

Cultural resource indicators in the South Atlantic LCC

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Communications

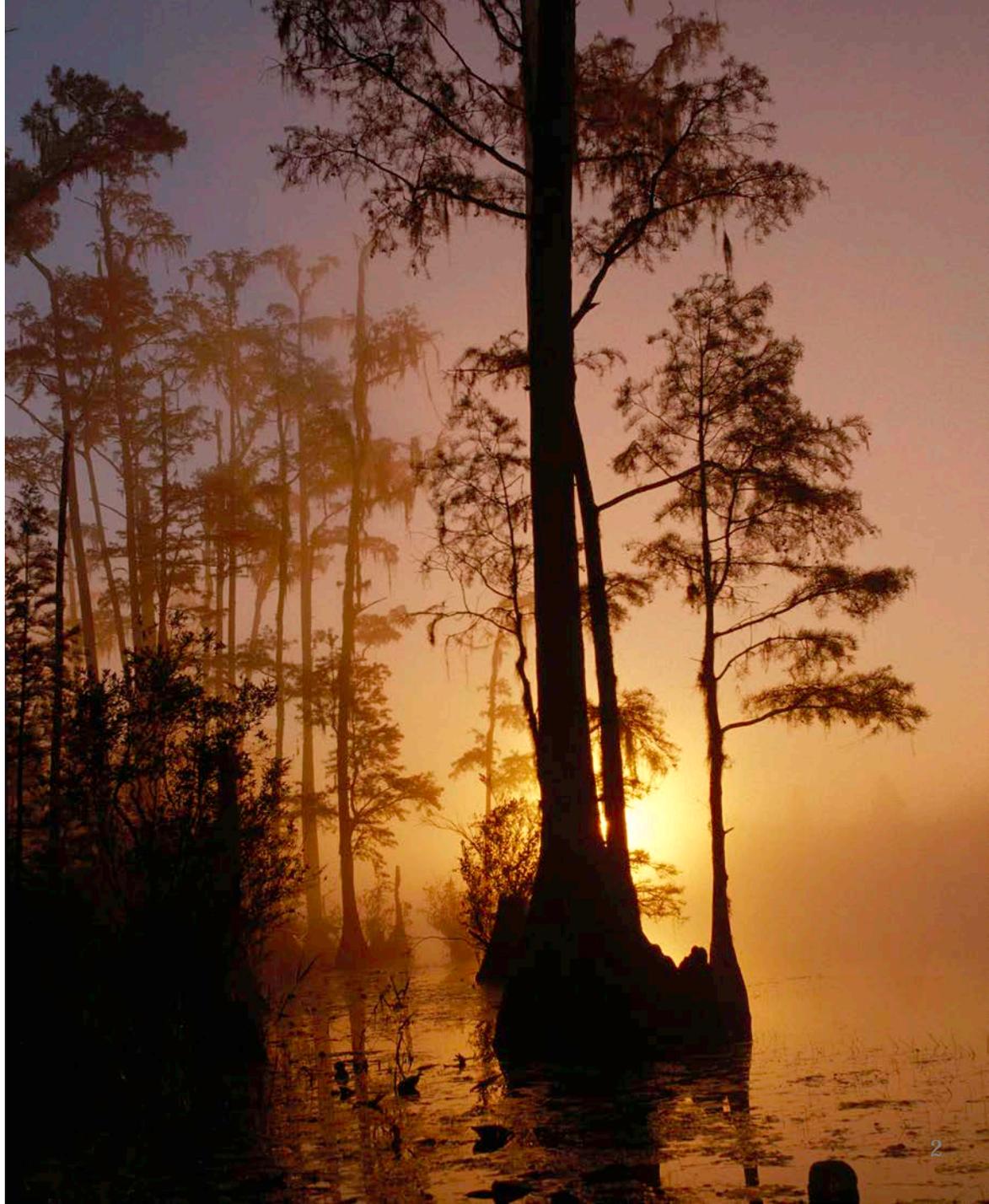
4-11-2018



SOUTH ATLANTIC
LANDSCAPE CONSERVATION COOPERATIVE

Outline

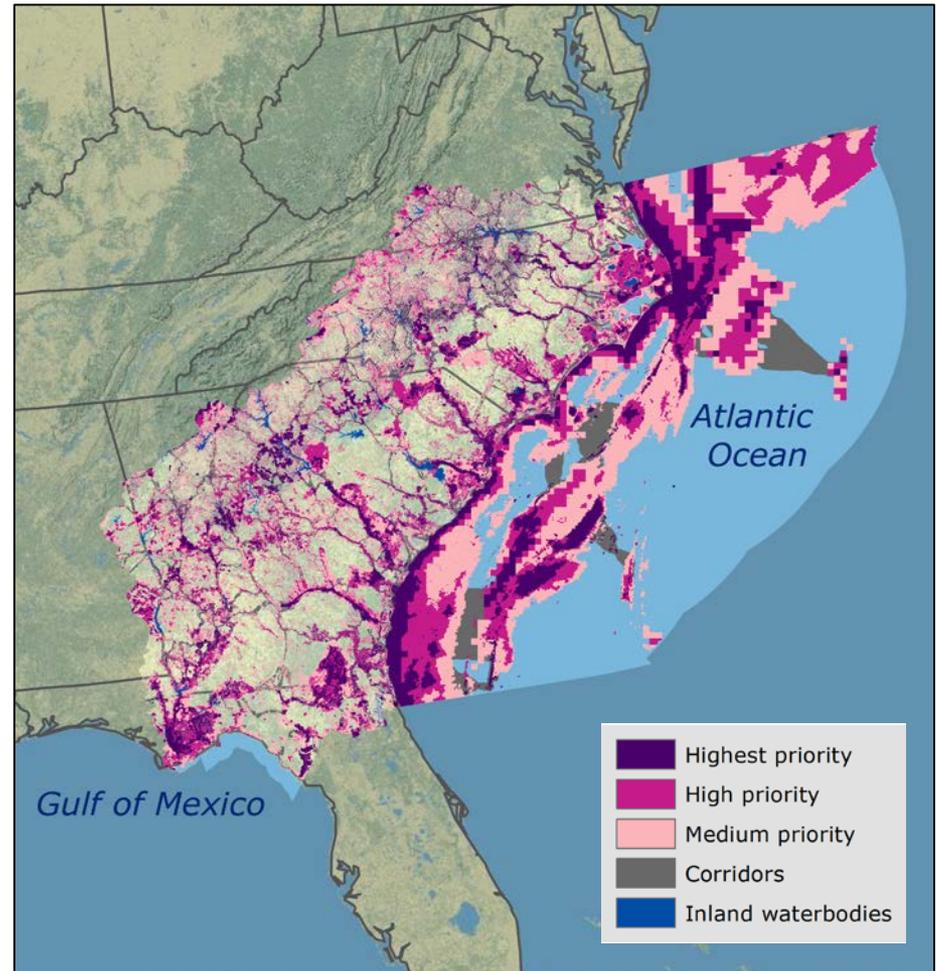
- Intro to South Atlantic LCC
- Our indicator process
- How we use indicators
- Indicators making an impact



What does the South Atlantic LCC do?

