The South Atlantic LCC Conservation Blueprint

Hilary Morris, Blueprint User Support & Communications

SOUTH ATLANTIC
LANDSCAPE CONSERVATION COOPERATIVE

LANDSCAPE CONSERVATION COOPERATIVES

Outline

- Introduction to the South Atlantic LCC
- What is the Blueprint?
- Indicators and the State of the South Atlantic
- Progress on Version 1.0
- Plans for Version 2.0
- How you can get involved!

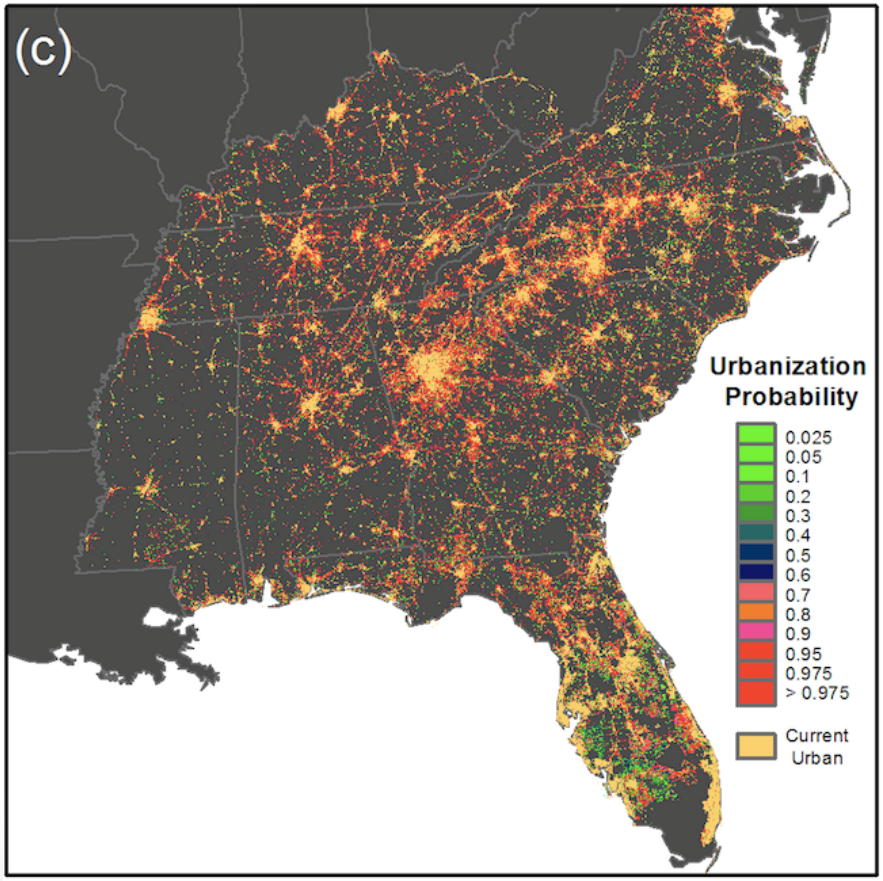
What is the South Atlantic LCC?

A **forum** in which federal and state agencies, non-profits, businesses and communities work together to develop a **shared vision** of landscape sustainability,

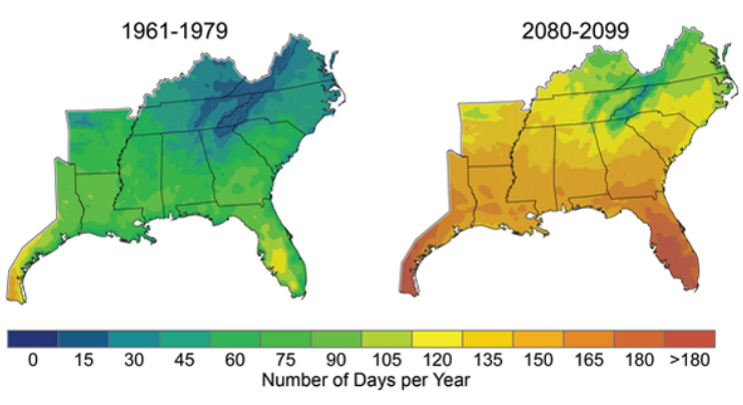
cooperate in its implementation,

and **collaborate** in its refinement.

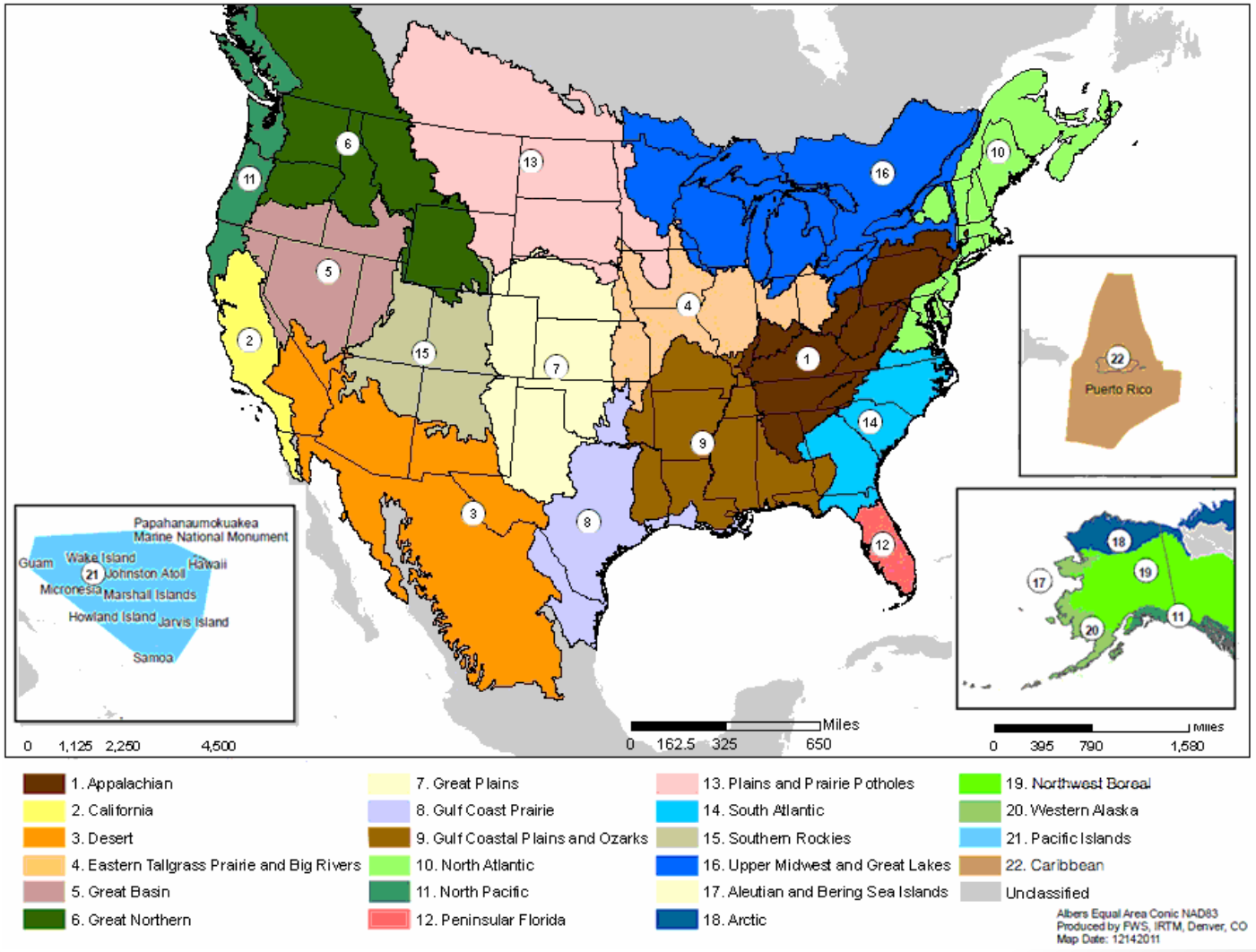
Why cooperate?



Days per year with peak temperature over 90° F



Part of a larger network



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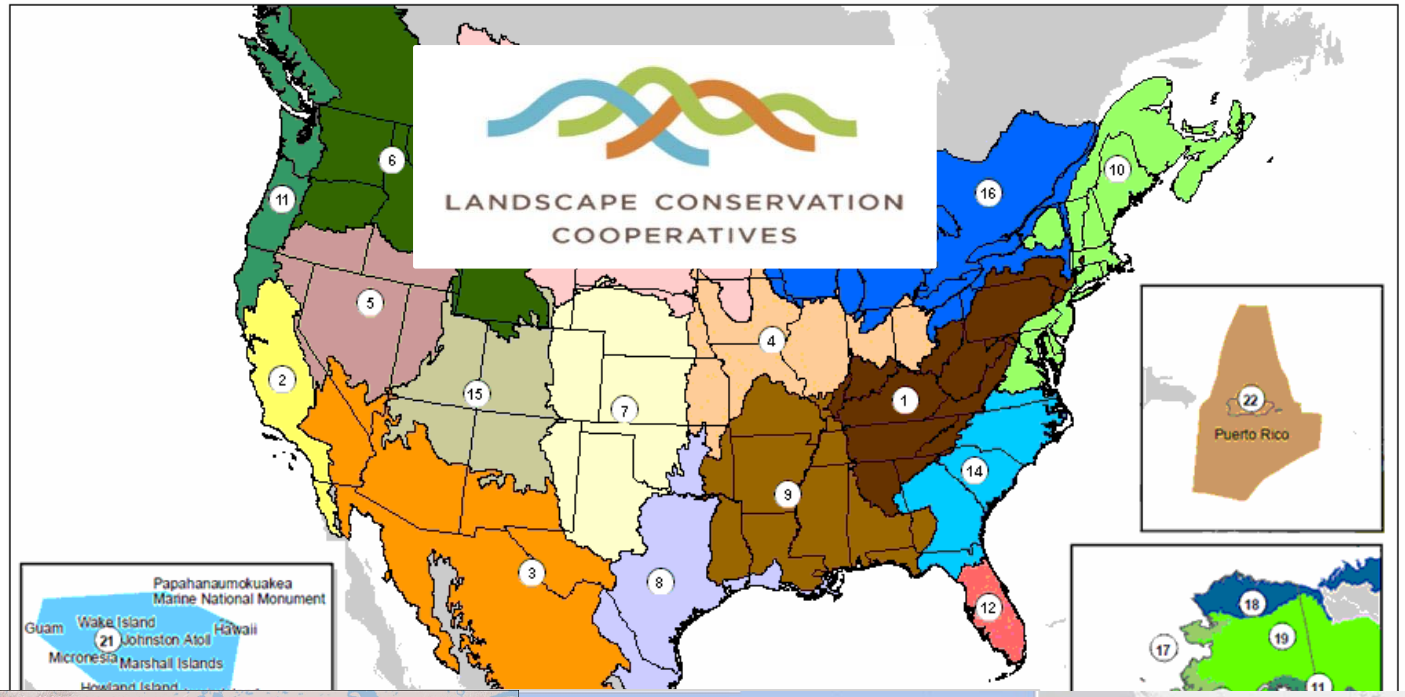
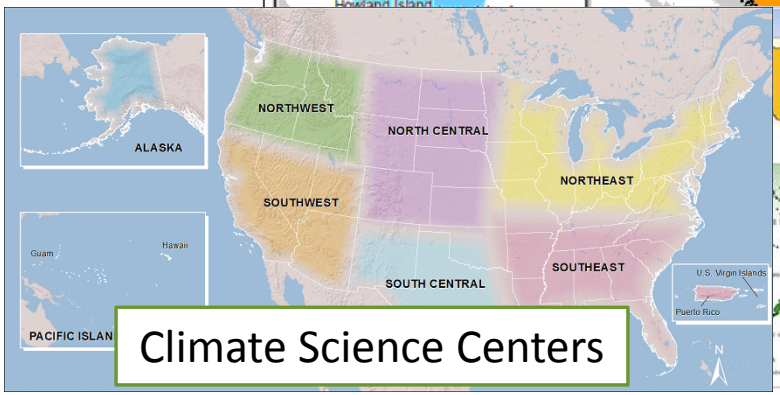
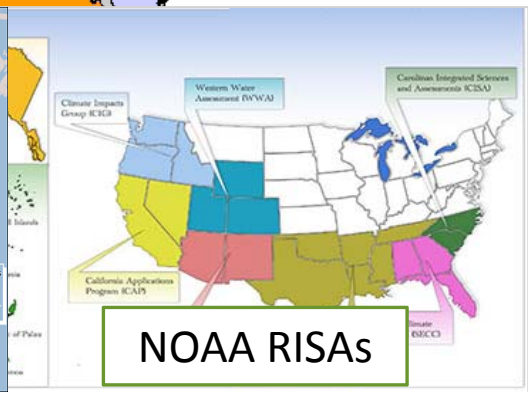
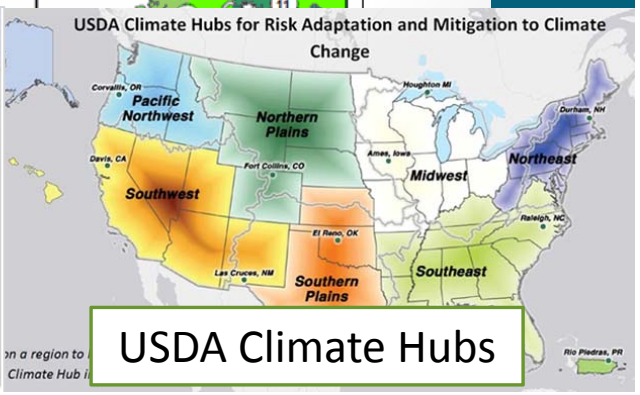




Climate Science Centers



NOAA RISAs

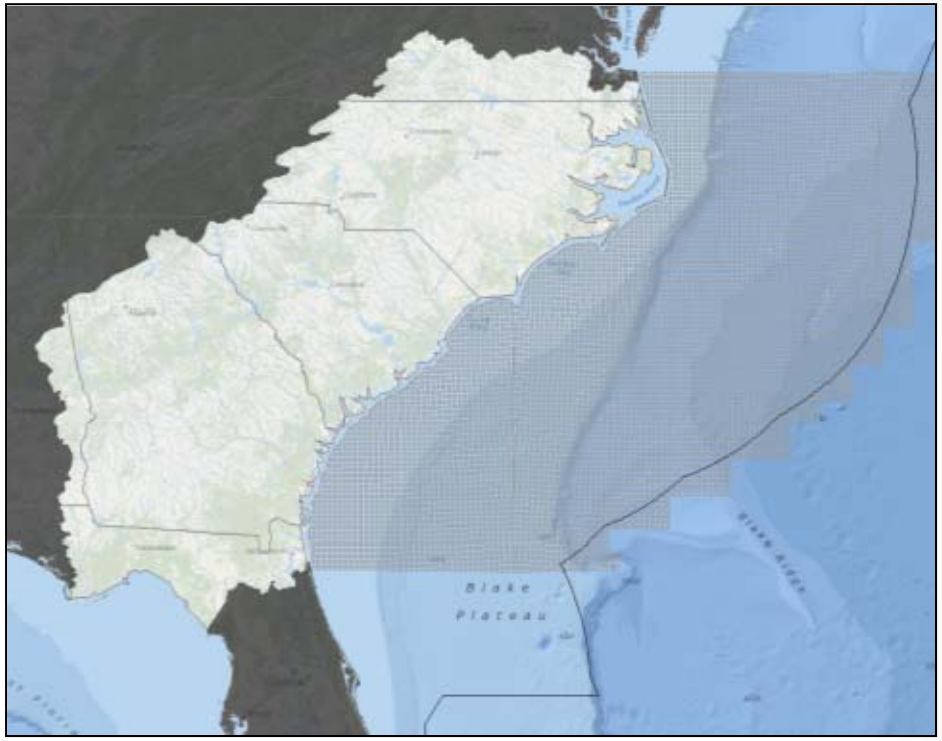


USDA Climate Hubs

The Steering Committee

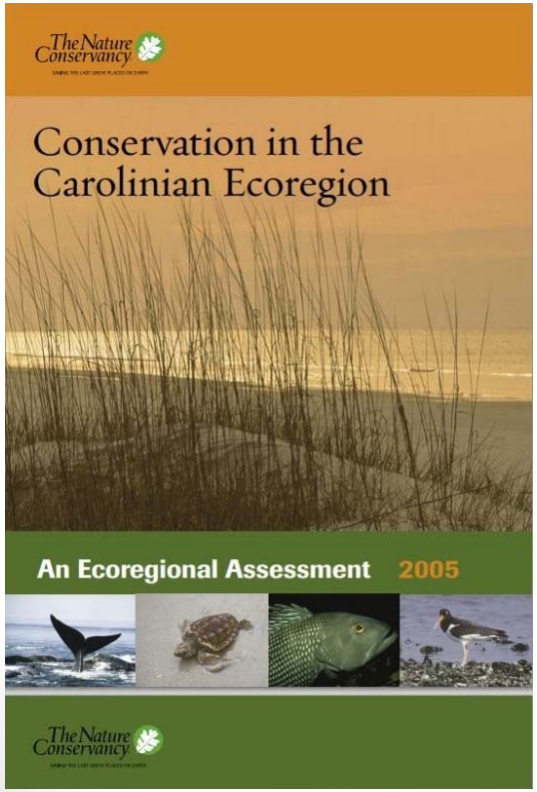
What does the South Atlantic LCC do?

