

# Conservation In Transition: Adapting To Meet The Growing Challenges In Sustaining Fish & Wildlife

## Strategic Habitat Conservation

Final Report of the  
National Ecological  
Assessment Team

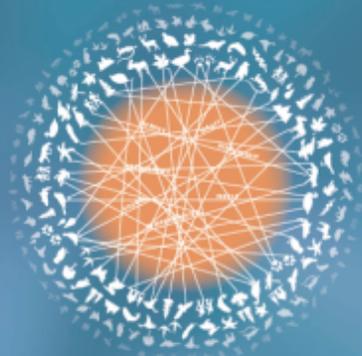
<http://www.fws.gov/landscape-conservation/shc.html>

## Leaders' Guide

Transformation of State Fish & Wildlife Agencies  
Ensuring the Future of Conservation in a Rapidly Changing World

## Conservation in Transition

Leading Change In the 21st Century



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**Strategic Habitat Conservation**  
Conserving the Nature of America

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**SHC APPROACH**

**Thinking Bigger for Fish and Wildlife**

Strategic Habitat Conservation  
Biological Planning  
Conservation Design  
Conservation Delivery  
Monitoring and Research

**Related Information:** FWS partners and biologist Greg Neudecker lead tour of Blackfoot Valley, Crested Butte, Idaho 11/20/10

In 2006, the U.S. Fish and Wildlife Service leadership endorsed **Strategic Habitat Conservation (SHC)** as the conservation approach the agency would use to achieve its mission in the 21st Century. In response to the unprecedented scale and complexity of challenges facing our natural resources, agency leaders saw the need to develop and implement a landscape approach to conservation that was more strategic, science-driven, collaborative, adaptive, and understandable. Indeed, throughout the conservation community, people are relying more and more on strategic approaches that apply advanced science and technologies to questions of how best to sustain conservation to sustain

**What's New:**  
[Surrogate Species Draft Technical Guidance](#) **NEW!**  
[SHC: Thinking Bigger for Fish and Wildlife Fact Sheet](#)  
[Building Capacity for Strategic Conservation through Training](#)

**Publications**  
[Strategic Habitat Conservation](#)

Southeast Region Workshop  
Moving Forward With Landscape-scale Conservation  
Lafayette, LA October 24 - 25, 2012

# Conservation In Transition: Adapting To Meet The Growing Challenges In Sustaining Fish & Wildlife

## Objectives:

- A Closer Look At The “Why”
- Defining The “What”: A Conservation Landscape of The Future
  - SHC: SECAS, LCCs, The Role of “Surrogate Species”
- And “How”: Building On Our Solid Foundation of Science and Land Management

# Drivers of Change

“OMG...Things are really really really not so good around the world and there’s a lot of hurt’n going on socially, economically, and ecologically. Know what I mean?,” Admiral Samuel J. Locklear, Commander Allied Joint Force Command, Naples. 2011



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# Drivers of Change

“The world we’re in today is undergoing as rapid a change as any in the history of mankind. Everything necessary to support the world’s population is changing at incredible rates causing increased pressure on the planet, environment, society and individuals in general,”

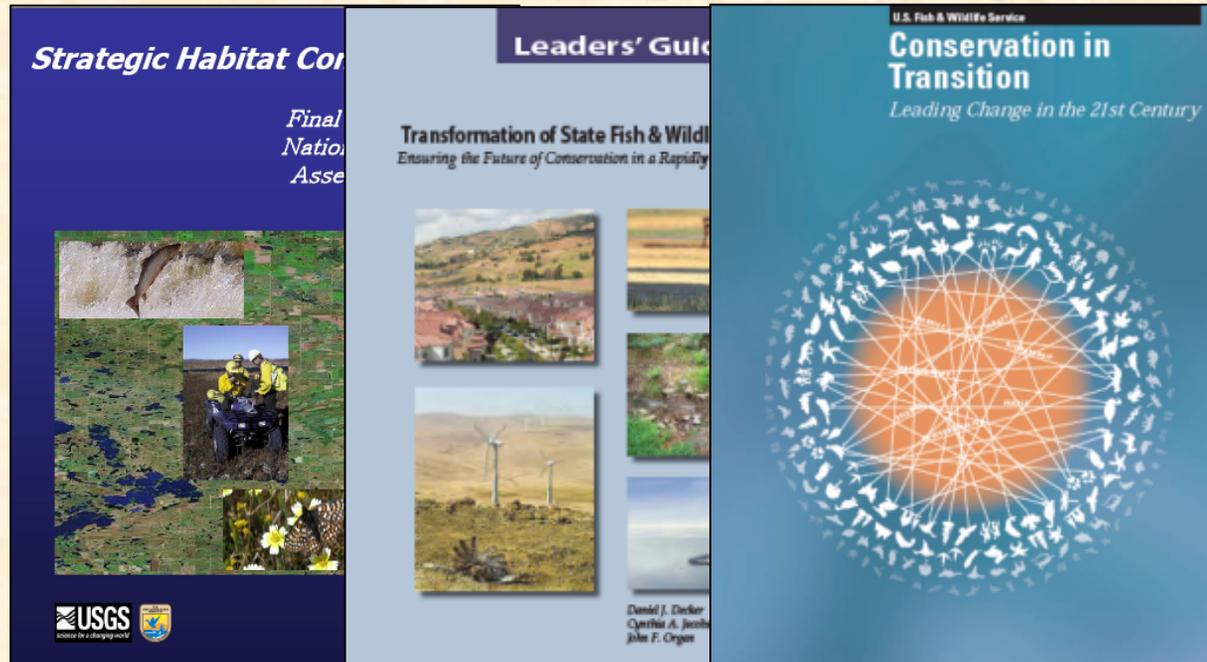
Admiral Samuel J. Locklear, Commander Allied Joint Force Command, Naples. 2011