Our mission

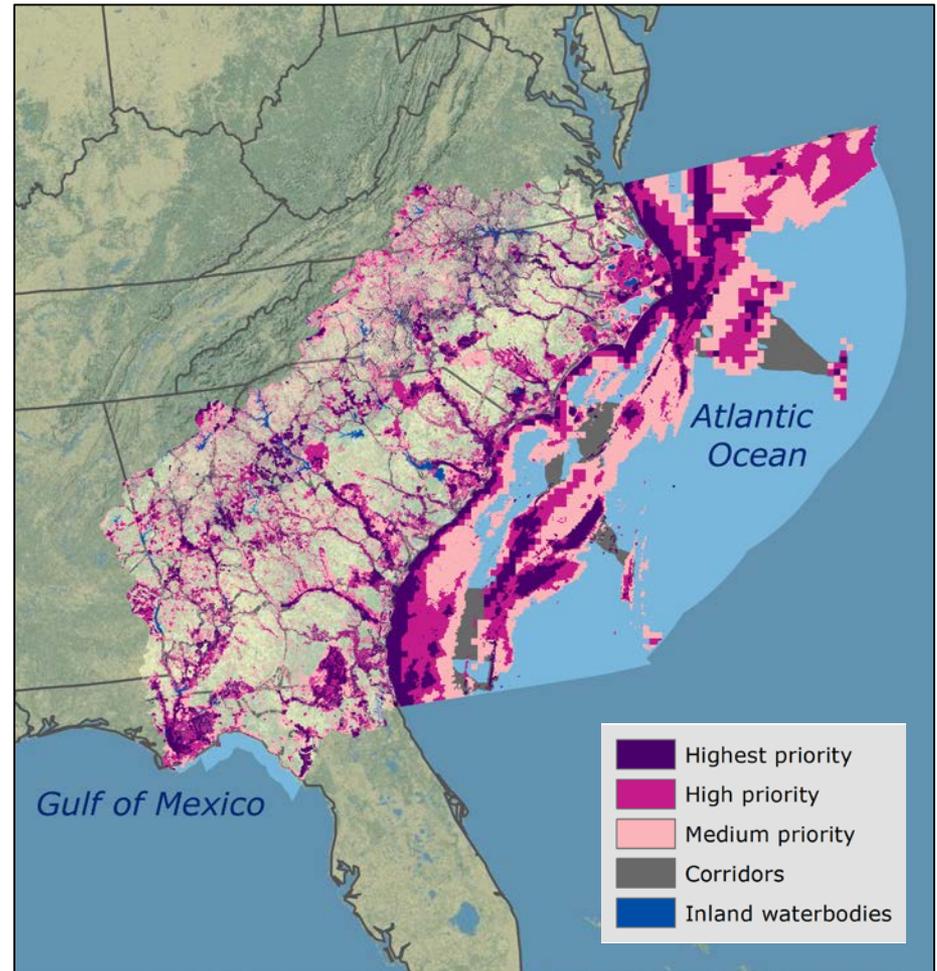
- To facilitate conservation actions that sustain natural and cultural resources, guided by a shared adaptive blueprint



What does the South Atlantic LCC do?

What is the Blueprint?

- A living spatial plan prioritizing opportunities for shared conservation action in the face of future change





Developing a Blueprint

- Indicators
- The State of the South Atlantic
- The Blueprint

Step 1: Collect input

- **Asked the broader web community what their cooperative should and should not do in the indicator process**

Step 2: Develop an indicator framework

- **Define key terms, objectives, timelines, and selection criteria.**

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Outlined how indicators would:
 - Be chosen for each of the region's marine, terrestrial, and freshwater ecosystems (~3 per system).
 - Reflect both natural and cultural resource components of ecosystem integrity.
 - Be selected according to explicit practical, ecological, and social criteria.

Step 2: Develop an indicator framework

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Outlined how indicators would:
 - Be chosen for each of the region's marine, terrestrial, and freshwater ecosystems (~3 per system).
 - Reflect both natural and cultural resource components of ecosystem integrity.
 - Be selected according to explicit practical, ecological, and social criteria. An indicator should:
 - Be easy to monitor and model across the entire South Atlantic geography using existing resources
 - Represent other aspects of a healthy ecosystem
 - If possible, resonate with the American public

Step 3: Develop a revision process

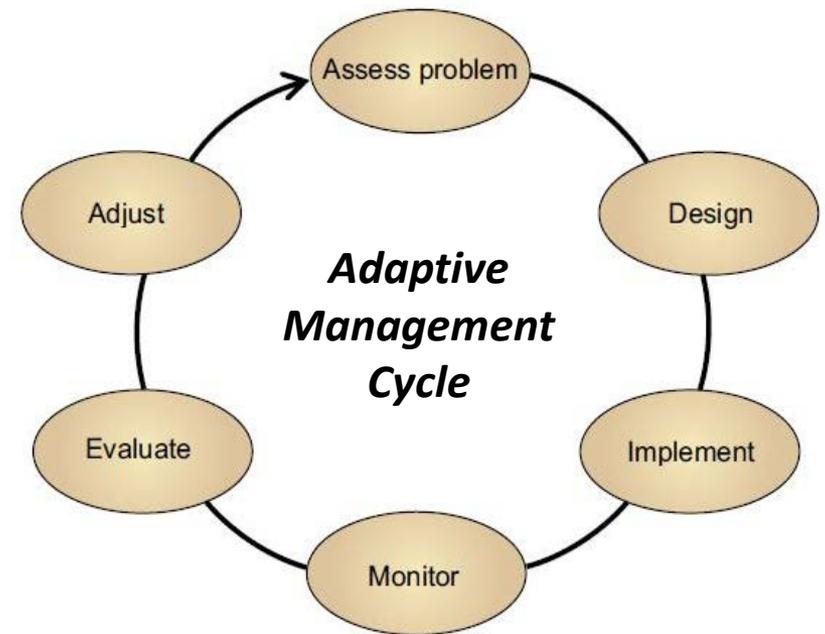
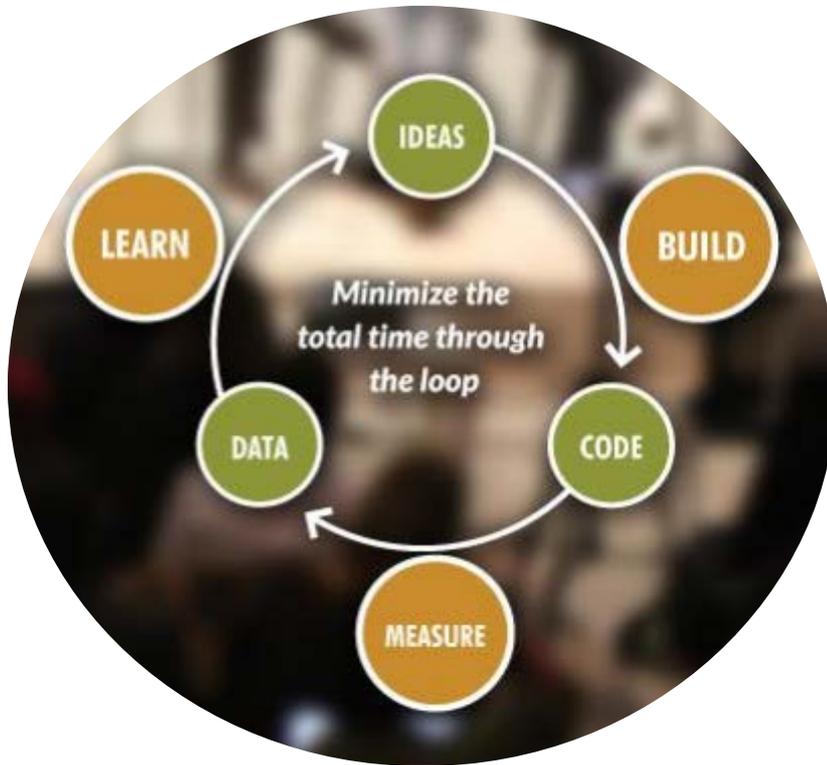
- **The first set of indicators will inevitably require tweaking.**