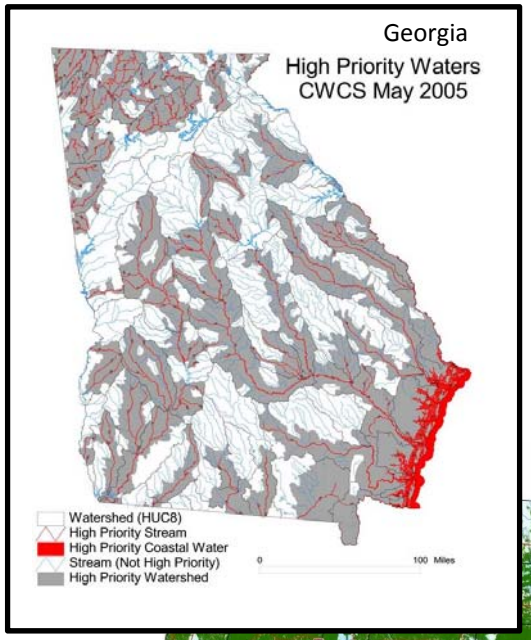
- Create a shared **blueprint** for landscape conservation actions that sustain natural and cultural resources



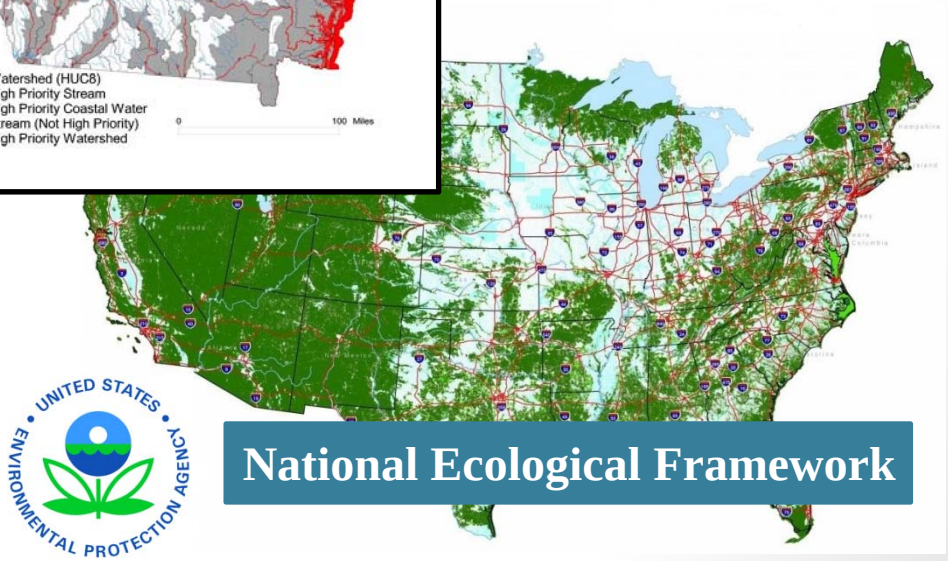
Conservation Blueprints

- The idea is not new





South Atlantic Fishery Management Council
"To Conserve and Manage"



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

National Ecological Framework

So, what's different from past efforts?

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- Planning for the Cooperative, not any one organization

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- An adaptation strategy (incorporating climate change, urban growth, and other future changes)

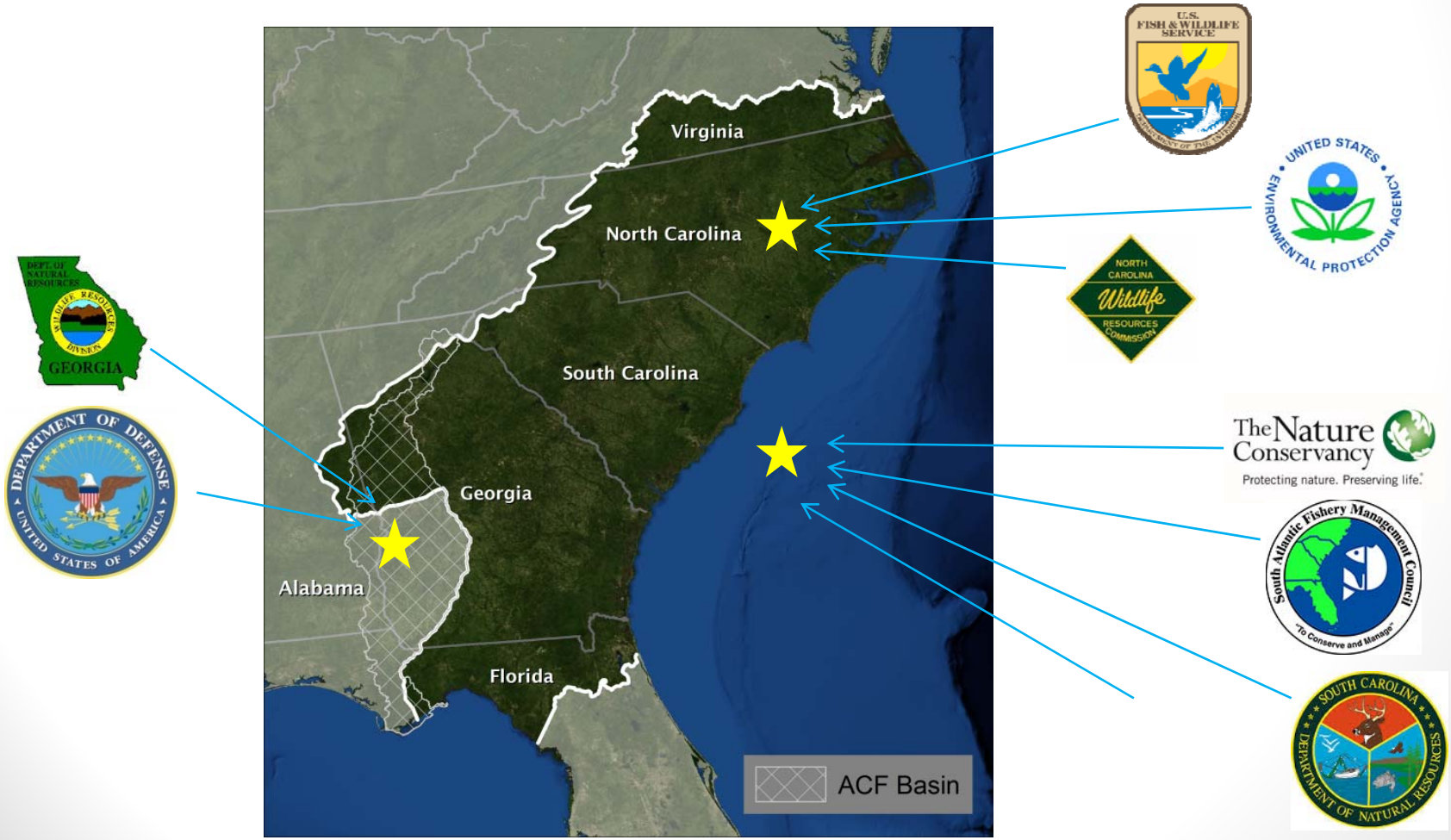
So, what's different from past efforts?

- Planning for the Cooperative, not any one organization
- An adaptation strategy (incorporating climate change, urban growth, and other future changes)
- Bigger scope and scale

How can the Blueprint be used?

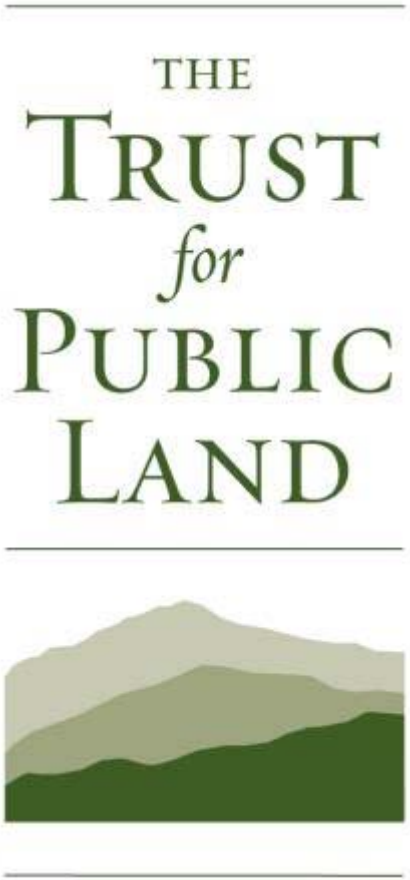
How can the Blueprint be used?

- Case 1: finding the best places to use current resources



How can the Blueprint be used?

- Case 2: bringing in new conservation dollars



How can the Blueprint be used?

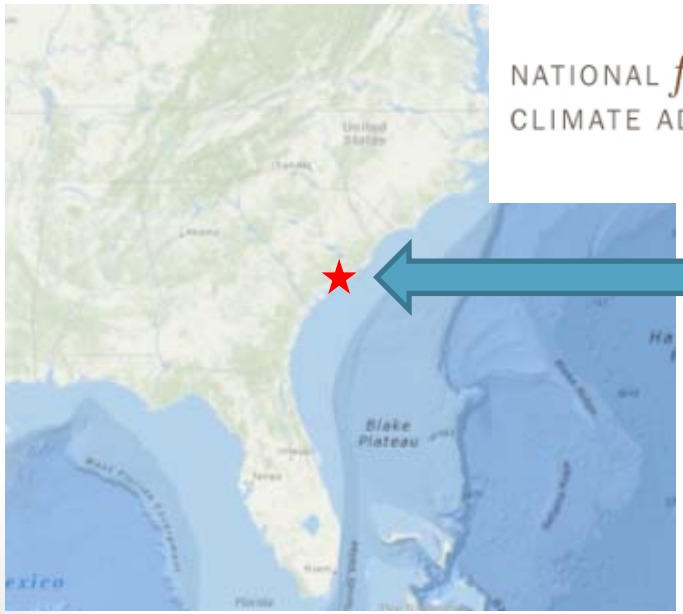
- Case 3: guiding infrastructure development

How can the Blueprint be used?

- Case 4: creating incentives as an alternative to regulation

How can the Blueprint be used?

- Case 5: bringing in landscape perspectives to local adaptation (how do I fit in?)



NATIONAL *fish, wildlife & plants*
CLIMATE ADAPTATION STRATEGY

How can the Blueprint be used?

- Case 6: responding to major disasters

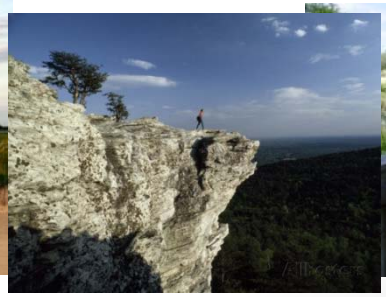
Progress so far

- Indicators and targets (shared measures of success)

Indicators and targets

- Ecosystem integrity

- Intact cultural landscapes



Progress so far

- Indicators and targets (shared measures of success)

- State of the South Atlantic

The State of the South Atlantic

State of the South Atlantic

C

Confidence

low → high

South Atlantic ecosystem health scores

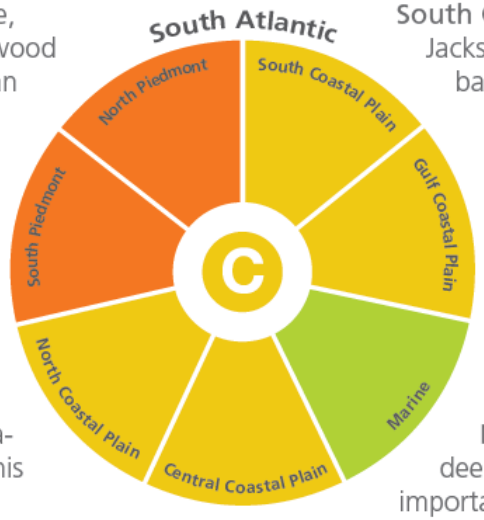
Overall, the South Atlantic scored a C. Piedmont areas scored the lowest, likely due to impacts from their major urban megaregions. The Marine region scored the highest; however, it did not include fishing impacts. The Coastal Plain scores were in the middle. These scores show that, while the South Atlantic 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.

ECOSYSTEM

marine

B+

Confidence: low → high

An ocean of possibilities

The marine environment starts at either the estuary mouth or the shoreline and stretches 200 miles into the ocean, covering the extent of U.S. waters. The marine ecosystem comprises about half of the South Atlantic geography! From deepwater coral formations to right whale calving grounds, this vast expanse of open water and benthic habitat sustains coastal tourism, commerce, and fisheries.

Interpreting the score

Overall, this ecosystem scored a B+. This is the highest ecosystem score in this assessment, however, it does not include fishing impacts. If included, those would likely lower the score. Productivity and hardbottom indicators were in good condition, but poor connectivity with freshwater brought down the overall score. While this system is relatively healthy, future threats from offshore energy and ocean acidification could significantly impact ecosystem integrity.

- A — *100-80% in good condition*
- B — *79-60% in good condition*
- C — *59-40% in good condition*
- D — *39-20% in good condition*
- F — *19-0% in good condition*
- ◯ — *Not scored; baseline for future*

- ◯ Marine turtles & mammals
- A Primary productivity
- A Potential hardbottom condition
- D Fresh & saltwater connectivity

- Shelf break
- Deep ocean upwelling
- Hardbottom and deepwater coral
- Migratory seabirds
- Marine fish and mammals
- Sargassum mats
- Algal blooms
- Marine industry
- Recreational and commercial fishing
- Ocean acidification

Small turtles, big adventures

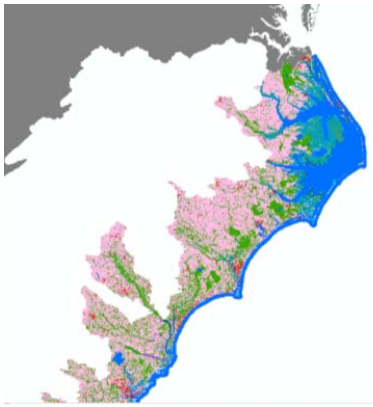
Sea turtles are iconic marine animals perhaps best-known for nesting on the beach. Not only do adult females famously migrate back to their birthplaces to lay their own eggs, but recent tracking data shows that young green sea turtles, born as far away as Costa Rica, swim thousands of miles to grow up off the South Atlantic coast.