“The conservation community faces unprecedented issues of scale, pace, and complexity in sustaining our Nation’s natural resources.”

“The conservation challenges of the 21<sup>st</sup> Century represent a force of change more far-reaching and consequential than any previously encountered.”

# Keeping Pace With Accelerating Change



Are Not The  
F&W Agencies of  
Yesterday

Fish & Wildlife  
Agencies Of Today...

Nor Will They Be  
The F&W Agencies  
of Tomorrow



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# Cape Romain National Wildlife Refuge

coastal South Carolina north of  
Charleston.

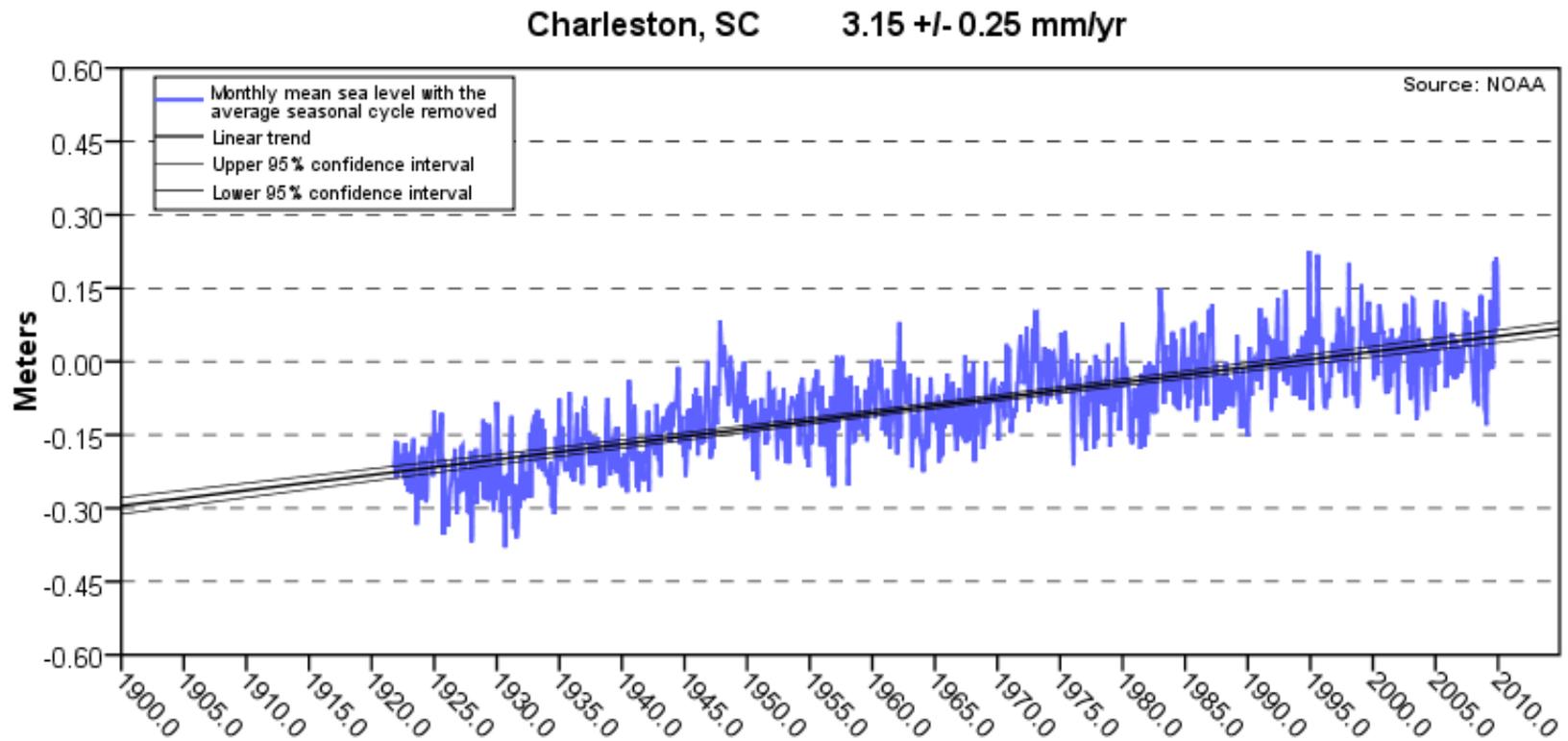
*Stories from the field . . . .contrasting  
the traditional and new challenges*