Step 3: Develop a revision process

- **The first set of indicators will inevitably require tweaking. Outlined:**
 - How to test the indicators to ensure they meet the selection criteria, replacing or improving any indicators that fail to satisfy the requirements

Step 3: Develop a revision process

The lean startup method



Step 4: Choose the first set of indicators

- **Start by compiling a list of indicators already identified in regional conservation plans, then fill in any gaps as necessary**

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*Attended Gullah
Geechee
Management
Plan roll-out
meeting*



*Met with the
Catawba Indian
Nation*

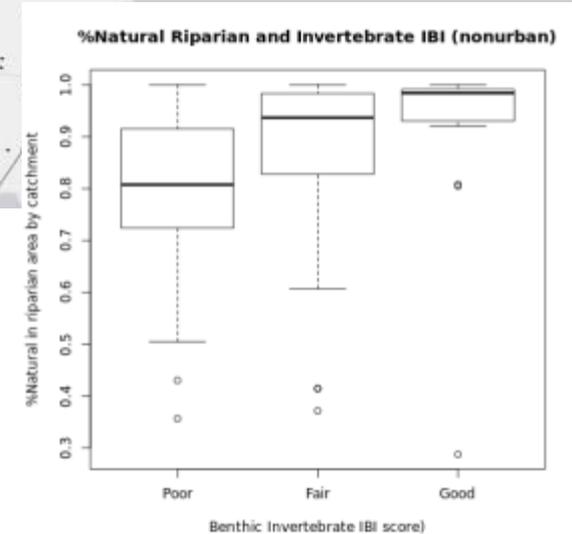
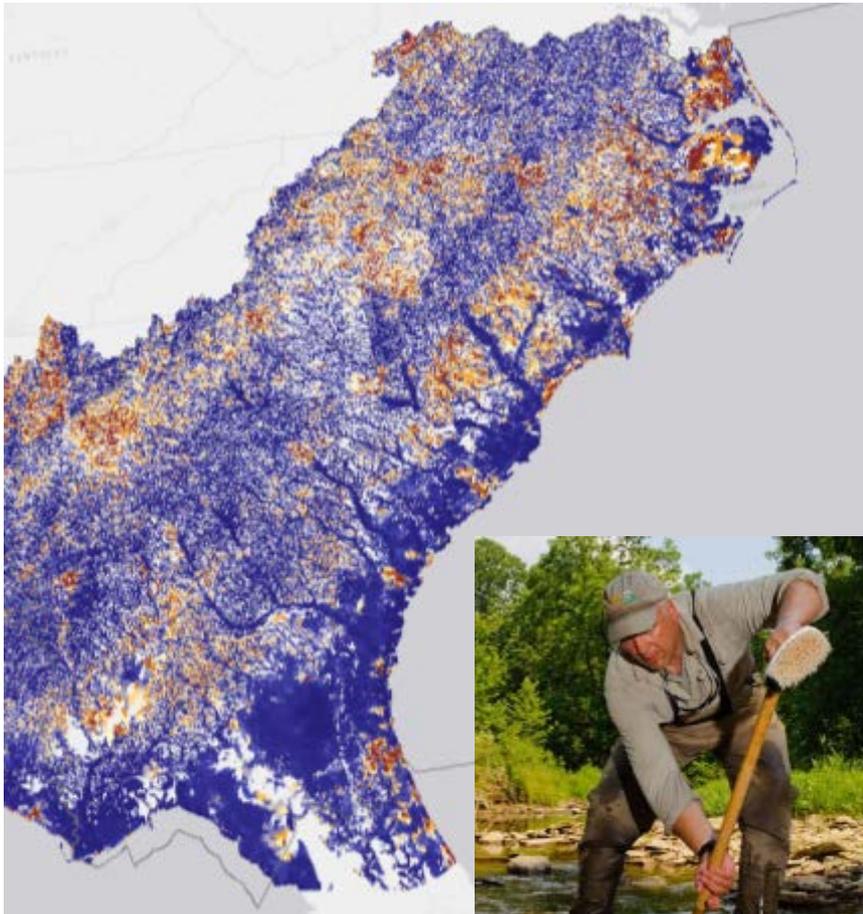