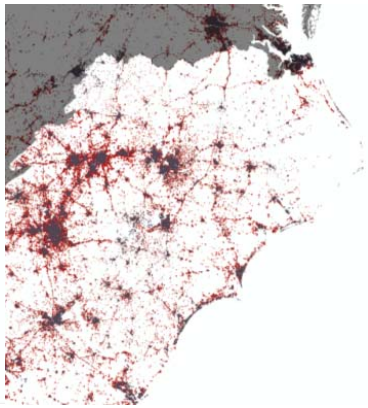
Andy Bruckner/NOAA

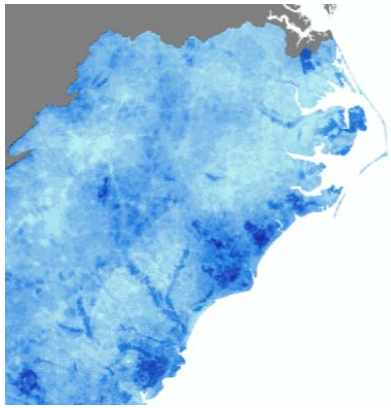
Progress so far

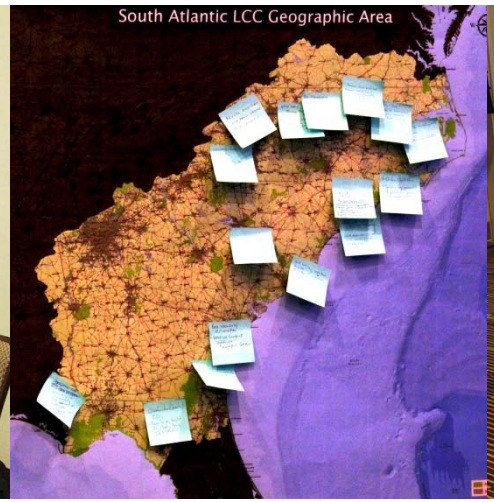
- Indicators and targets (shared measures of success)
- State of the South Atlantic
- Blueprint 1.0

Regional Blueprint workshops

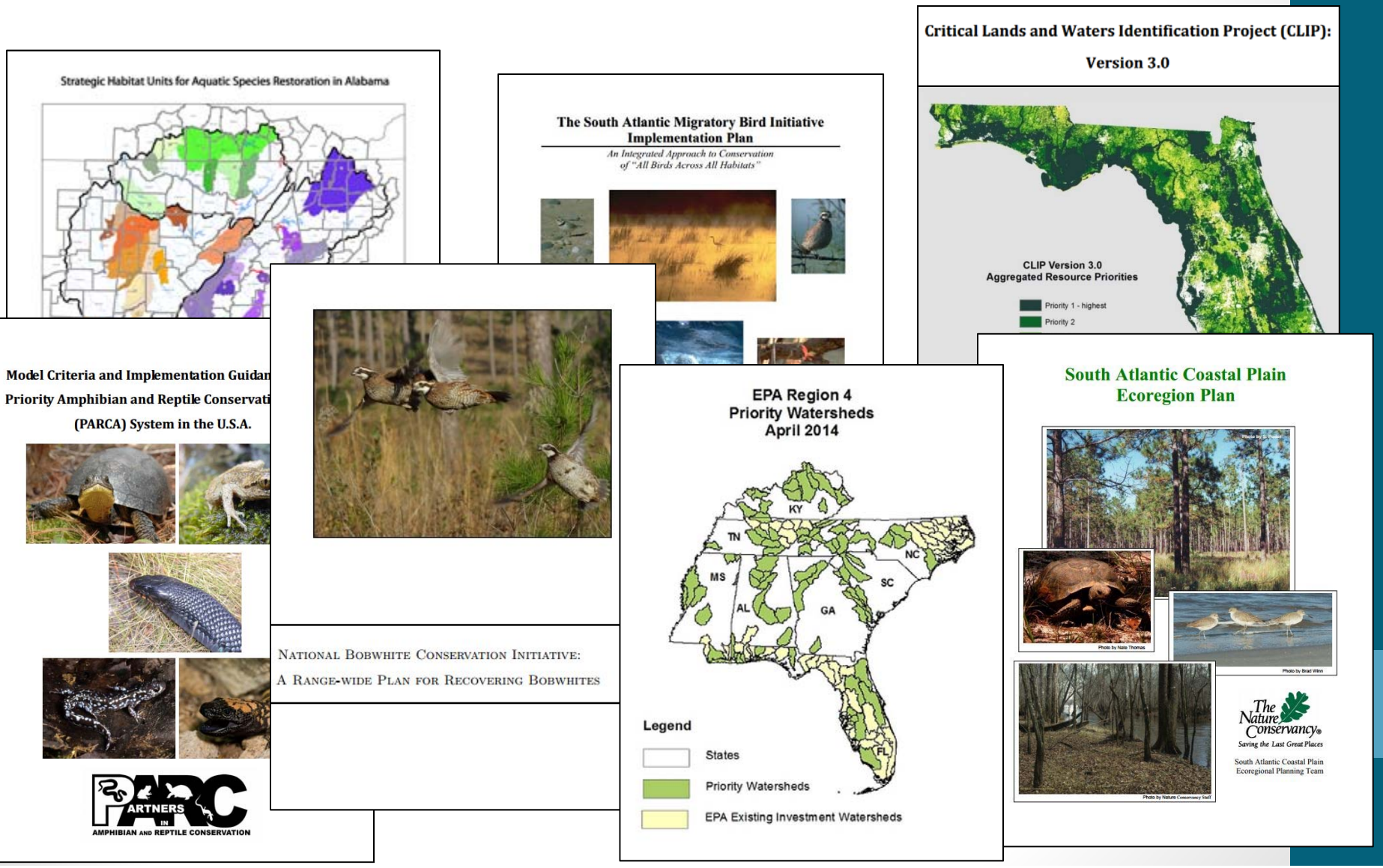


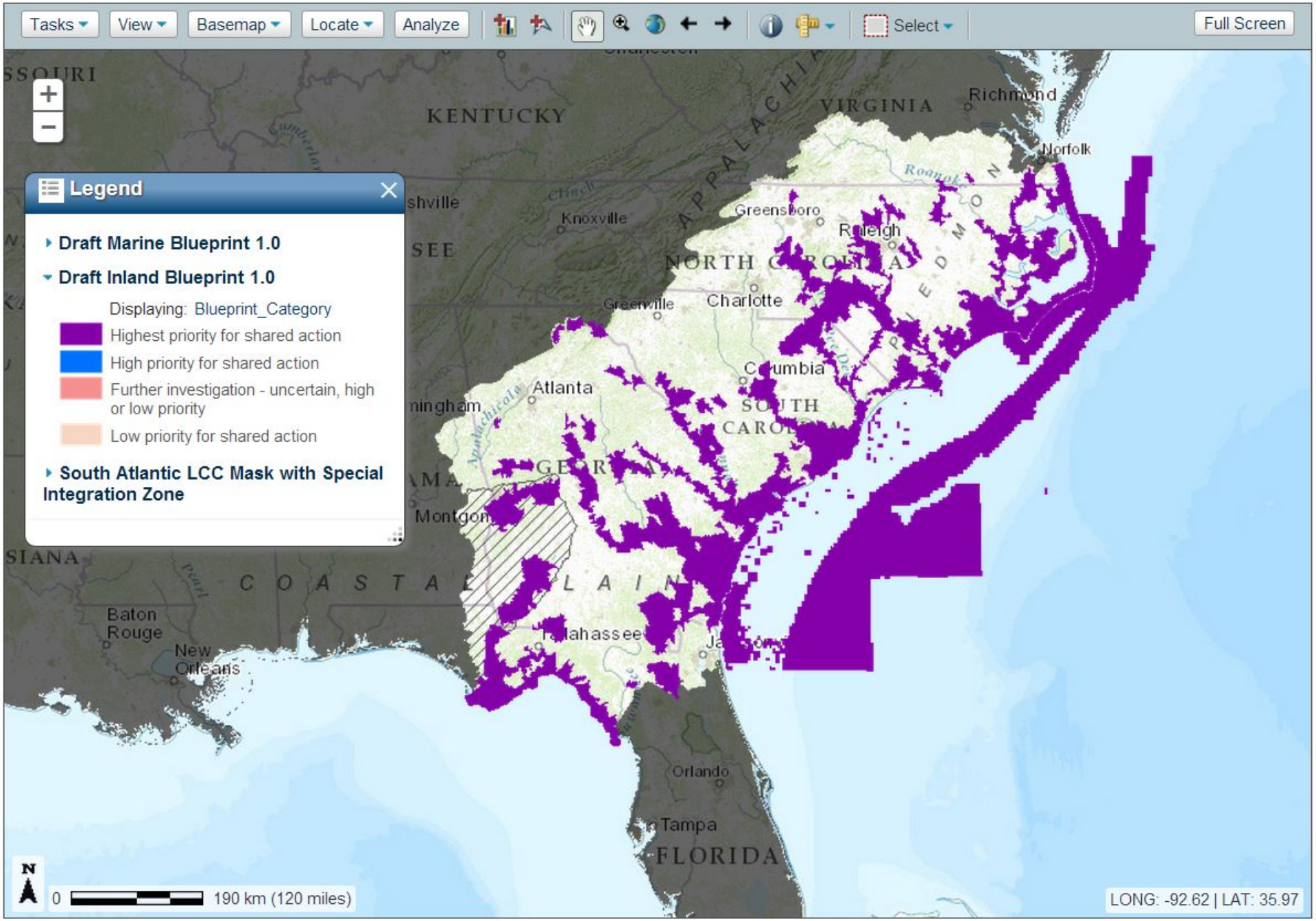




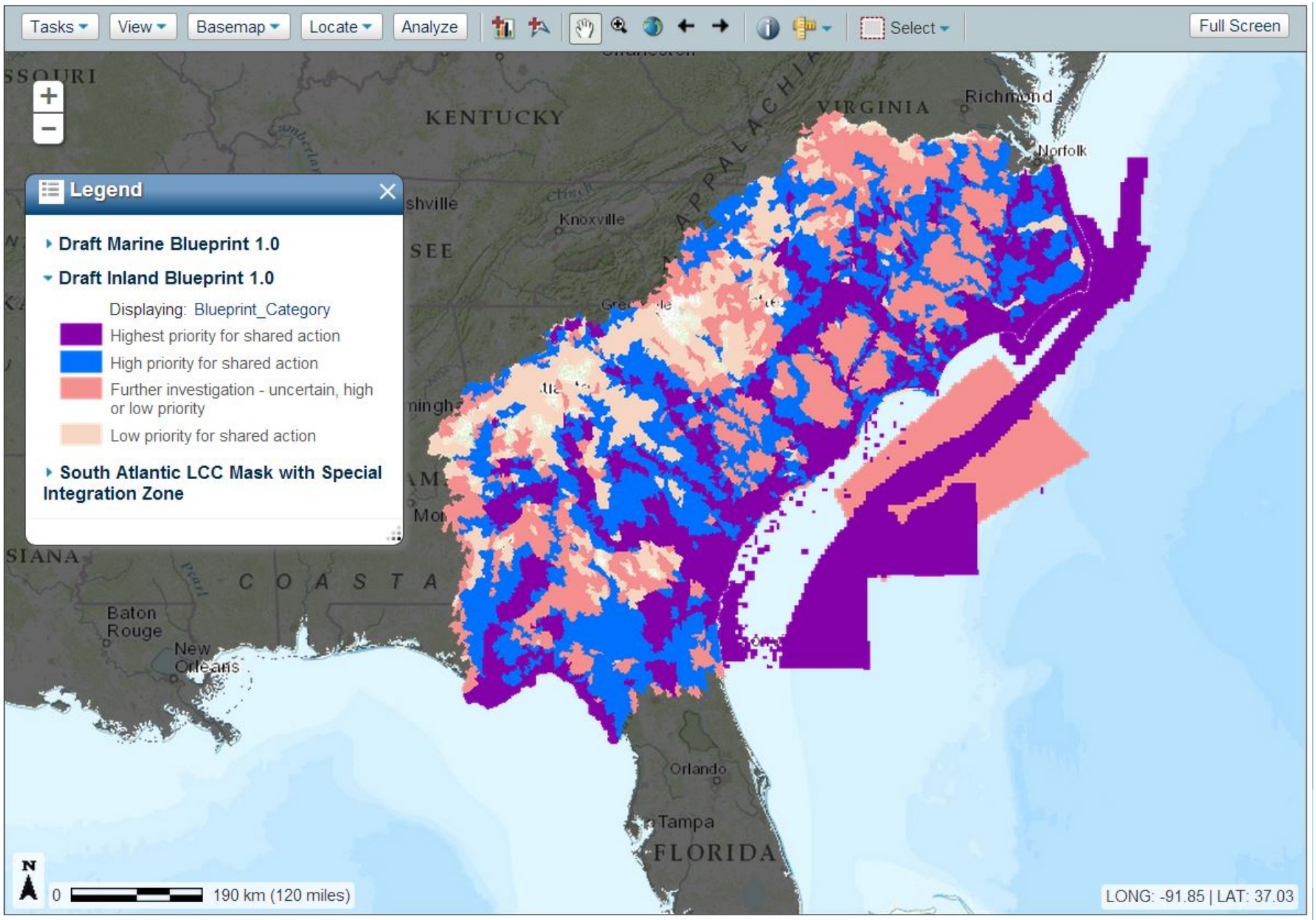


Incorporating partner plans





- South Atlantic LCC Blueprint 1.0 – http://blueprint.southatlantic.org



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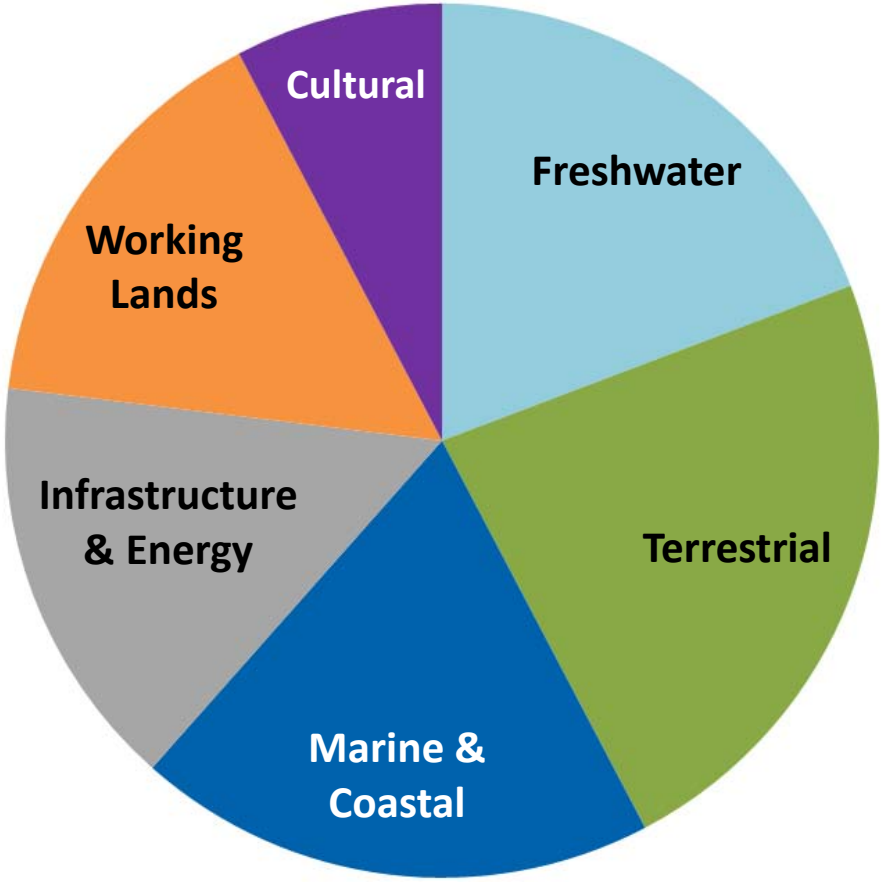
Working with users



The Nature Conservancy
Protecting nature. Preserving life.

GEORGIA
Department of Natural Resources
Wildlife Resources Division

THE CONSERVATION FUND

National Park Service

South Atlantic Fishery Management Council
"To Conserve and Manage"

Department of Transportation
United States of America

United States Environmental Protection Agency

Florida Fish and Wildlife Conservation Commission

South Carolina Department of Natural Resources

U.S. Fish & Wildlife Service

National Oceanic and Atmospheric Administration
NOAA
U.S. Department of Commerce

North Carolina Wildlife Resources Commission

United States Marine Corps

Forest Service
U.S.
Department of Agriculture

Virginia
Department of Game & Inland Fisheries

DCR
Virginia Department of Conservation & Recreation

ncasi

NRCS
Natural Resources Conservation Service

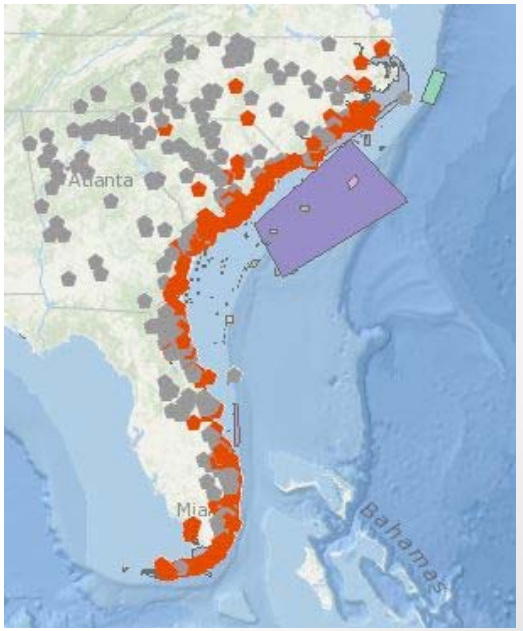
Meet the user team

Aleta Hohn	NOAA
Anna Toline	NPS
Ben Wigley	NCASI
Beth Stys	FL FWC
Beth Byrd	NPS
Billy Dukes	SC DNR
Breck Carmichael	SC DNR
Brian Watson	VA DGIF
Brian Yanchik	DOT
Charlotte Gillis	NPS
Chris Burkett	VA DGIF
Cynthia Walton	NPS
Darrell Echols	NPS
David Whitaker	SC DNR
Don Imm	FWS
Emrys Treasure	USFS
George Willson	TCF
Hervey McIver	TNC
Jan MacKinnon	GA DNR
Jason Bulluck	VA DCR
John Ann Shearer	FWS
John Stanton	FWS
Jon Ambrose	GA DNR
Julie Elmore	NRCS
Kacy Cook	NC WRC
Lisa Perras-Gordon	EPA
Marella Buncick	FWS
Maria Whitehead	TNC
Mark Cantrell	FWS
Mark Scott	SC DNR
Mary Morrison	USFS
Pace Wilber	NOAA
Pam Wingrove	FWS
Randy Swilling	NPS
Reggie Thackston	GA DNR
Rick Durbrow	EPA
Roger Pugliese	SAFMC
Ryan Heise	NC WRC
Ryan Orndorff	Marines
Wilson Laney	FWS

Ecosystem-based fishery management

- Embedding the Conservation Blueprint in the revised Fishery Ecosystem Plan

- Reduce regulatory pressure on fishermen



South Carolina quail focus areas

- Implementing the National Bobwhite Conservation Initiative
- Facilitate conservation on private lands
- Demonstrate benefits of quail management

Photo by Steve Maslowski, USFWS

NBCI
National Bobwhite Conservation Initiative
. . . the unified strategy to restore wild quail

