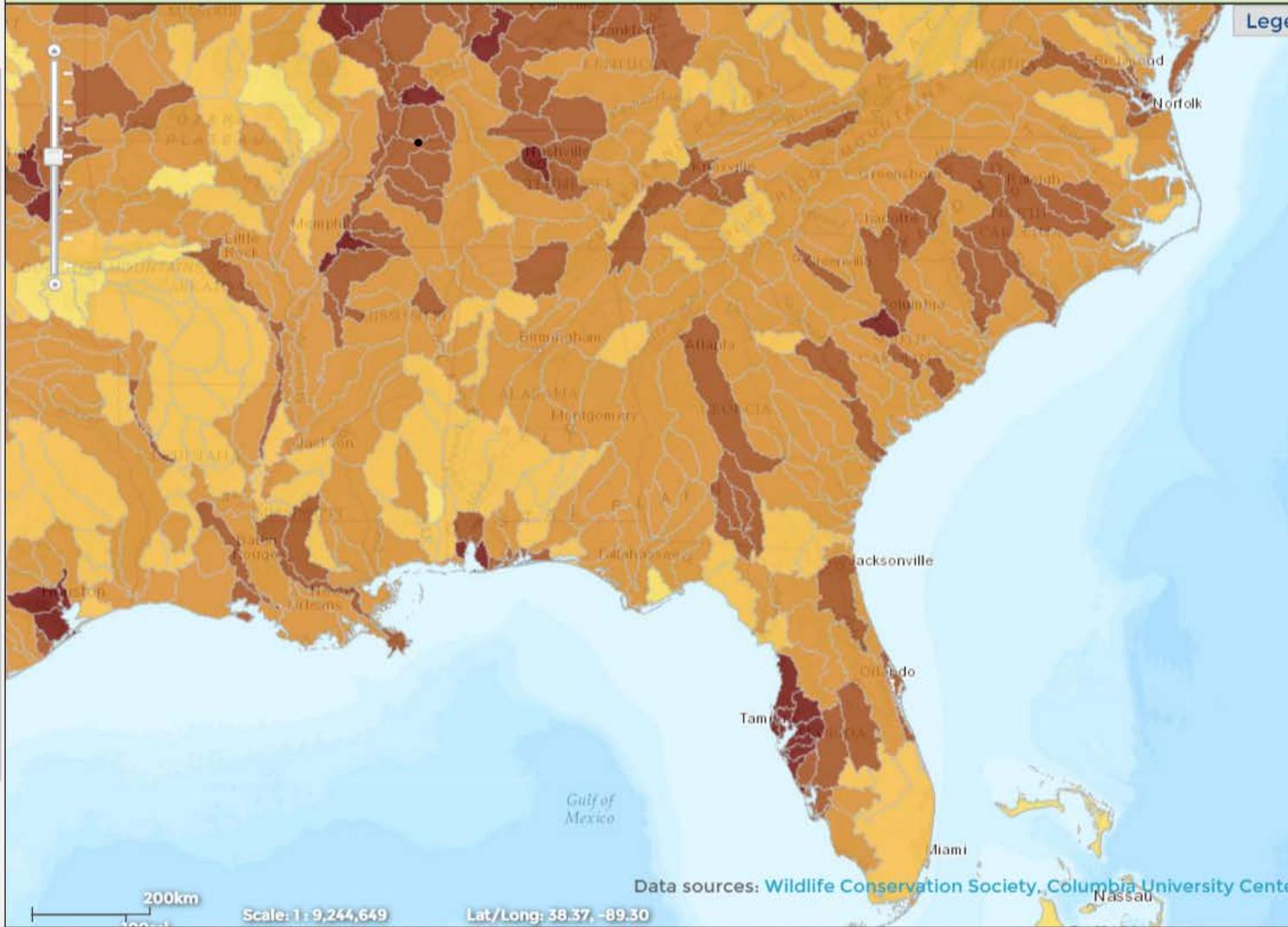
Site Basin Country Region

Step 3 Select data to display

Human Footprint Score

Reference Layers

- Focal region boundaries
- Country boundaries
- Basin boundaries
- Key Biodiversity Areas
- Terrestrial Protected Areas



SFI Biodiversity Indicators Dashboard:
 Visualize and communicate results of metrics over time



Thank you, SFI!

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