*Met with National
Park Service
Southeast Region
Cultural Resources
team*

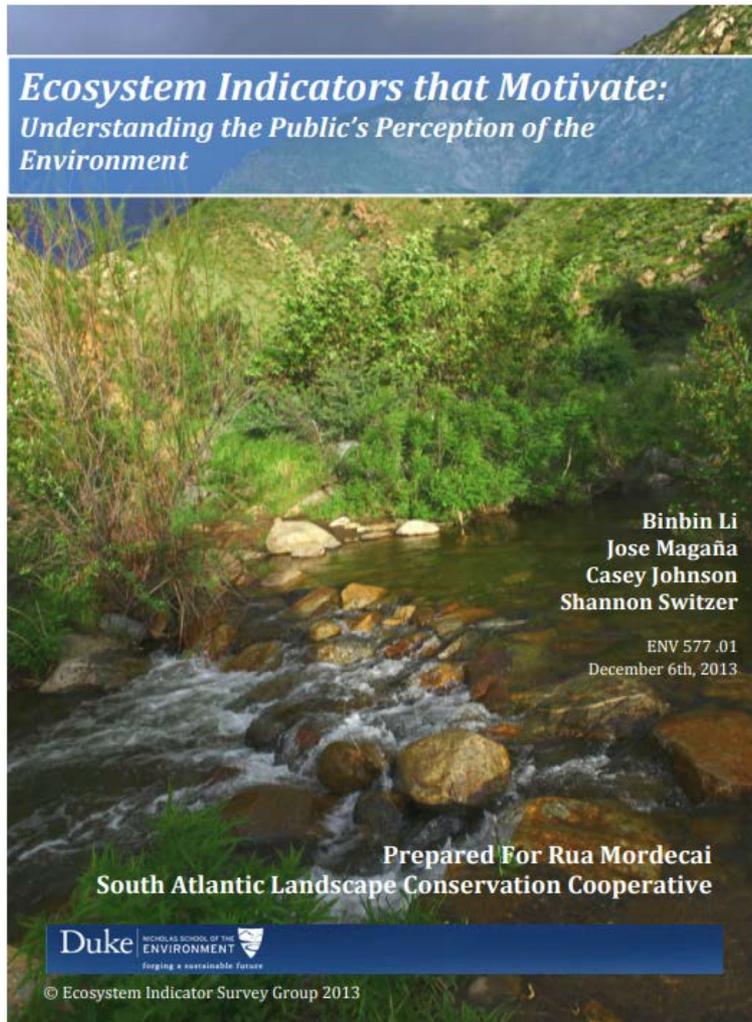


*Met with
Southeast State
Historic
Preservation
Office staff*

Step 5: Test, use, revise, repeat!



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Key findings

- Public had an overall positive feeling towards the environment; however, they did not rate it as a top priority
- Public reported air, water and deforestation as the most important environmental issues
- Respondents favored beach dune and ocean habitat over others
- More respondents preferred broader ecosystem protection to individual species protection

Indicators

Ecosystem-specific indicators

 Upland hardwood

 Pine & prairie

 Forested wetland

 Freshwater marsh

 Estuarine

 Maritime forest

 Beach & dune

 Marine

- **Marine mammals:** index of dolphin and whale density based on monthly predictions.
- **Marine birds:** index of relative abundance for birds that feed exclusively or mainly at sea, based on seasonal predictions.
- **Potential hardbottom condition:** index of potential condition of deepwater corals, solid substrate, and rocky outcroppings.



Indicators

Cross-ecosystem indicators



Freshwater aquatic



Waterscapes



Landscapes

- **Structural connectivity:** important hubs and corridors for ecological connectivity.
- **Low road density:** index of areas with few roads.
- **Resilient biodiversity hotspots:** index of mostly natural high-diversity areas potentially resilient to climate change.
- **Low-urban historic landscapes:** index of sites on the National Register of Historic Places surrounded by limited urban development.



Who's involved?



Who's involved?



The State of the South Atlantic



State of the South Atlantic 2015

Understanding our living landscapes



State of the South Atlantic

The State of the South Atlantic



South Atlantic ecosystem health scores

Overall, the South Atlantic scored a C. Piedmont areas scored the lowest, likely due to impacts from their major urban megaregions. The Marine region scored the highest; however, it did not include fishing impacts. The Coastal Plain scores were in the middle. These scores show that, while the South Atlantic is not completely healthy, there's hope for making future improvements.

North Piedmont: D Home to Charlotte, Raleigh, and large areas of upland hardwood forest. People who live and work in urban areas will help decide the future of this region.

South Piedmont: D Home to Atlanta and diverse watersheds draining into the Atlantic and Gulf. Balancing water needs for people and species continues to be a challenge.

North Coastal Plain: C Home to the Outer Banks and extensive estuaries. Sea-level rise is predicted to heavily impact this particularly flat region.

Central Coastal Plain: C Home to Wilmington, Myrtle Beach, and large protected wetland areas. Sea-level rise, tourism, and changing agricultural practices continue to influence ecosystem health.



South Coastal Plain: C Home to Savannah, Jacksonville, and a network of protected barrier islands. Partnerships are working to conserve this region's largest river floodplains.

Gulf Coastal Plain: C Home to rural Southwest Georgia and extensive conservation lands in the Big Bend of Florida. Sea-level rise and upstream agriculture continue to impact coastal protected areas.

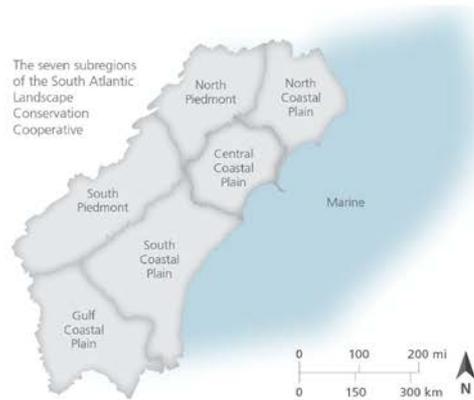
Marine: B+ Home to rich fisheries, deepwater coral, diverse seabirds, and important migratory fish, whales, and turtles. Ocean acidification and increased energy development are major emerging threats.

A snapshot in time

This assessment evaluates the ecological integrity of the South Atlantic using natural and cultural resource indicators. The indicators are scored across the entire region, for individual ecosystems, and within subregions following watershed and ecoregional boundaries. All indicators are regularly tested and revised, and this first report uses the best metrics available today.

Toward conservation action

Measuring these indicators communicates the status of the region's land and waters, helping develop a more unified vision for thriving ecosystems that support communities and economies. People and organizations are working together on cross-boundary conservation actions through the South Atlantic LCC to improve ecosystem health in the face of unprecedented changes to the natural world.



Scoring & level of confidence

Each data-driven indicator score is based on the percent of an area in good condition, according to the best available science. Though all indicators were measured, some scores were omitted to provide a baseline for future comparison. Confidence values are qualitative estimates of uncertainty based on known issues with indicators and data sources.

- A** 100-80% in good condition
- B** 79-60% in good condition
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- F** 19-0% in good condition
- O** Not scored, baseline for future



ECOSYSTEM forested wetland

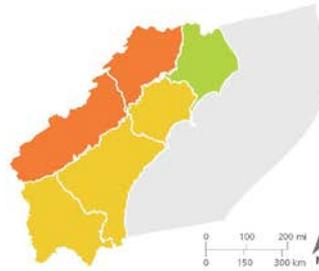


Floodplain forests, pocosins, & bays

These frequently flooded swamp forests occur across the region on both organic soils, like peatland pocosins and Carolina Bays, and mineral soils, like bottomland hardwood and floodplain forests. Though historically drained for timber production and agriculture, intact forested wetlands support ecological diversity and enhance water quality by filtering polluted runoff.