SOUTH CAROLINA DEPARTMENT OF NATURAL RESOURCES

Public lands planning

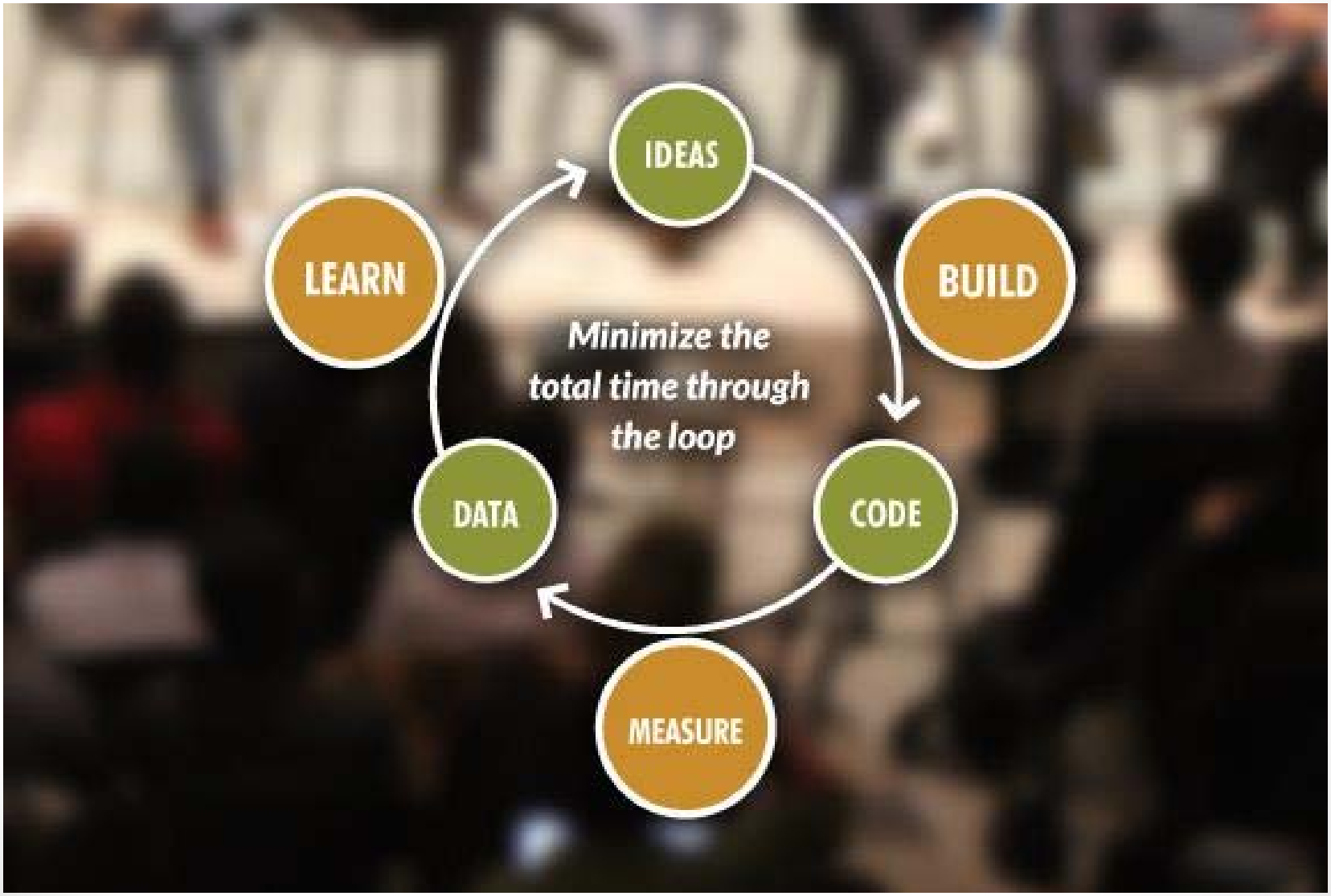
- Informing acquisition boundaries
- Demonstrate significance within larger landscape
- Adapting to climate change and urbanization

NATIONAL *fish, wildlife & plants*
CLIMATE ADAPTATION STRATEGY

Progress so far

- Indicators and targets (shared measures of success)
- State of the South Atlantic
- Blueprint 1.0
- Blueprint 2.0

The lean startup method



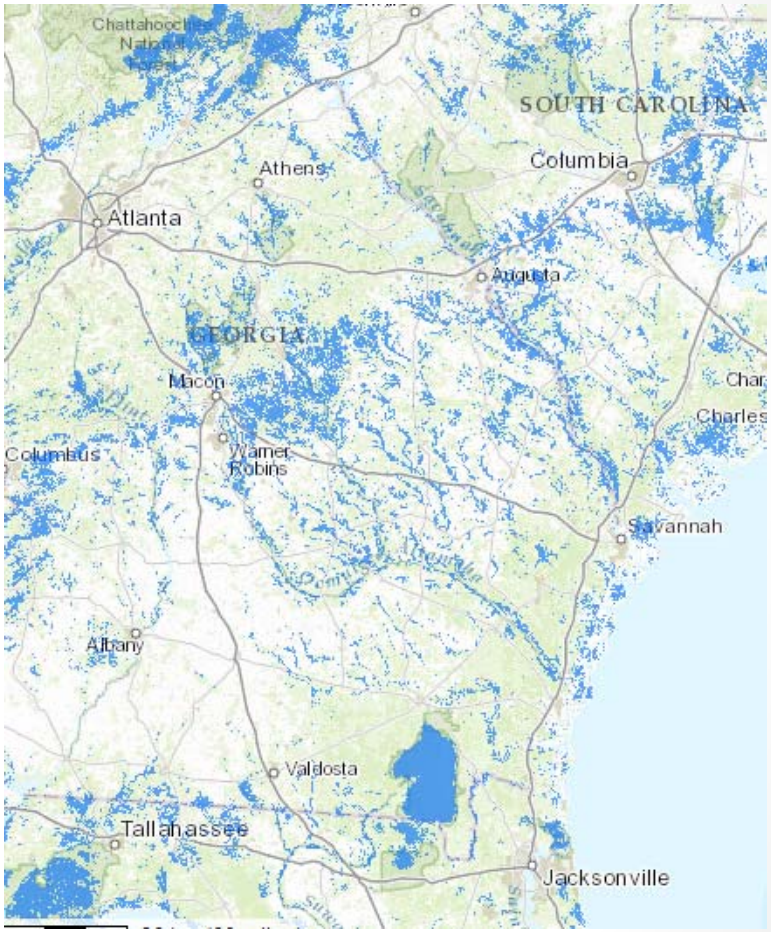
Next steps: building a better Blueprint

Content

Presentation

Content

- More explicitly connected to the indicators
  - Finished revising and modeling in January



Content

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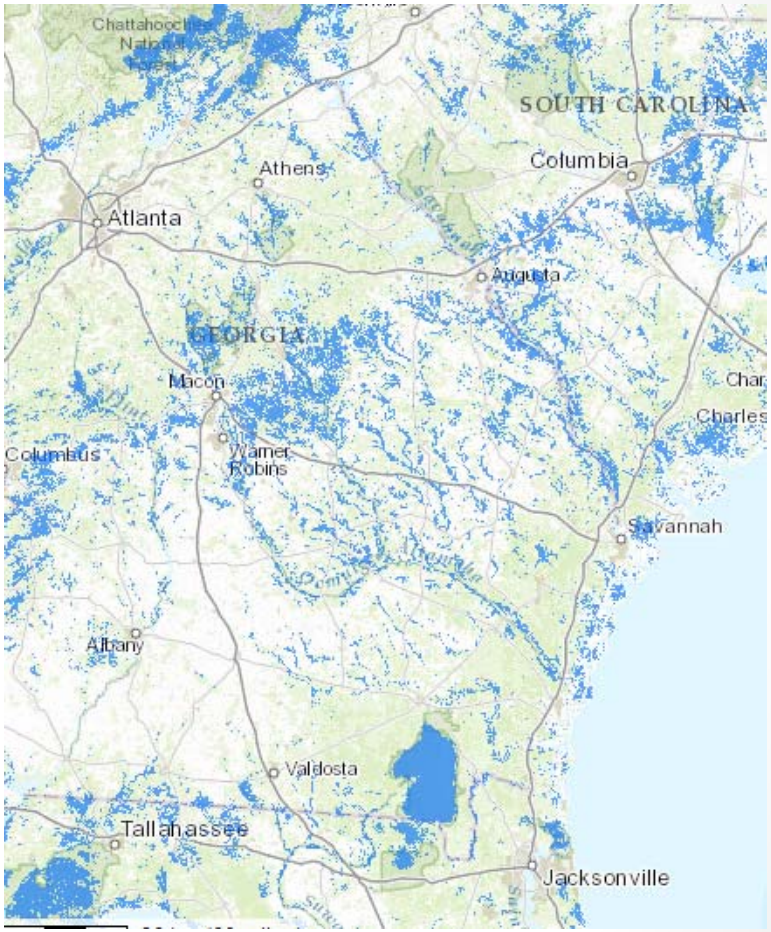
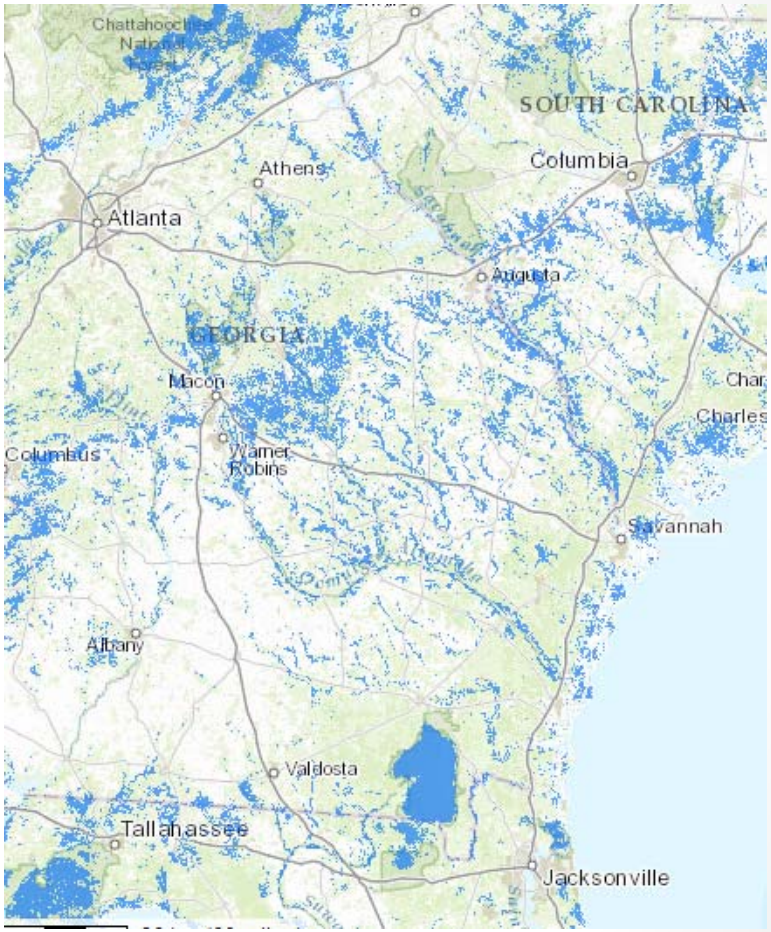
- Update Blueprint using a more data driven approach



Content

- More explicitly connected to the indicators
  - Finished revising and modeling in January
- Update Blueprint using a more data driven approach
- Finer spatial resolution

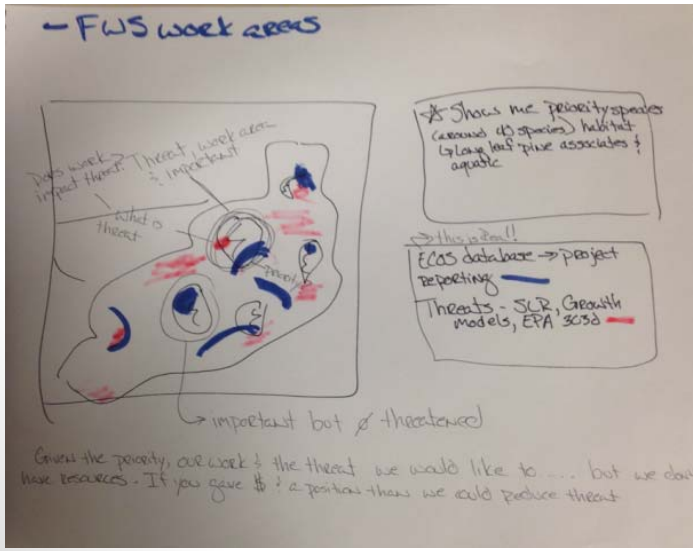


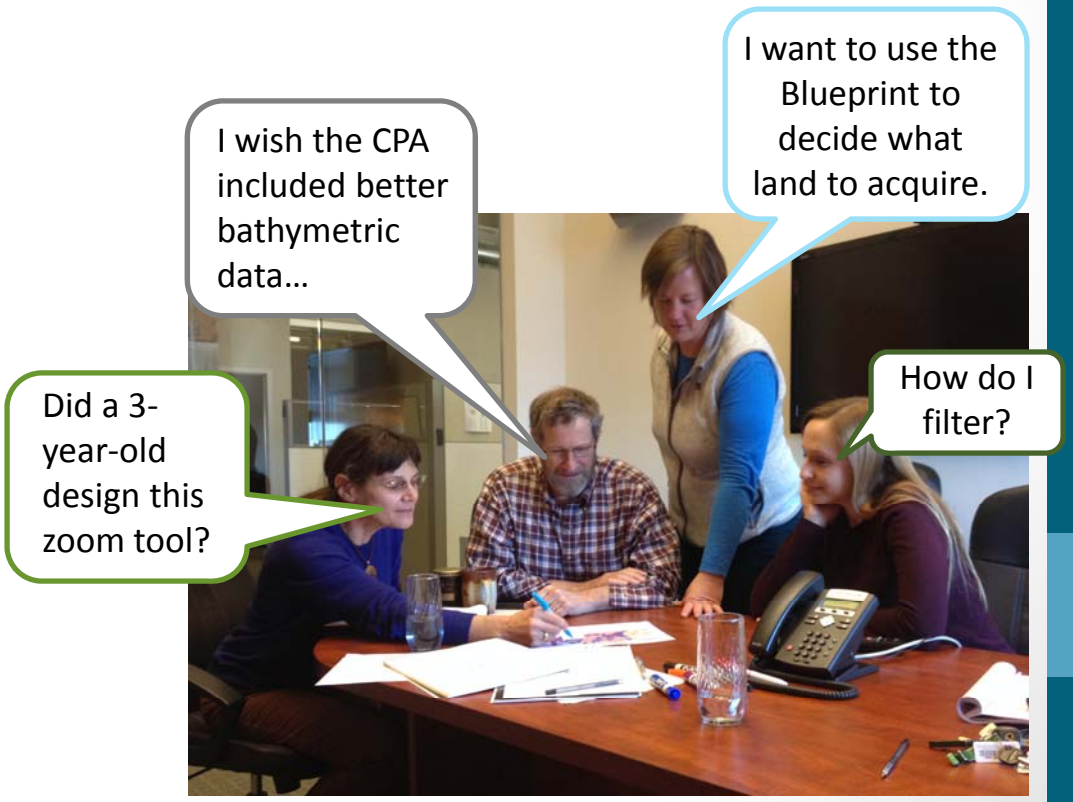
Conservation Design Team

• Mark Anderson	TNC
• Jim Fox	University of NC – Asheville
• Will Allen	The Conservation Fund
• Paul Wagner	Army Corps
• Bob Cooper	UGA
• Mary Conley	TNC
• Barry Grand	USGS
• Nate Nibbelink	UGA
• Dean Urban	Duke University
• Lindsey Smart	Albermarle-Pamlico Nat'l Estuary Prog.
• Tim Jones	Atlantic Coast Joint Venture
• Mary Davis	Southeast Aquatic Resources Partn.