Interpreting the score

Overall, this ecosystem scored a C. Piedmont areas scored the lowest, mostly driven by poor scores on low road density, the bird index, and aquatic connectivity. The North Coastal Plain scored the highest, mostly driven by better scores on low road density and aquatic connectivity. These results underscore the importance of efforts to restore the altered hydrology of forested wetlands in the South Atlantic.



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- O** Forested wetland extent
- B-** Forested wetland birds
- O** Forested wetland amphibians
- D** Low road density
- A** Low-urban historic landscapes
- C** Structural connectivity
- O** Resilient biodiversity hotspots
- D** Fresh & saltwater connectivity
- D** Resident fish connectivity



- Floodplain forests
- Pocosin wetlands
- Forest birds and waterfowl
- Large mammals
- Native cane
- Temporal flooding
- Saltwater intrusion

Restoring ancient soils

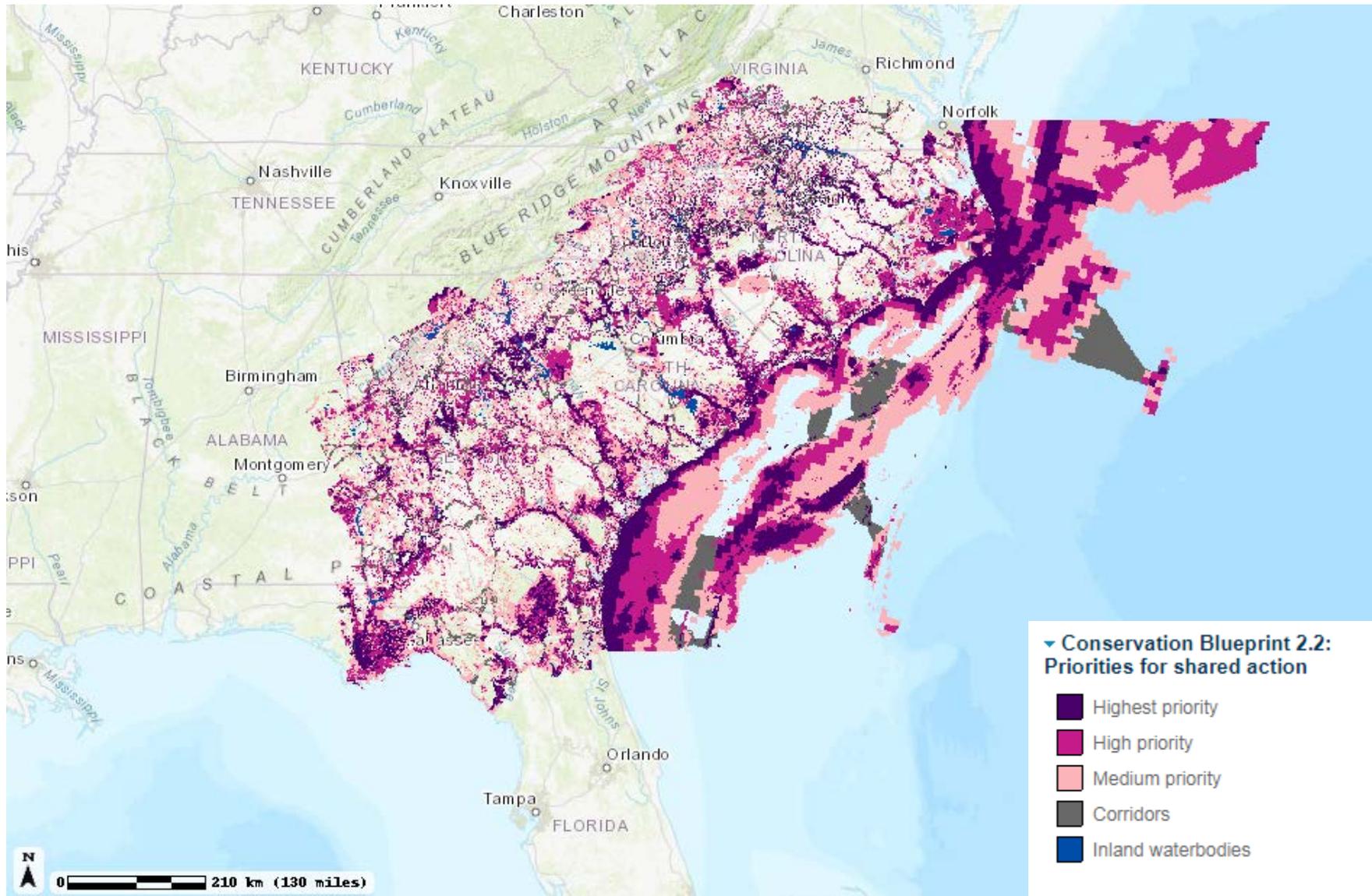
Thirty years ago, the Eastern North Carolina wetlands that now comprise Pocosin Lakes National Wildlife Refuge were drained for peat mining and agriculture. Catastrophic wildfires burned away feet of the resulting dry organic soil. The Refuge has since restored natural hydrology on nearly 30,000 acres, improving habitat quality, protecting against future fires, and sequestering carbon by rebuilding the soil.



Steve Hillebrand/U.S. Fish and Wildlife Service

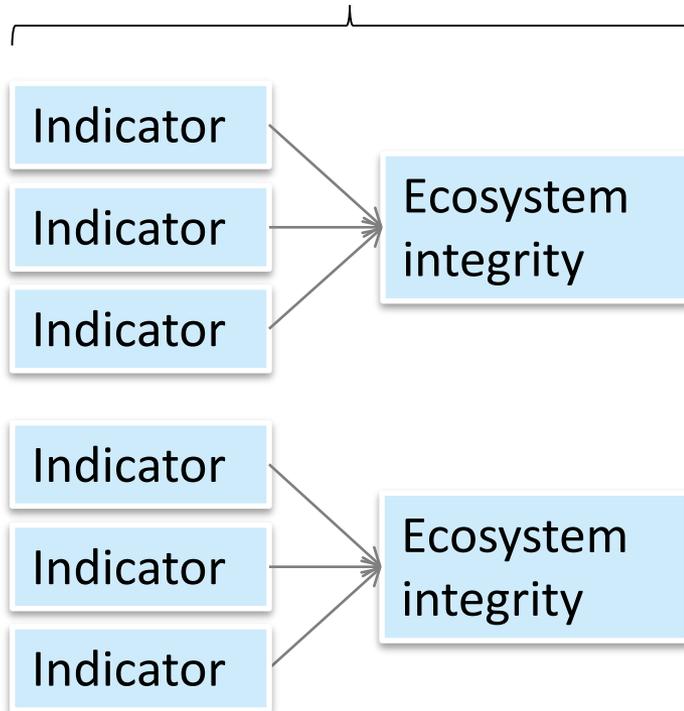
The State of the South Atlantic

Conservation Blueprint Version 2.2



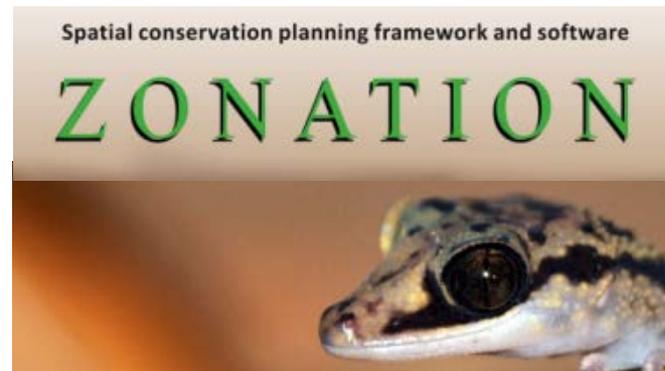
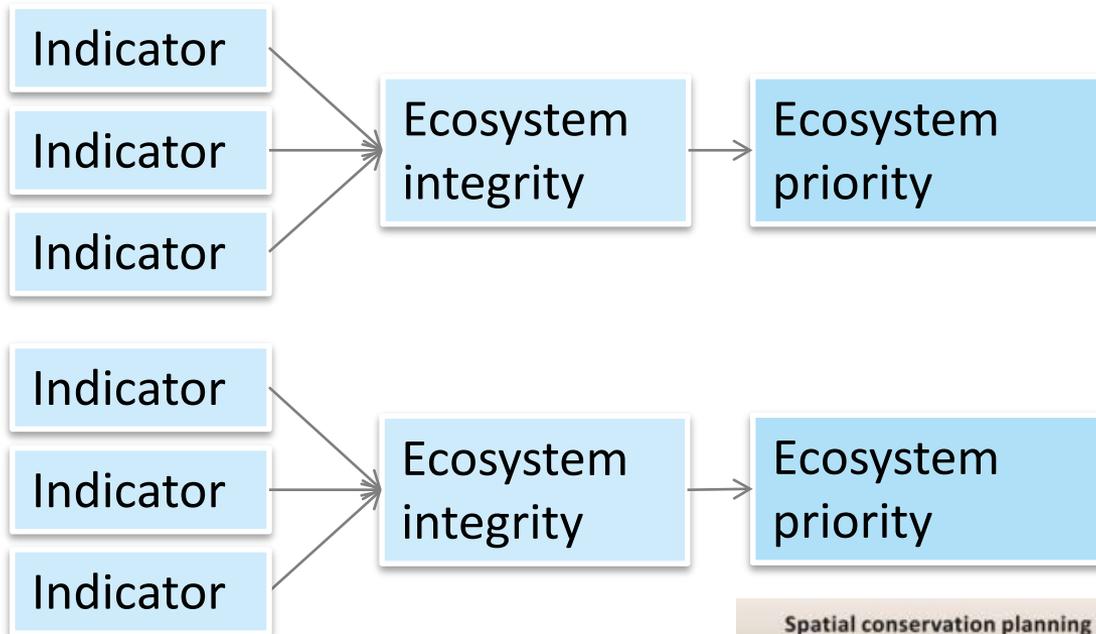
Blueprint 2.2

State of the South Atlantic

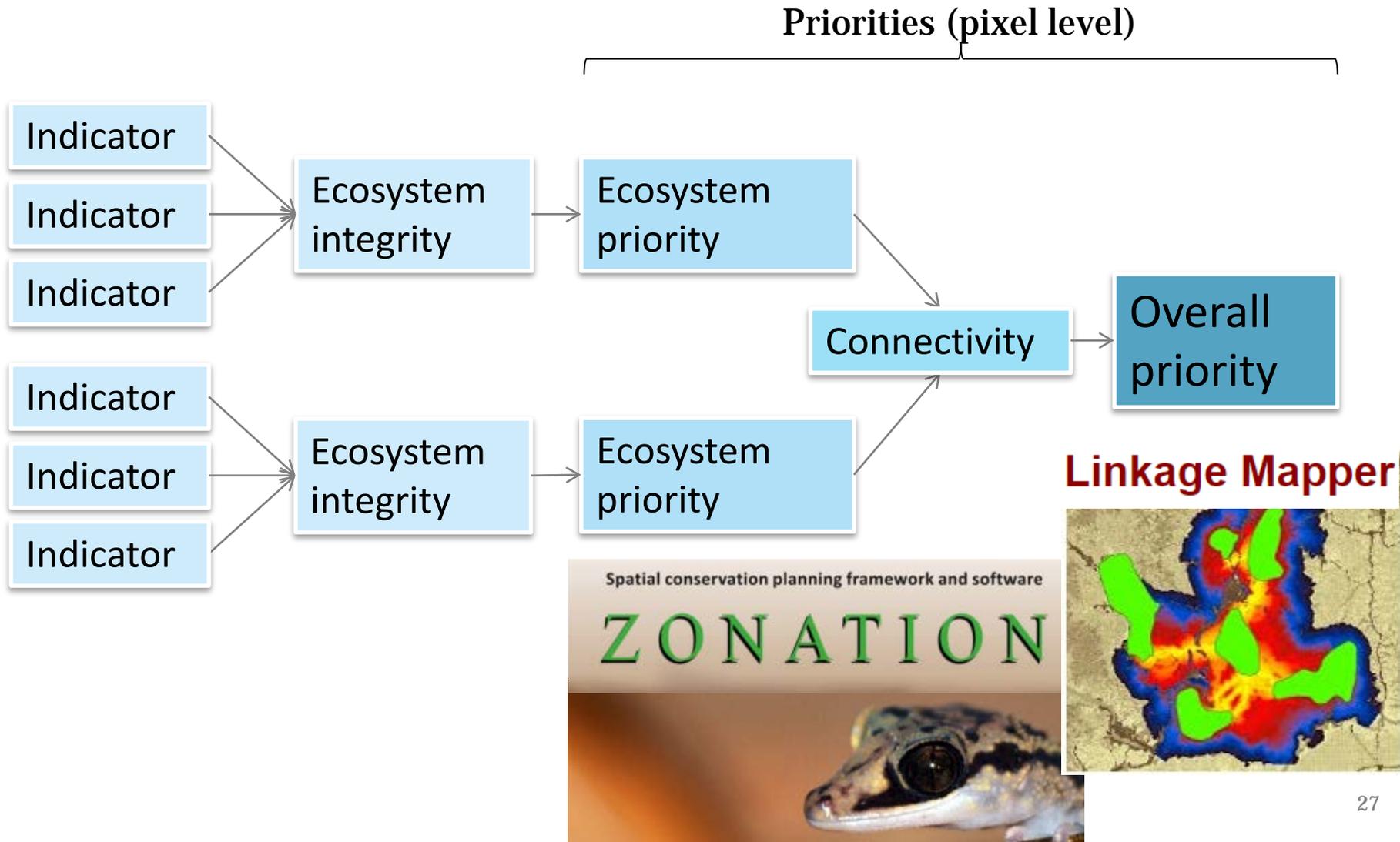


Blueprint 2.2

Priorities (pixel level)