Presentation

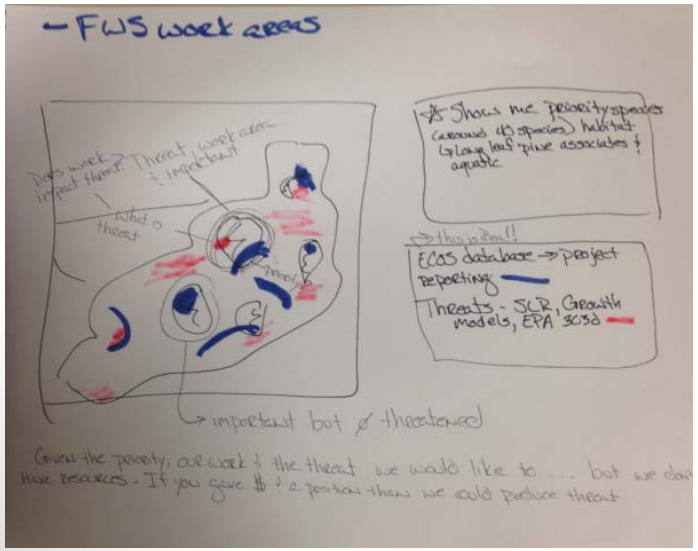
- Improved interface for accessing the Blueprint

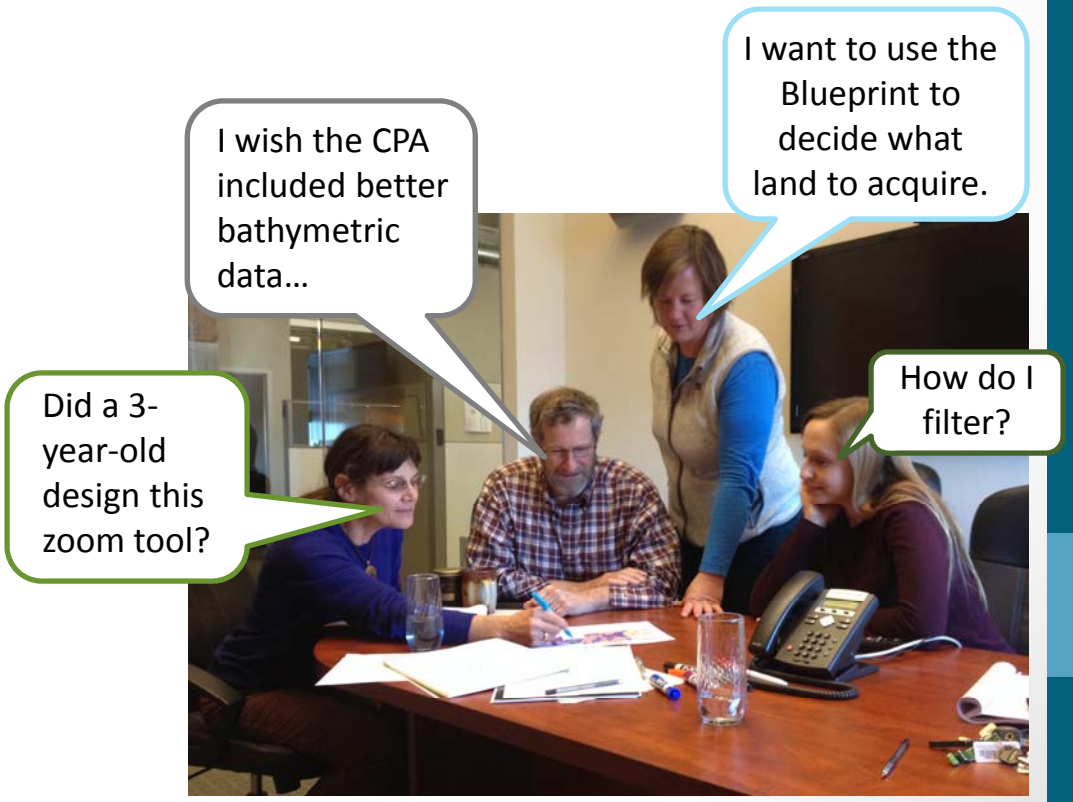




Presentation

- Improved interface for accessing the Blueprint
- New chart and graph features





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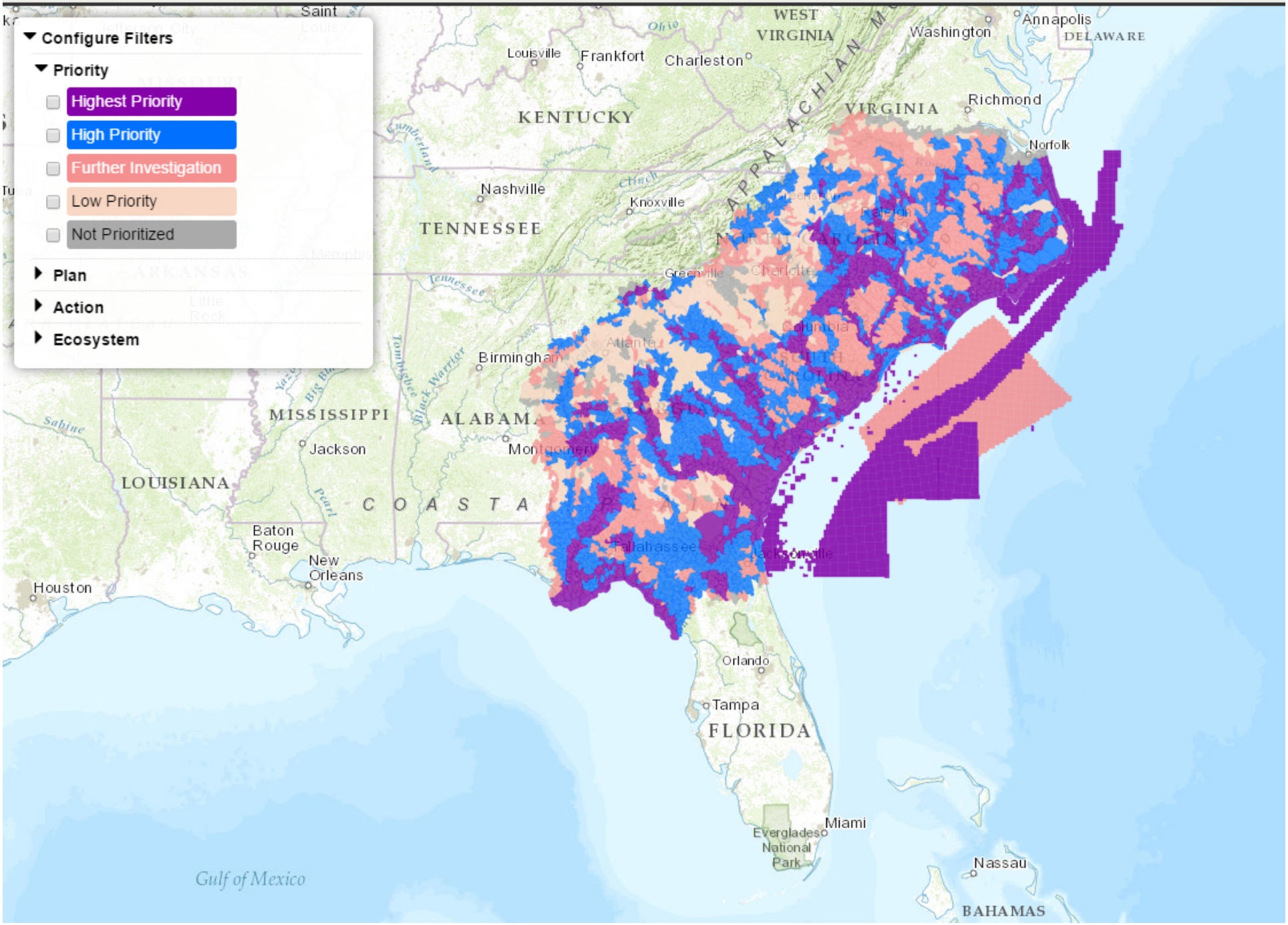

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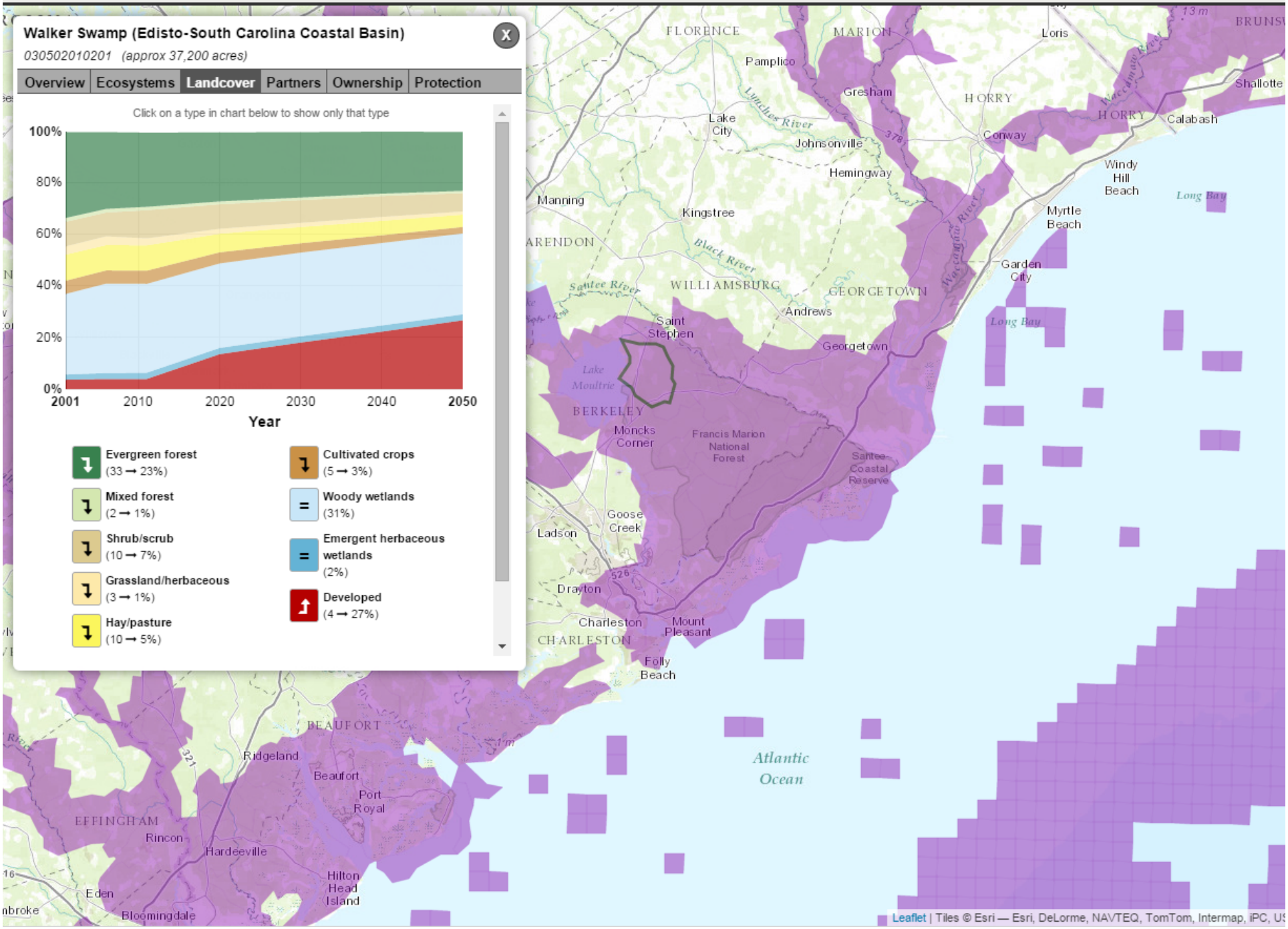
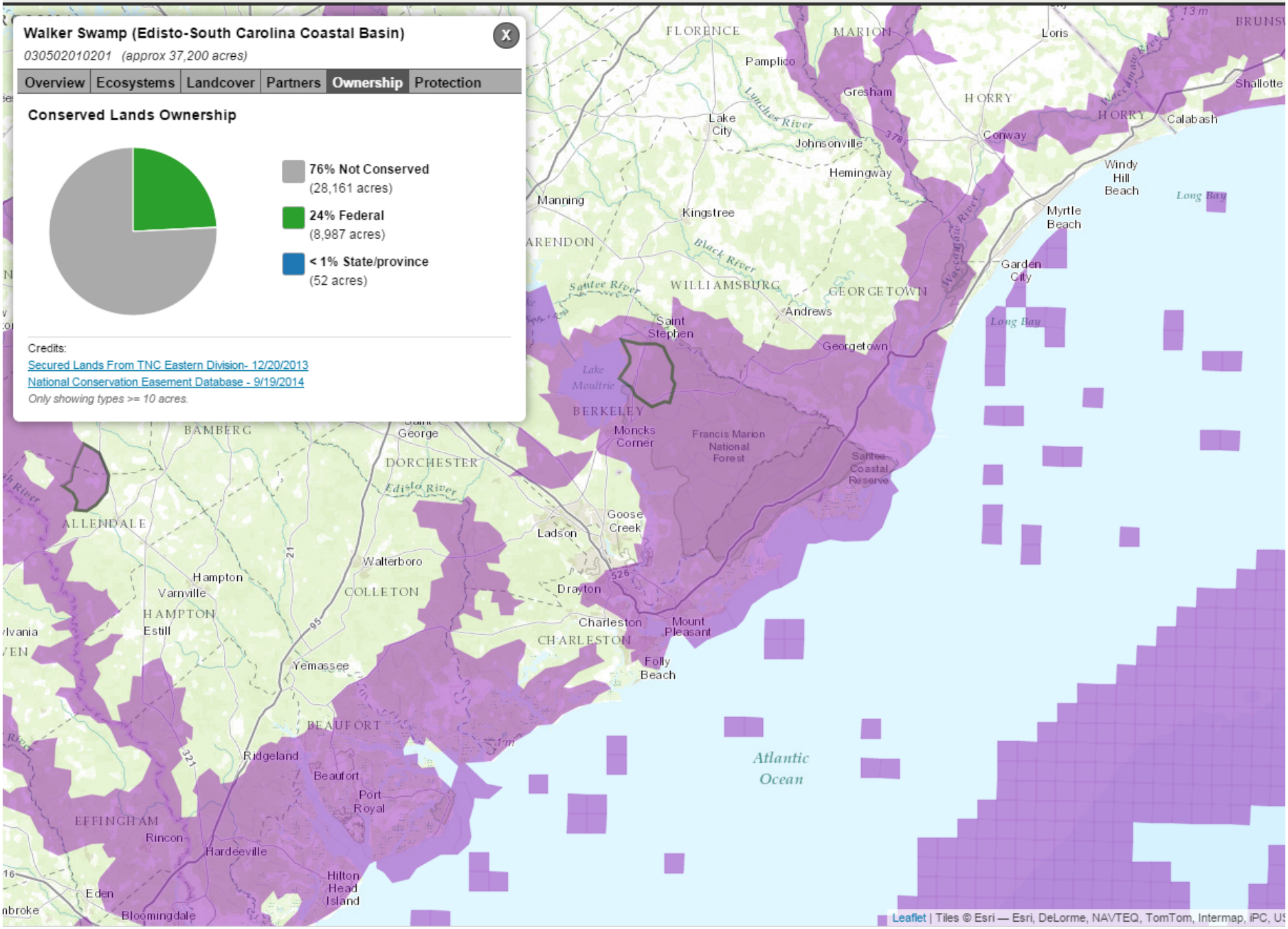


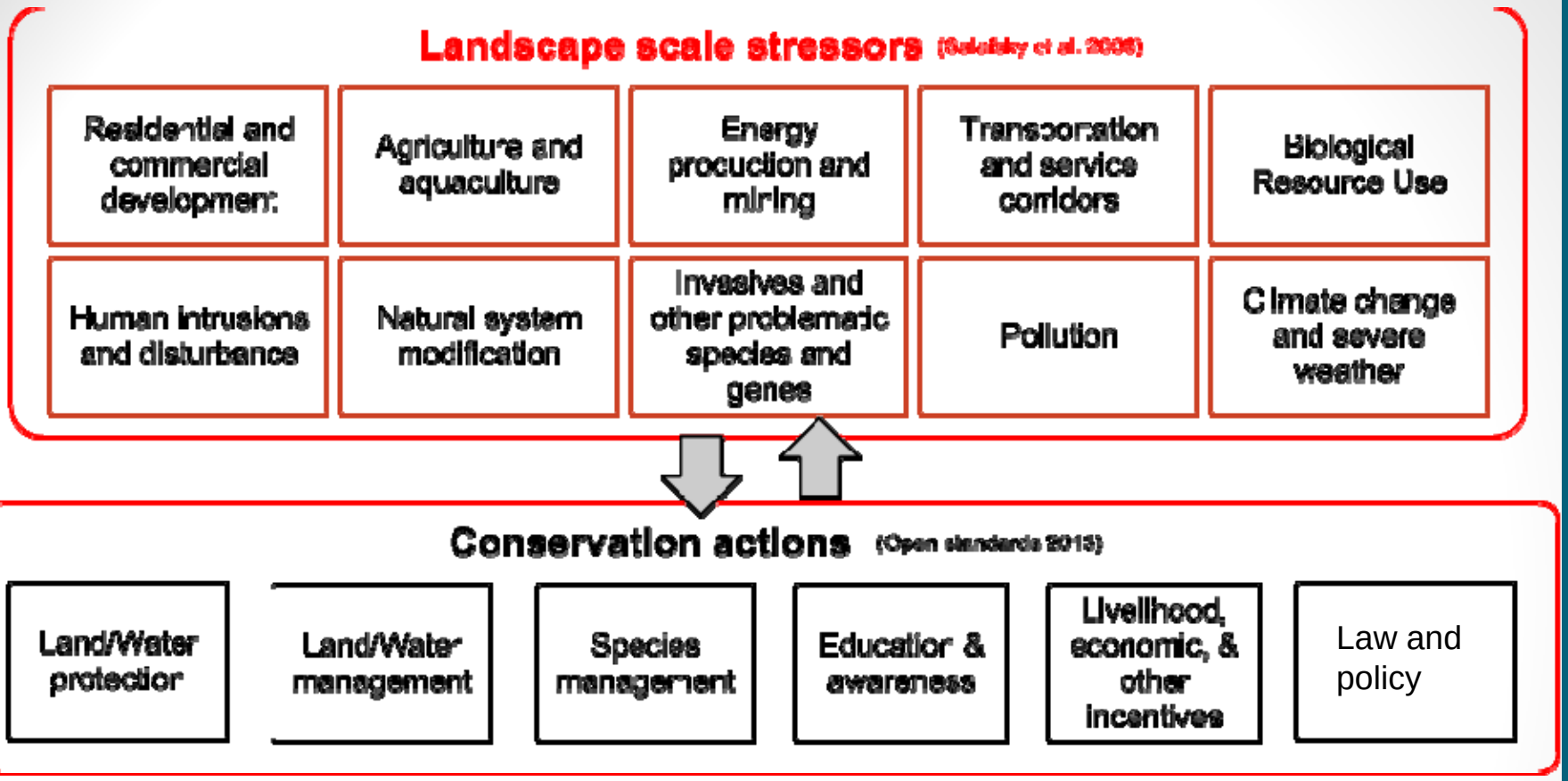
South Atlantic Conservation Blueprint



What's the plan for Blueprint 2.0?

Landscape scale stressors (Sokolsky et al. 2006)

Residential and commercial development	Agriculture and aquaculture	Energy production and mining	Transportation and service corridors	Biological Resource Use
Human intrusions and disturbance	Natural system modification	Invasives and other problematic species and genes	Pollution	Climate change and severe weather


Landscape scale stressors (Salafsky et al. 2008)
Residential and commercial development
Agriculture and aquaculture
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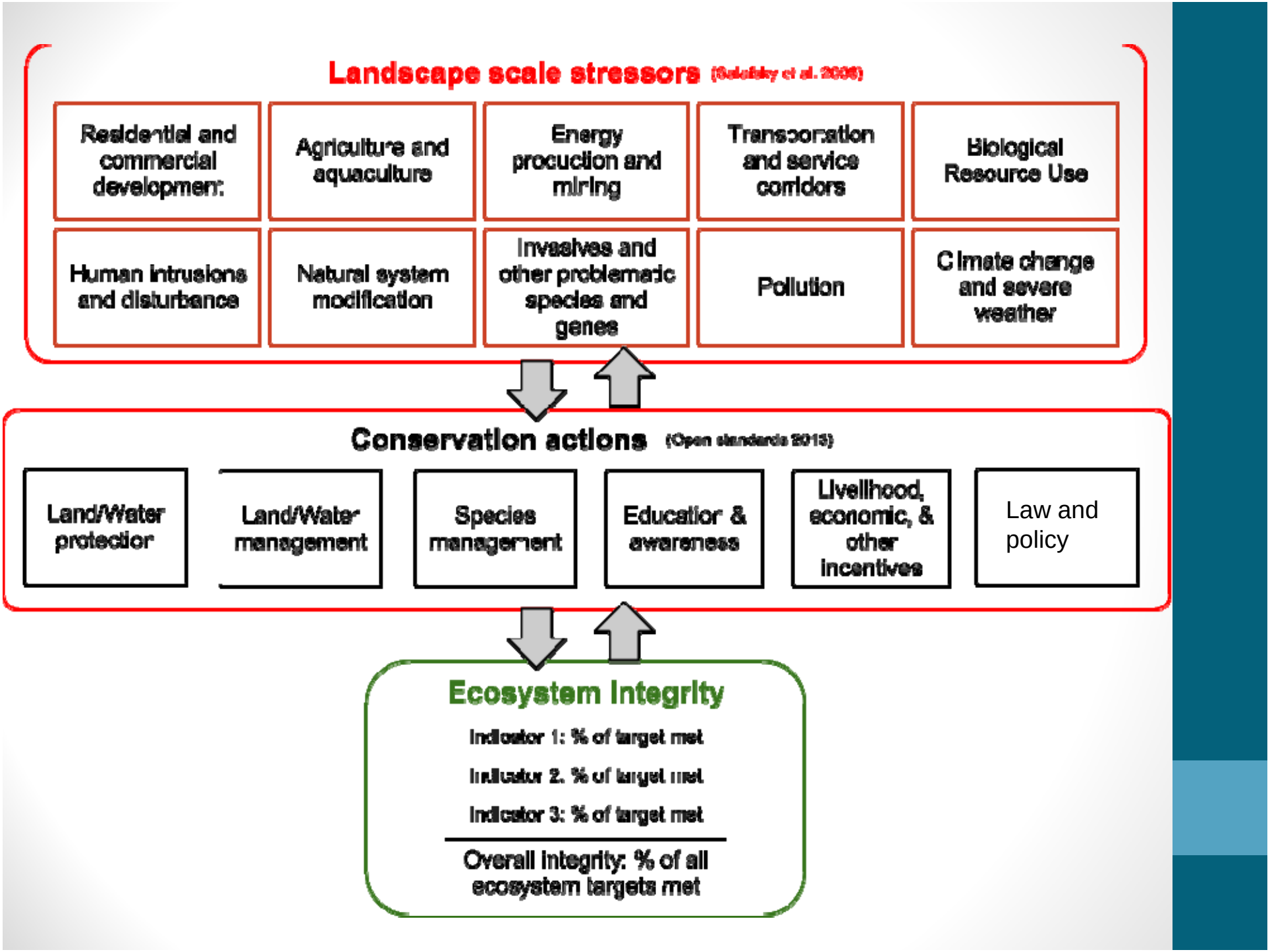
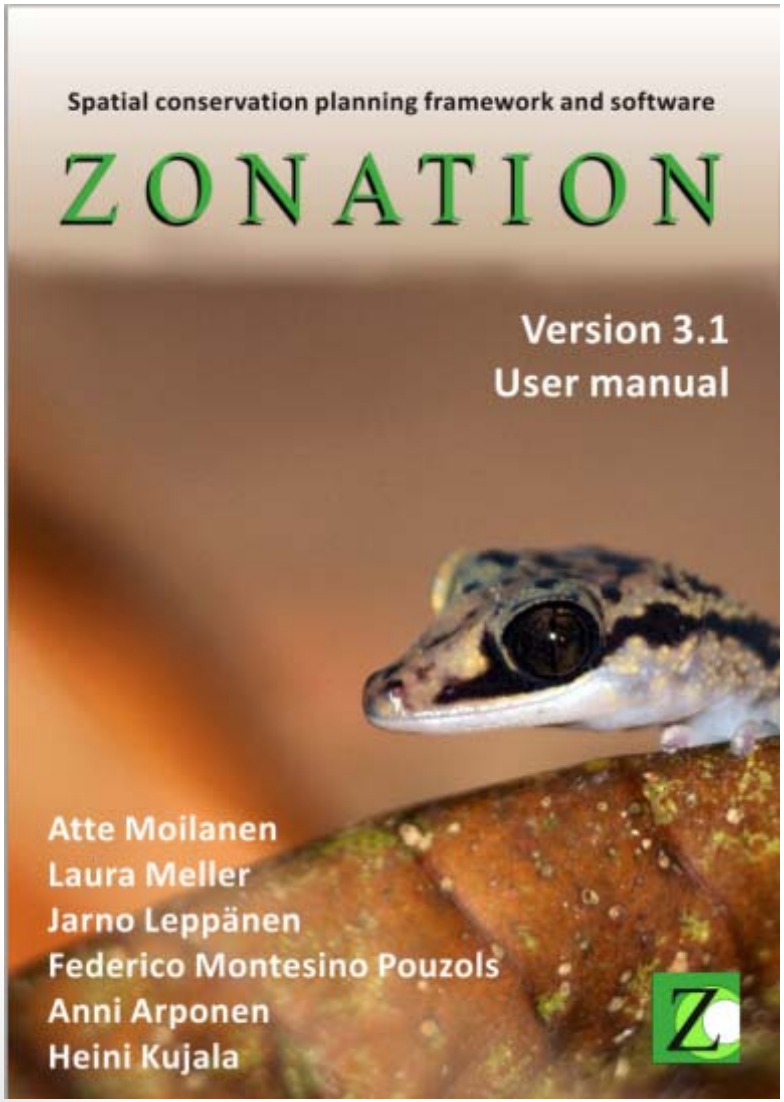
Invasives and other problematic species and genes
Pollution
Climate change and severe weather
Conservation actions (Open standards 2013)
Land/Water protection
Land/Water management
Species management
Education & awareness
Livelihood, economic, & other incentives
Law and policy


Landscape scale stressors (Salafsky et al. 2008)
Residential and commercial development
Agriculture and aquaculture
Energy production and mining
Transportation and service corridors
Biological Resource Use
Human intrusions and disturbance
Natural system modification
Invasives and other problematic species and genes
Pollution
Climate change and severe weather
Conservation actions (Open standards 2013)
Land/Water protection
Land/Water management
Species management
Education & awareness
Livelihood, economic, & other incentives
Law and policy
Ecosystem Integrity
Indicator 1: % of target met
Indicator 2: % of target met
Indicator 3: % of target met
Overall integrity: % of all ecosystem targets met

What's the plan for Blueprint 2.0?



- Originally developed in 2004 and is regularly updated
- Used globally for diverse applications
  - Terrestrial, freshwater, marine
  - Climate resilience
  - Urban conservation
- Algorithm is easy to understand

Indicator

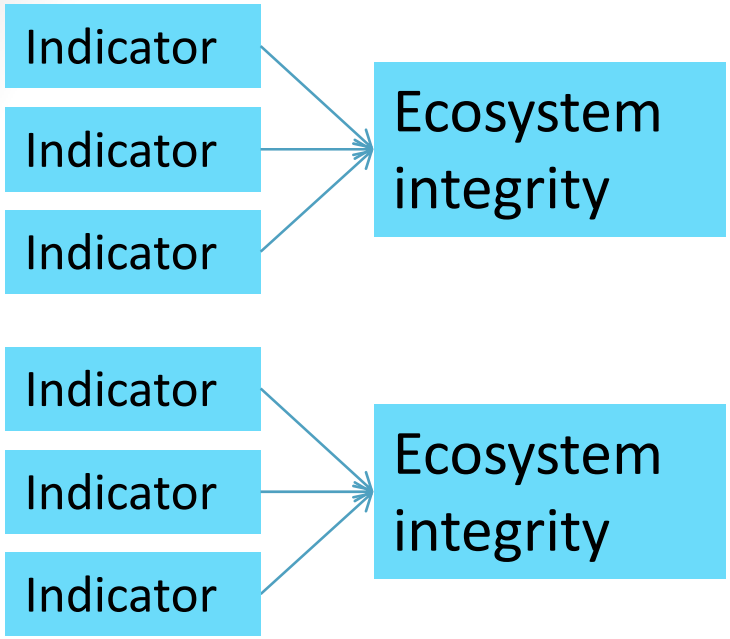
Indicator

Indicator

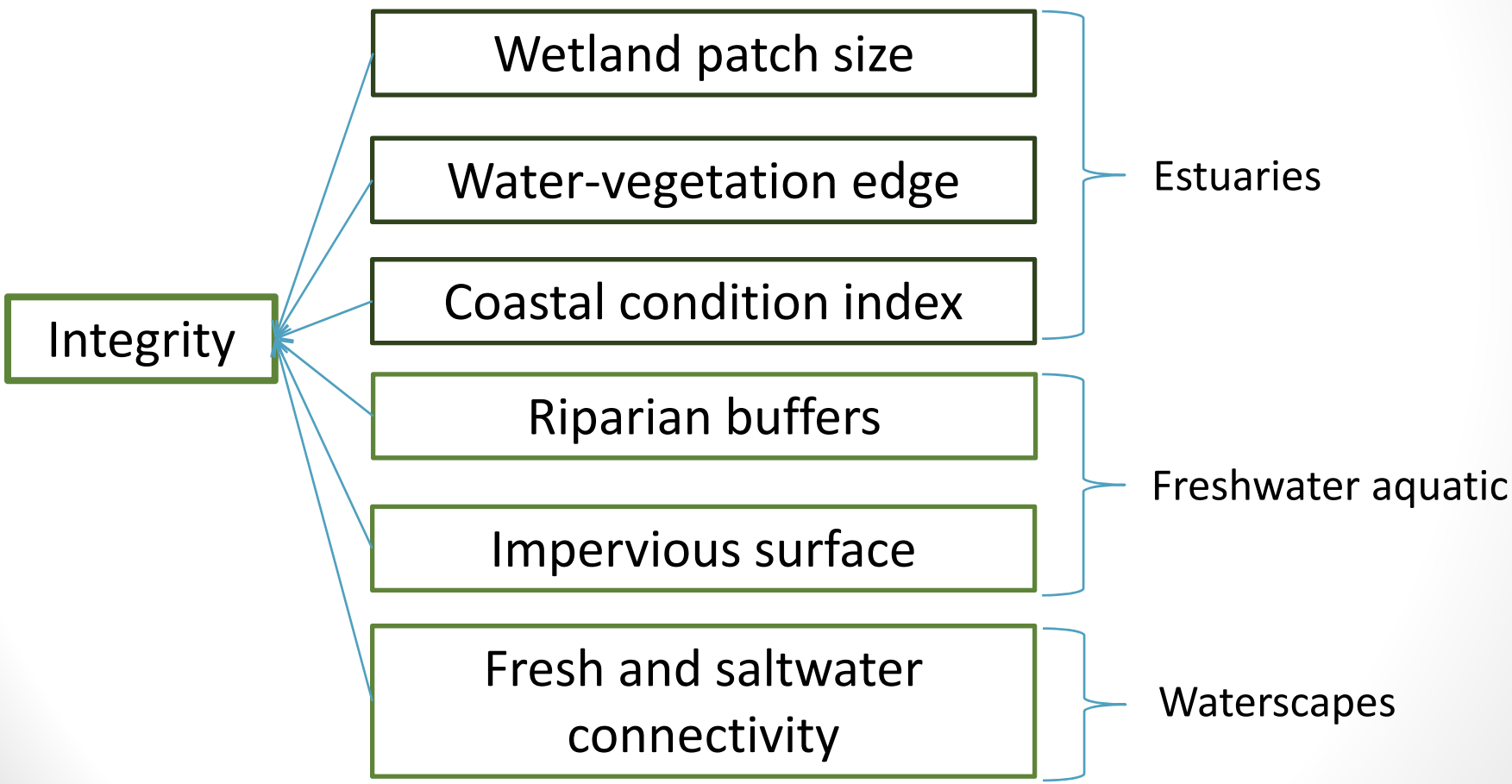
Indicator

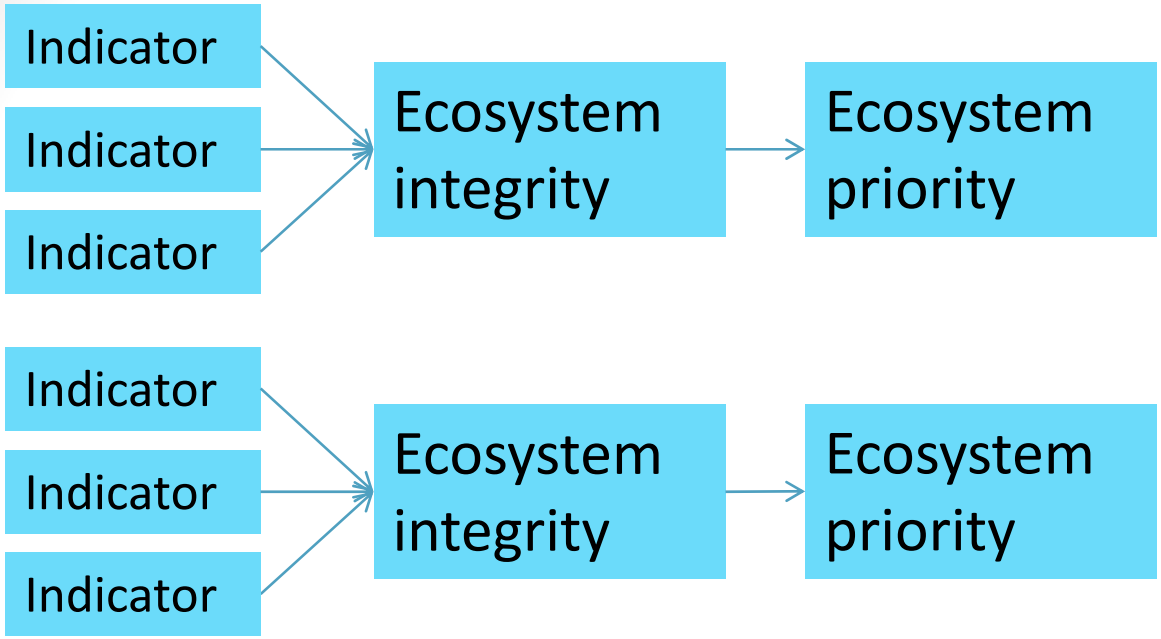
Indicator

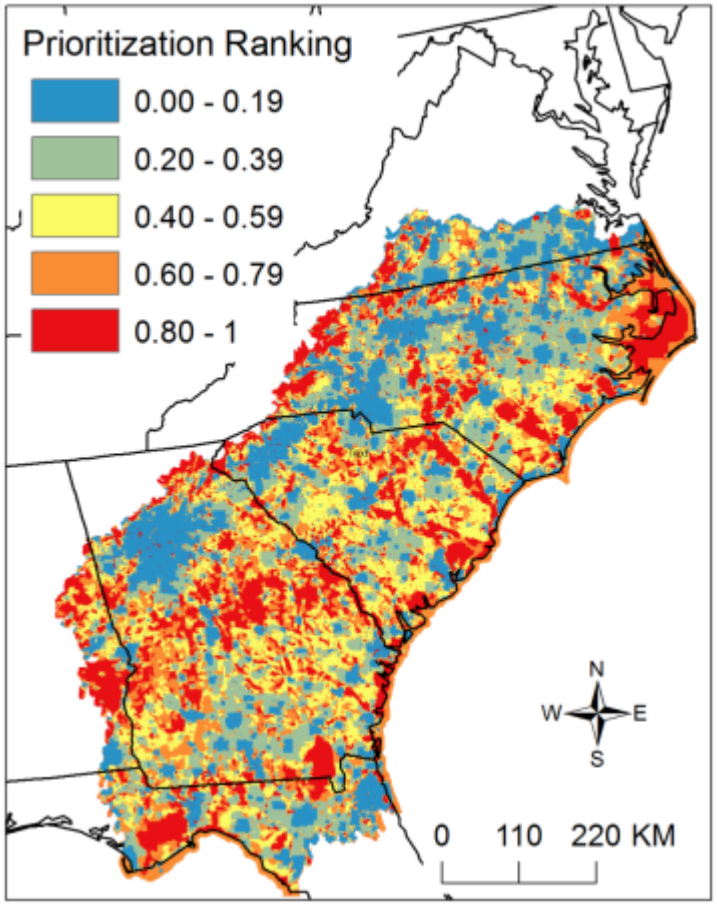
Indicator


Indicator
Indicator
Indicator
Ecosystem integrity
Indicator
Indicator
Indicator
Ecosystem integrity