Blueprint 2.2



Accessing data

The Conservation Planning Atlas

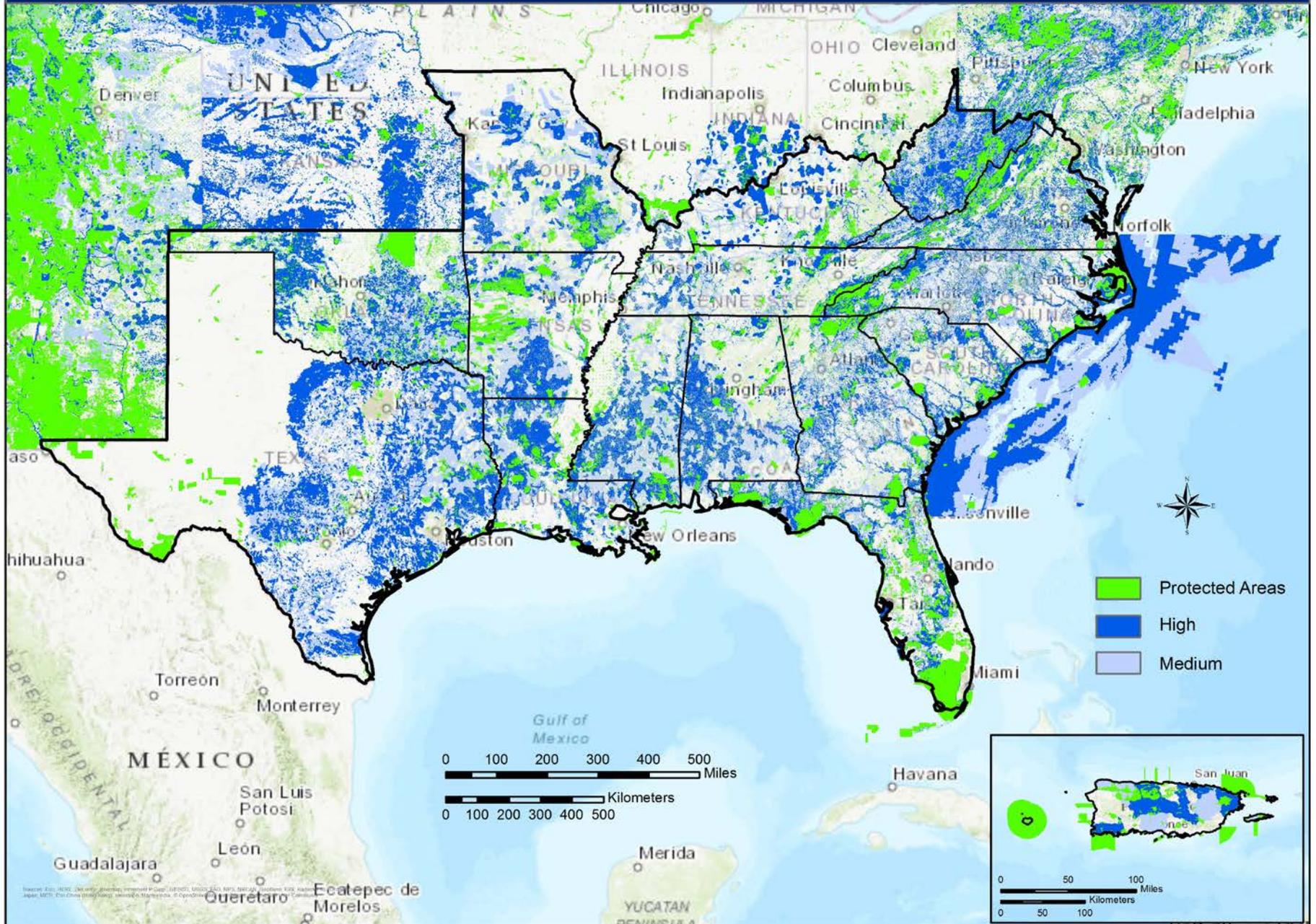
- <http://salcc.databasin.org>

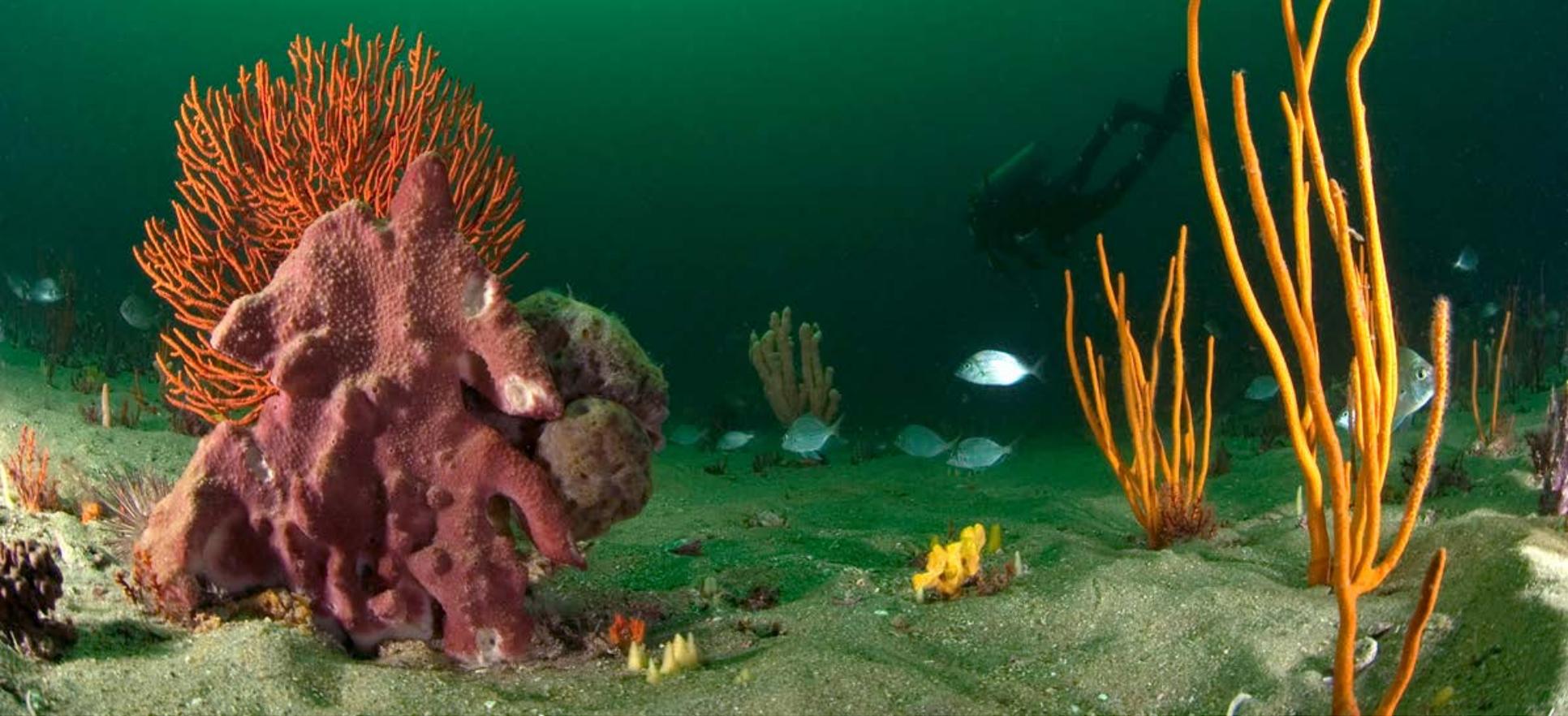


Recommended Items



The Blueprint for SECAS - The Southeast Conservation Adaptation Strategy (Version 2.0 with Protected Areas)





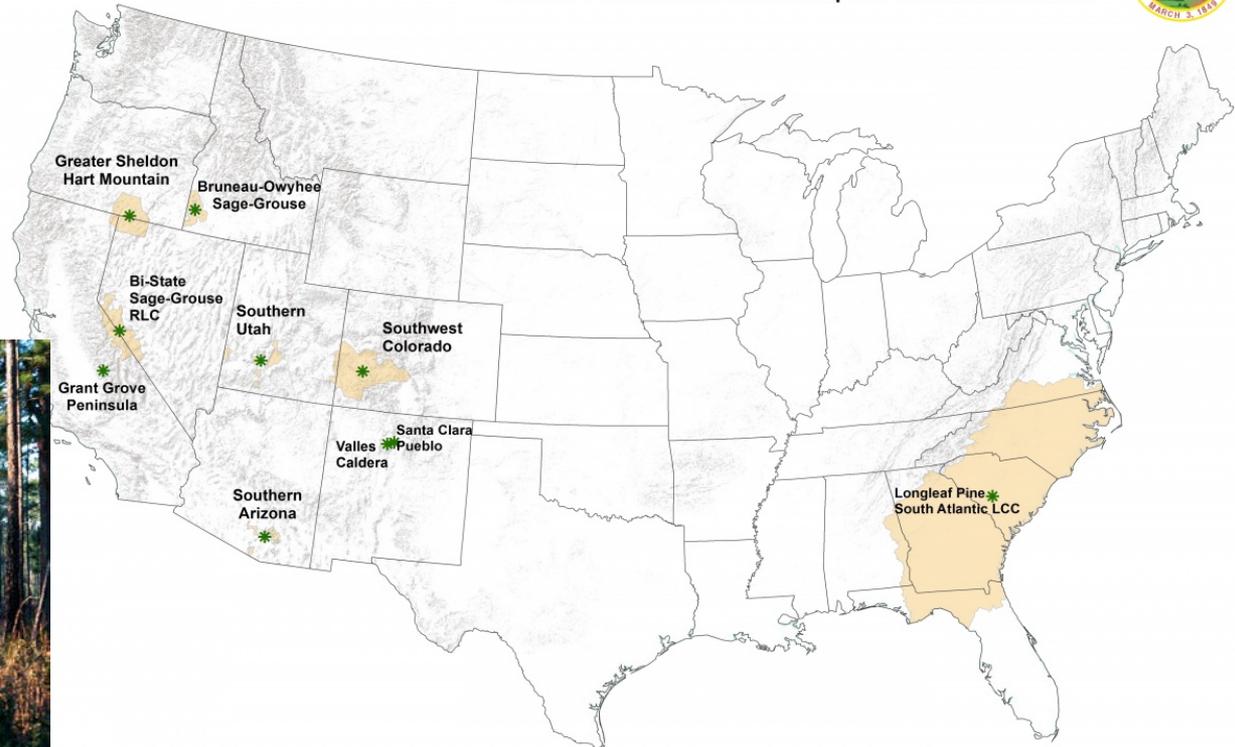
Indicators making an impact

Using the indicators to improve ecosystem integrity

- Helping bring in new resources for conservation in South Atlantic



Department of the Interior
2015 Resilient Landscapes Collaboratives



Legend

- * Resilient Landscapes Collaboratives
- Collaborative Area



Map Produced by OWF
May 26, 2015





Questions?



Measuring conservation actions

Pine & Prairie Indicators

Pine & prairie birds



Regularly burned habitat



Low road density



Measuring conservation actions

Pine & Prairie Indicators

Indicators scores

Pine & prairie birds