Estuarine integrity

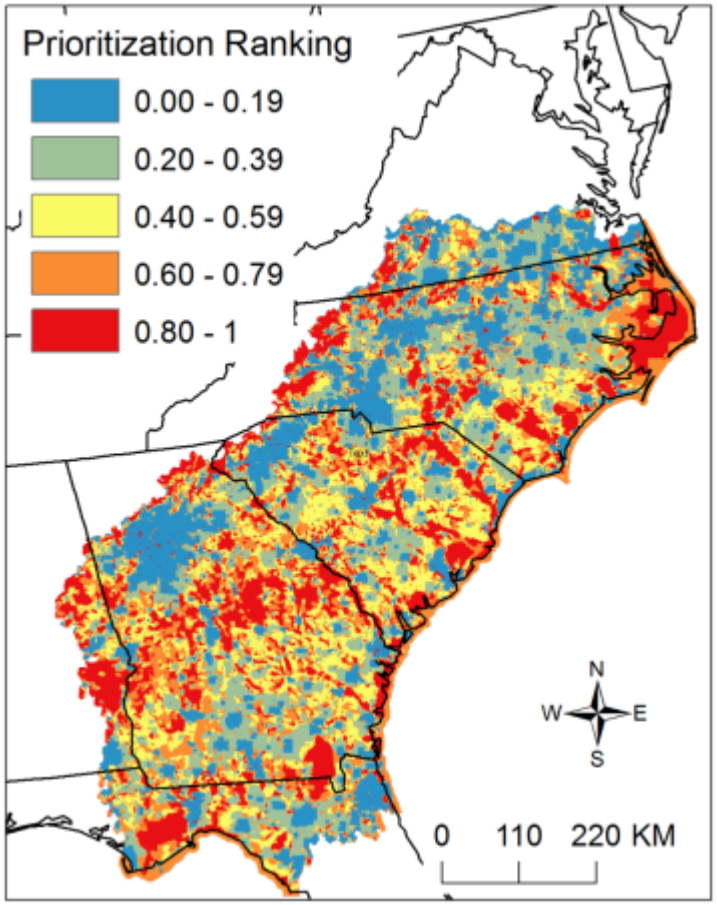



Indicator
Indicator
Indicator
Ecosystem integrity
Ecosystem priority
Indicator
Indicator
Indicator
Ecosystem integrity
Ecosystem priority



Example using 3 landscape indicators

- Start with all lands & waters included (clean slate)
- Iteratively remove cells that result in as little indicator loss as possible



Example using 3 landscape indicators

- Start with all lands & waters included (clean slate)
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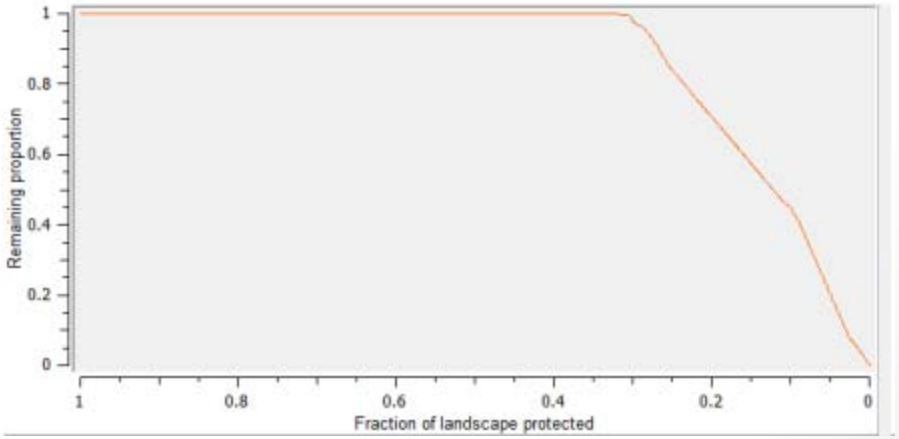
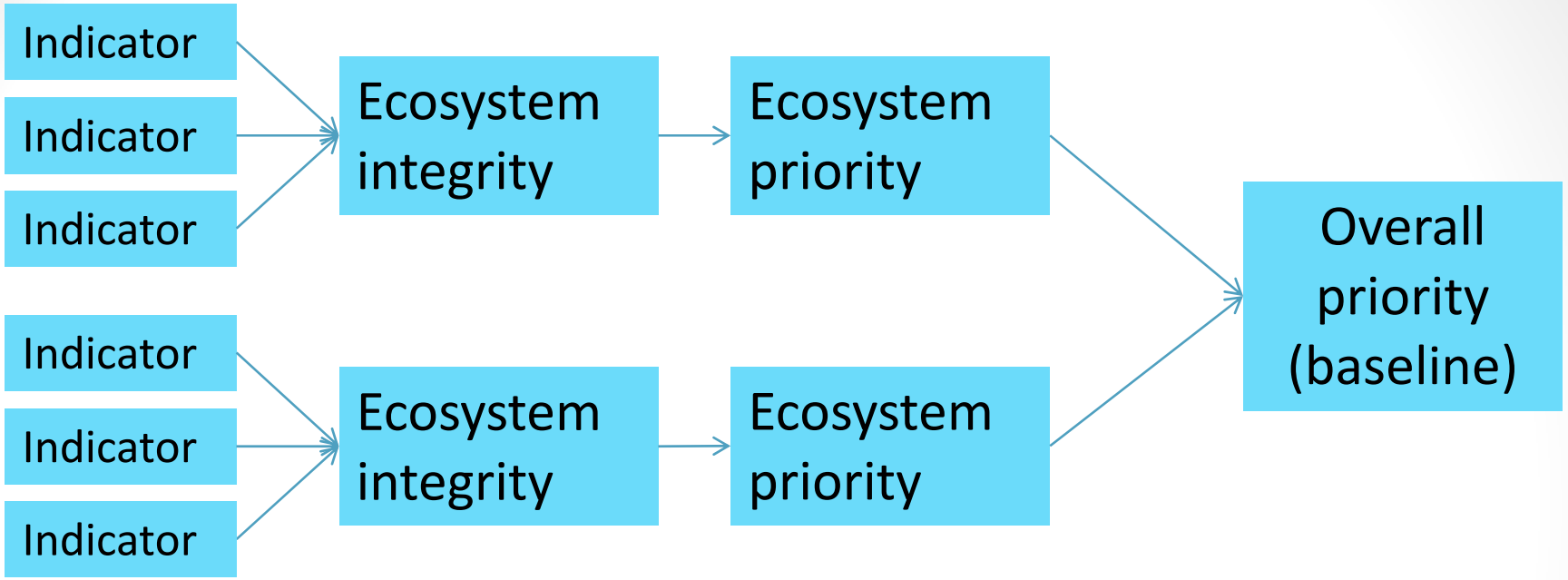


Impact on one indicator as more and more of the landscape is removed from the Blueprint


Indicator
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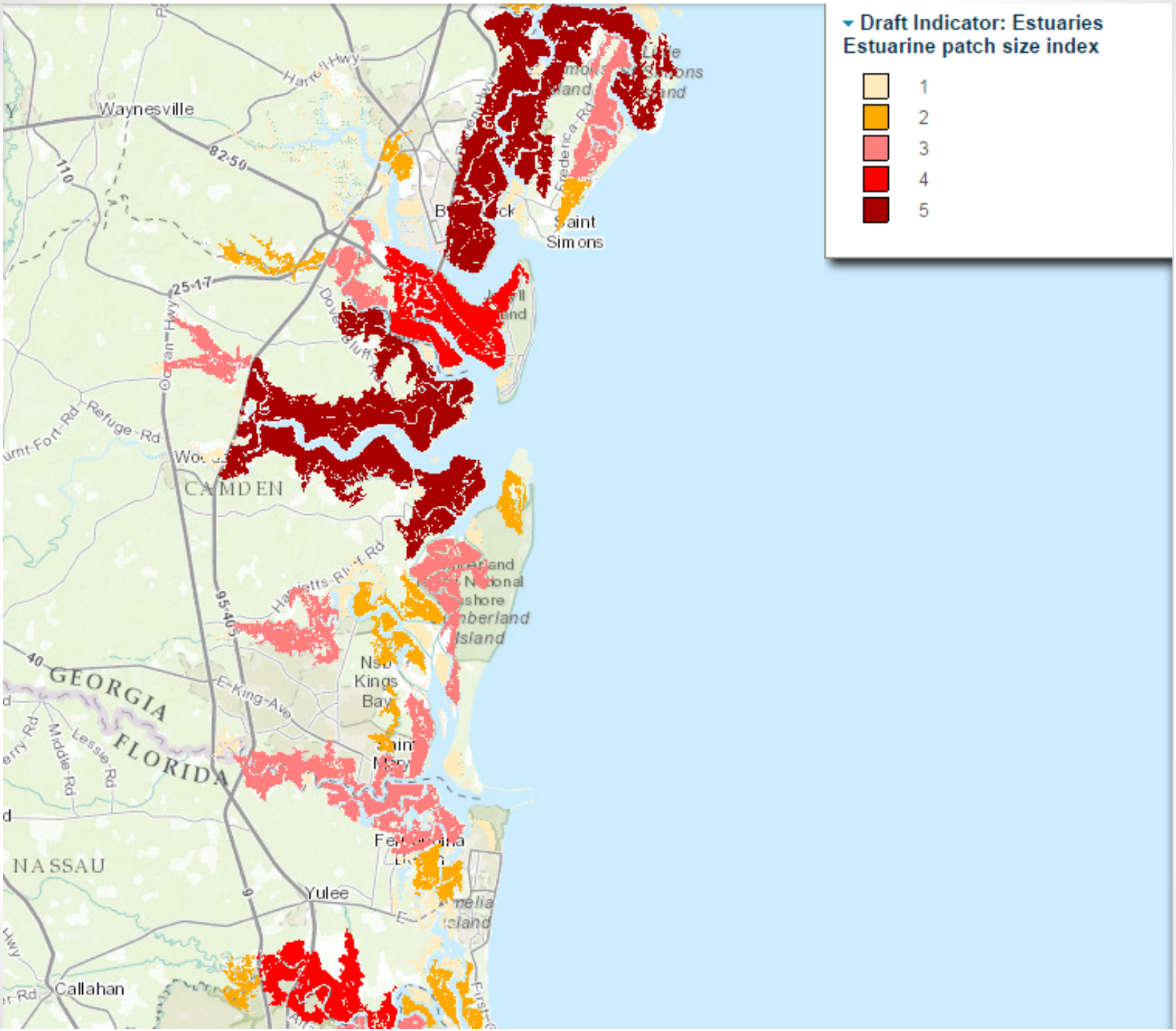
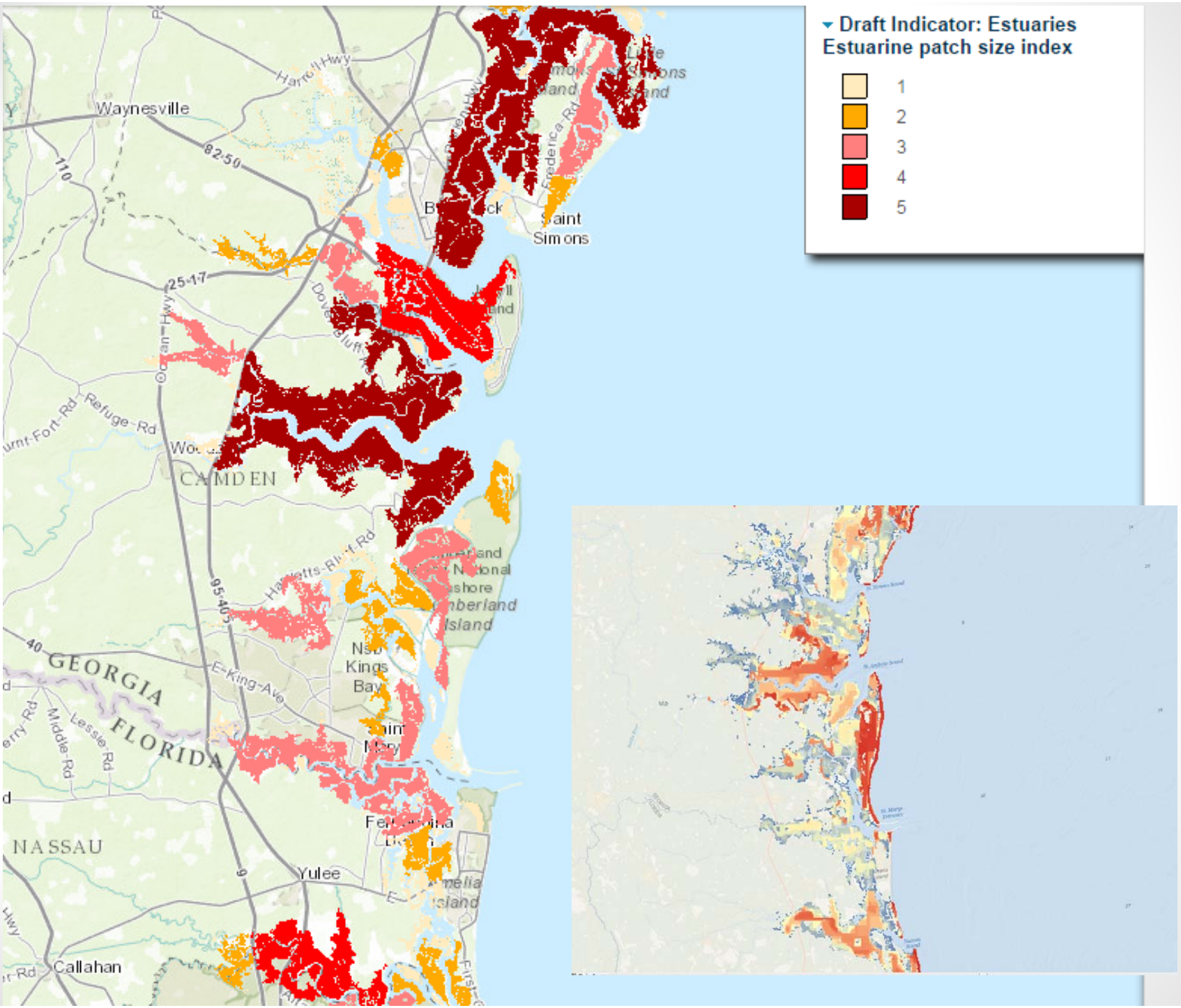
Indicator
Indicator
Indicator
Ecosystem integrity
Ecosystem integrity
Ecosystem priority
Ecosystem priority
Overall priority (baseline)


Draft Indicator: Estuaries
Estuarine patch size index
1
2
3
4
5
Waynesville
Harris Hwy
82-50
110
Saint Simons
25-17
Ocean Hwy
Dover Bluff
Refuge Rd
CAMDEN
Harrietts Bluff Rd
95-405
40
GEORGIA
FLORIDA
E King Ave
Kings Bay
Middle Rd
Lessie Rd
NASSAU
Yulee
Callahan


Draft Indicator: Estuaries
Estuarine patch size index
1
2
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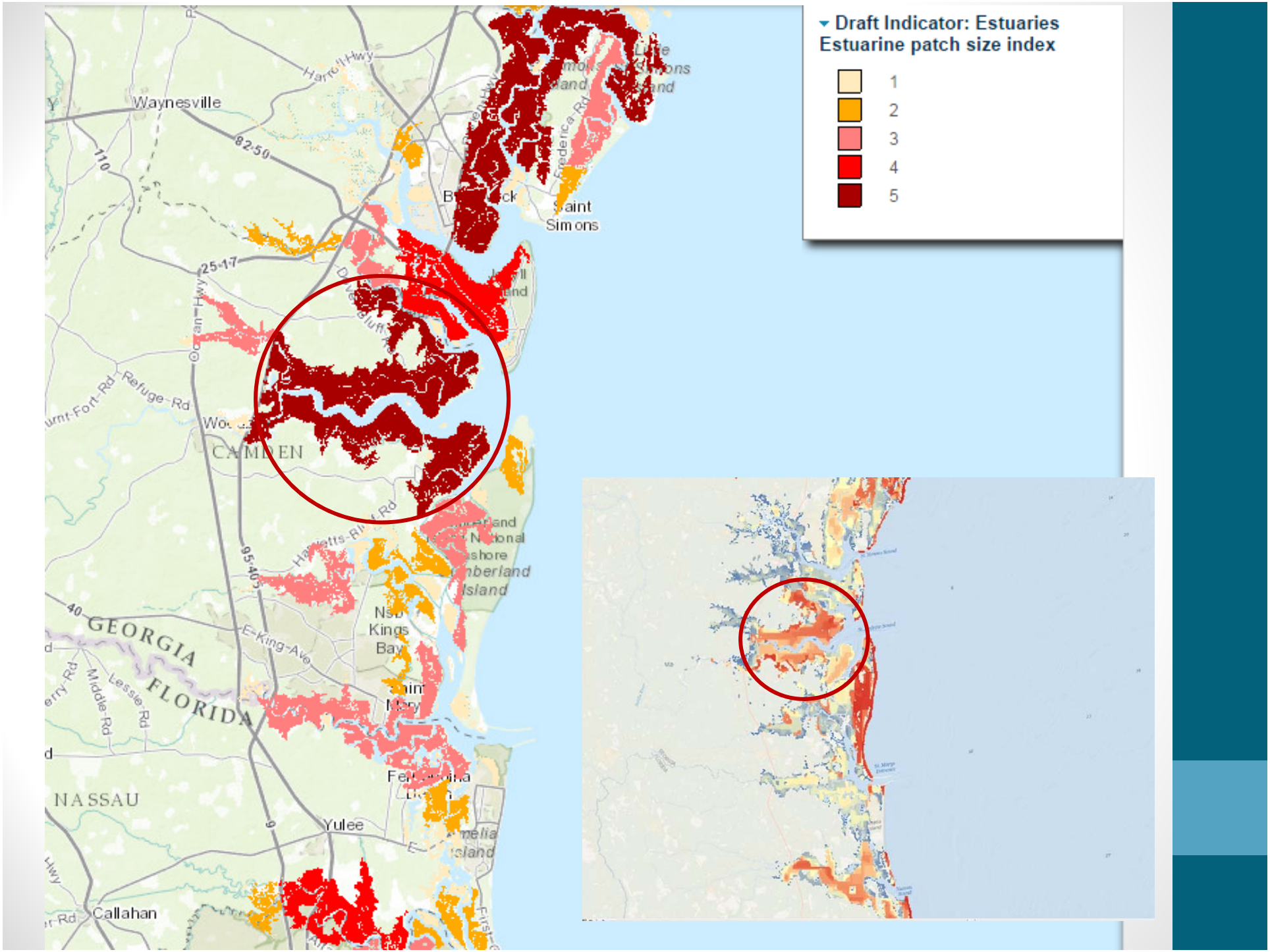
Waynesville
Saint Simons
CAMDEN
GEORGIA
FLORIDA
NASSAU
Yulee
Callahan
Kings Bay


Draft Indicator: Estuaries
Estuarine patch size index
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Waynesville
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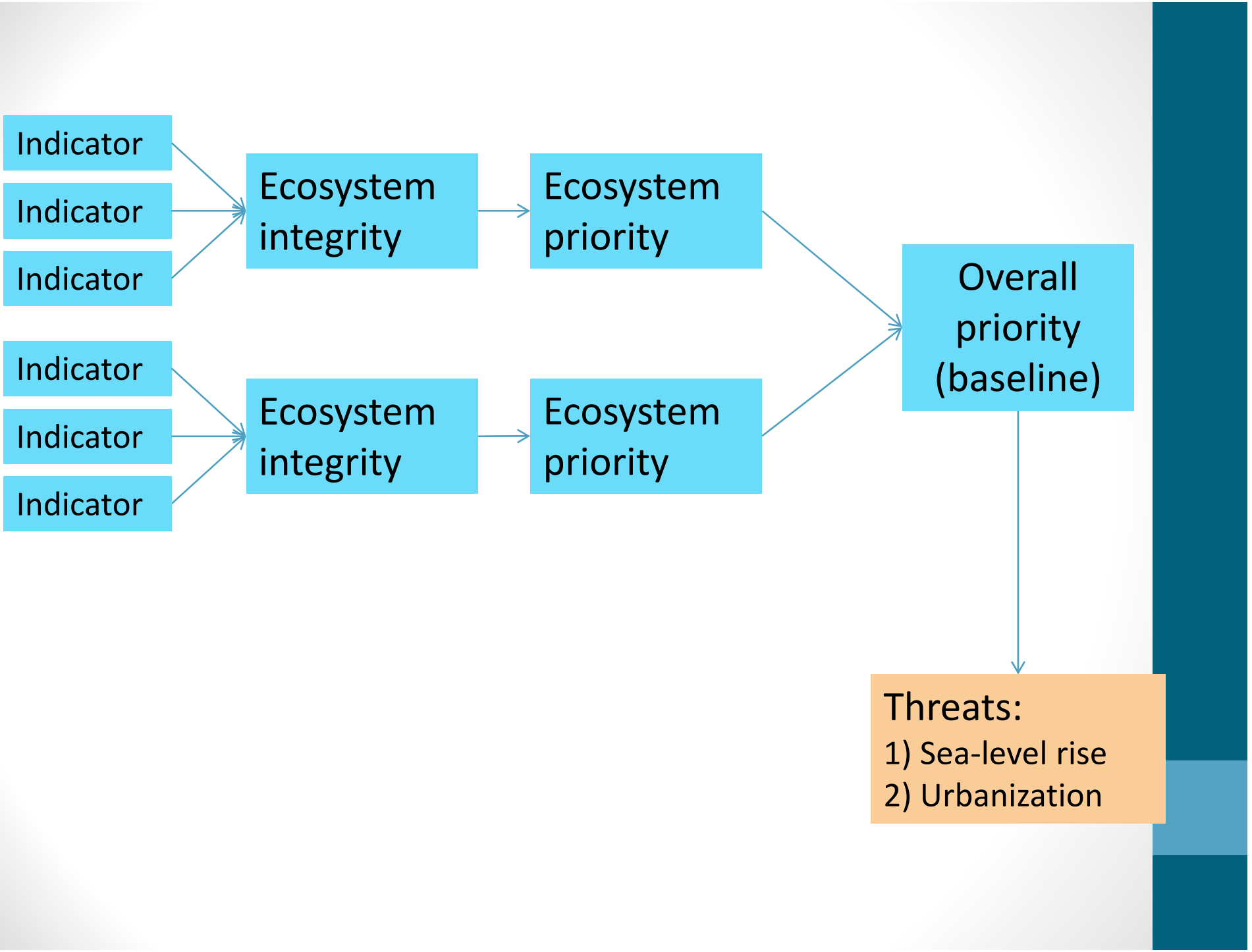
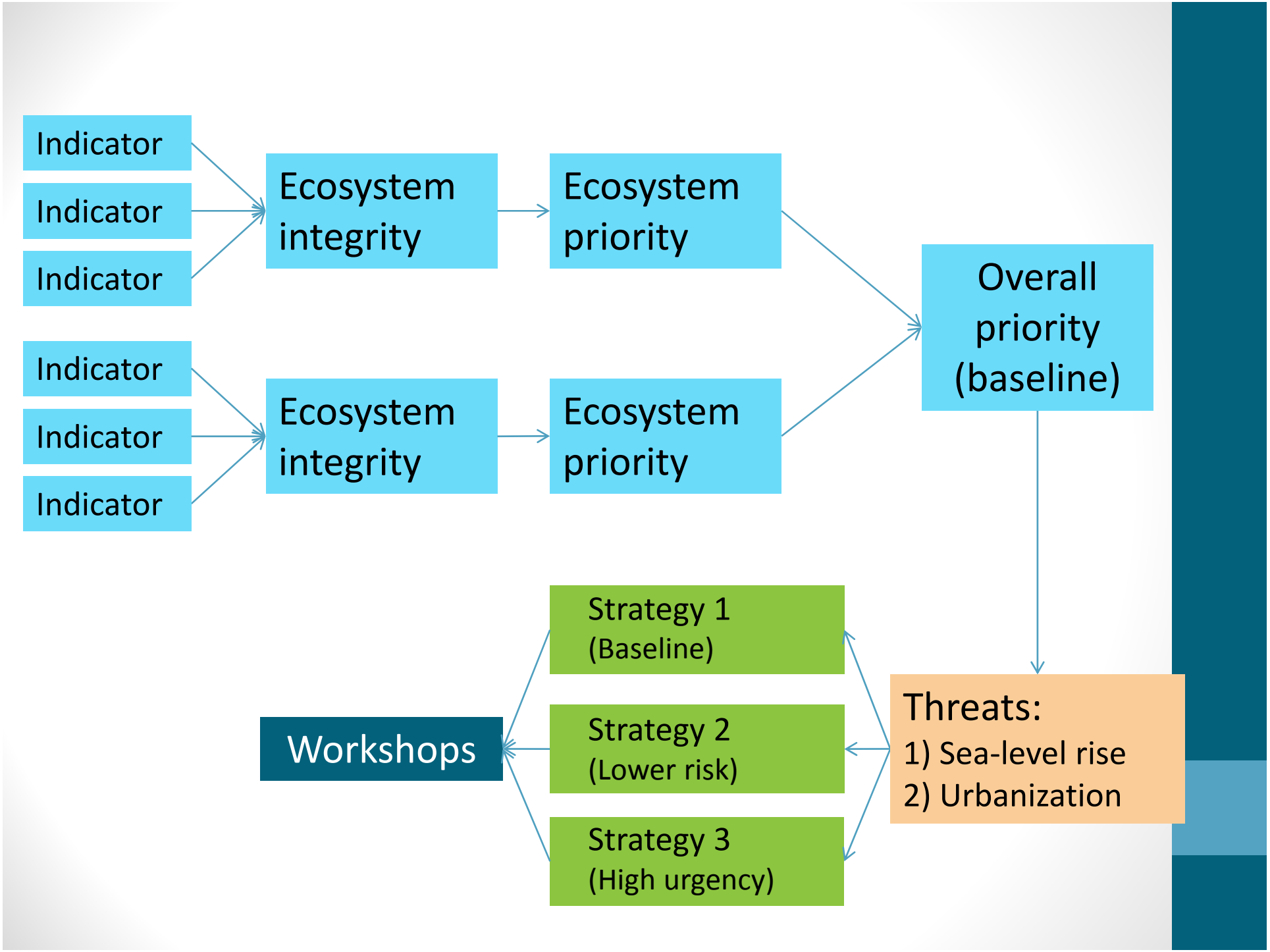
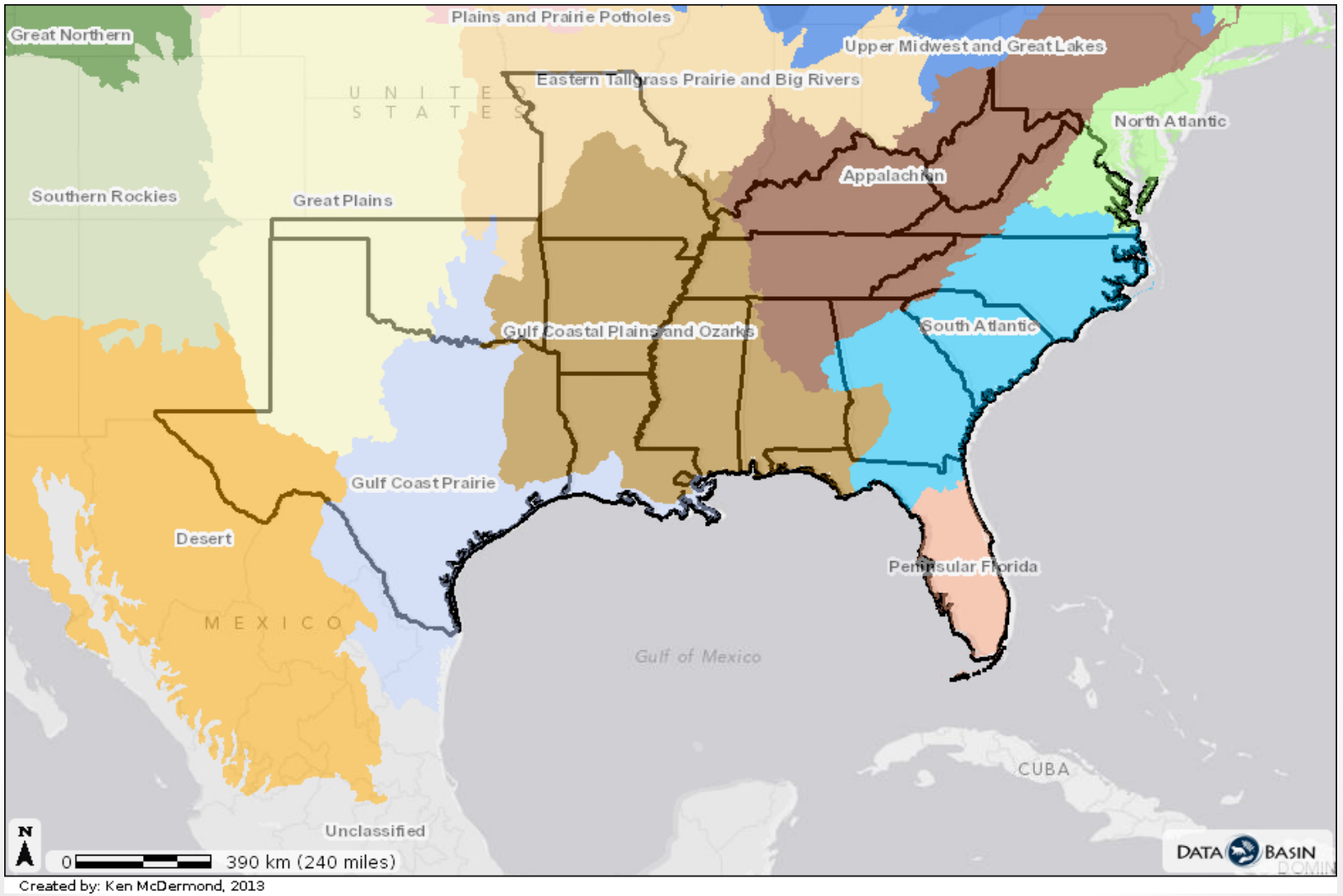
Kings Bay


Indicator
Indicator
Indicator
Indicator
Indicator
Indicator
Ecosystem integrity
Ecosystem integrity
Ecosystem priority
Ecosystem priority
Overall priority (baseline)
Threats:
1) Sea-level rise
2) Urbanization


Indicator
Indicator
Indicator
Ecosystem integrity
Ecosystem priority
Indicator
Indicator
Indicator
Ecosystem integrity
Ecosystem priority
Overall priority (baseline)
Strategy 1 (Baseline)
Workshops
Strategy 2 (Lower risk)
Strategy 3 (High urgency)
Threats:
1) Sea-level rise
2) Urbanization

Southeast Conservation Adaptation Strategy



Blueprint Workshops

- Atlanta, GA
  - Workshop #1: March 9, 2015 (9:00am – 3:30pm)
  - Workshop #2: March 10, 2015 (9:00am – 3:30pm)
- Tallahassee, FL
  - Workshop #3: March 11, 2015 (9:00am – 3:30pm)
  - Workshop #4: March 12, 2015 (9:00am – 3:30pm)
- Charleston, SC
  - Workshop #5: March 17, 2015 (9:00am – 3:30pm)
  - Workshop #6: March 18, 2015 (9:00am – 3:30pm)
- Raleigh, NC
  - Workshop #7: April 1 (9:00am – 3:30pm)
  - Workshop #8: April 2 (9:00am – 3:30pm)

How to get involved in your Cooperative

- Join the South Atlantic LCC web community
- Connect with a staff member
- Communicate with a Steering Committee member
- Join a team

http://southatlanticlcc.org

Questions?

- Hilary Morris, Blueprint User Support & Communications
- (919) 707-0252
- hilary_morris@fws.gov

- South Atlantic LCC webpage: www.southatlanticlcc.org
- LCC Network webpage: www.lccnetwork.org