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Impacts of prescribed fire

Previous condition

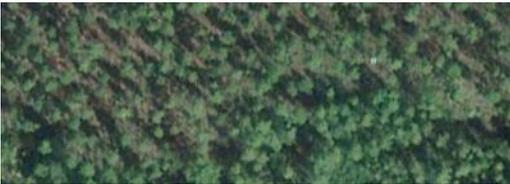
Pine & prairie birds



Regularly burned habitat



Low road density



Impacts of prescribed fire

Previous condition

Predicted after fire

Pine & prairie birds



Pine & prairie birds



Regularly burned habitat



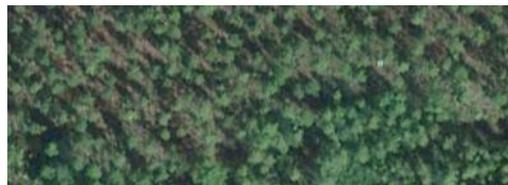
Regularly burned habitat



Low road density



Low road density



Impacts of prescribed fire

Previous condition

Predicted after fire

Predicted without fire

Pine & prairie birds



Pine & prairie birds



Pine & prairie birds



Regularly burned habitat



Regularly burned habitat



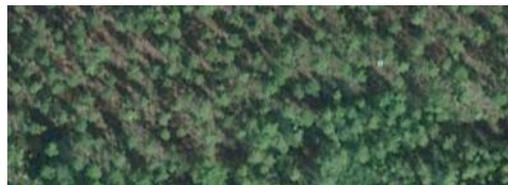
Regularly burned habitat



Low road density



Low road density



Low road density



Connecting actions and indicators

Previous condition



Predicted after fire



Predicted without fire