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# Sea Level Rise near Cape Romain NWR since 1923



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# Cape Romain NWR – Bulls Island

## Jacks Pond Levee 1953



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Open Field



# Cape Romain NWR – Bulls Island

## Jacks Pond Levee 1999



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# Cape Romain NWR – Bulls Island

## Jacks Pond Levee 2010



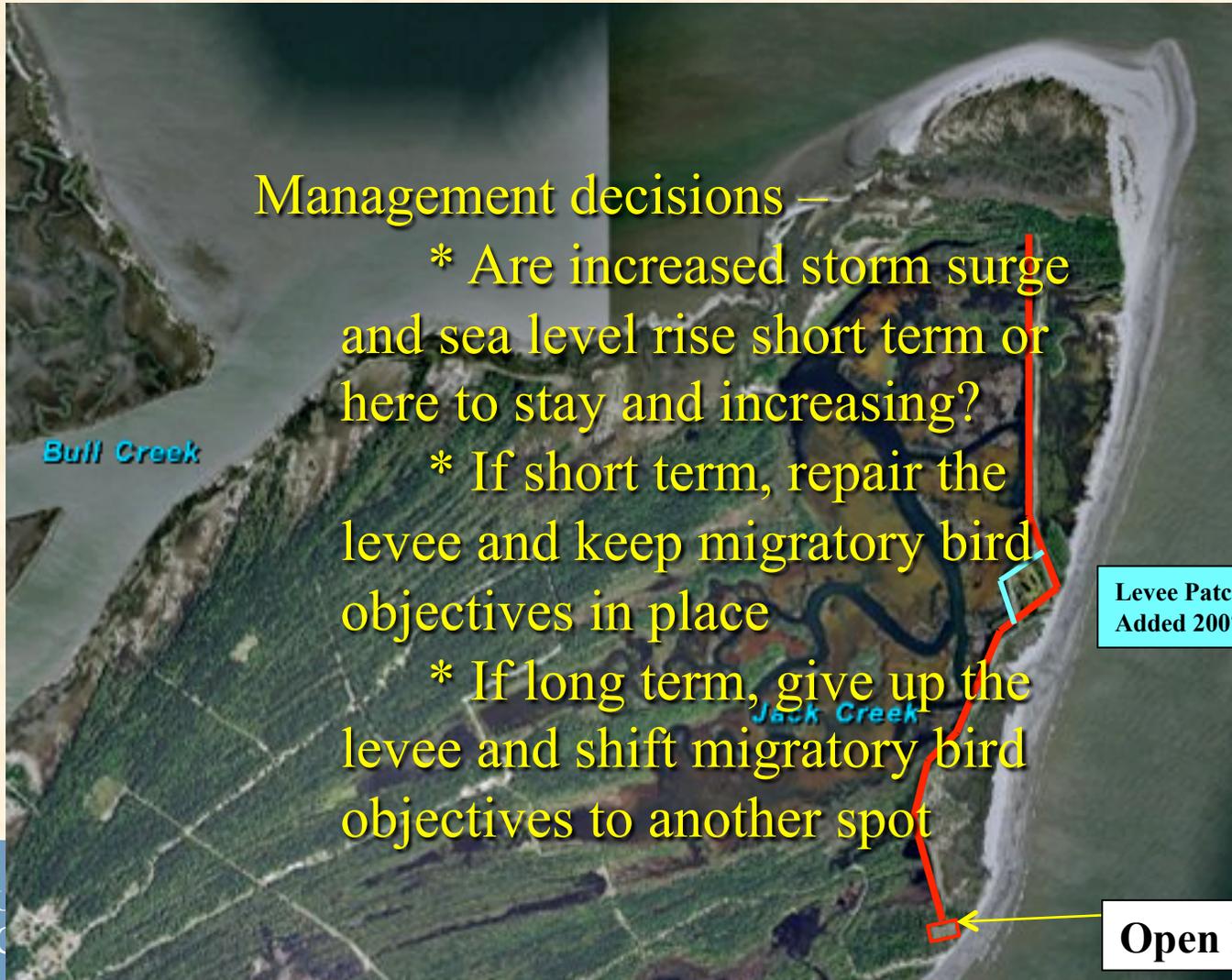
# Cape Romain NWR – Bulls Island Jacks Pond Levee 2010

## Management decisions –

- \* Are increased storm surge and sea level rise short term or here to stay and increasing?

- \* If short term, repair the levee and keep migratory bird objectives in place

- \* If long term, give up the levee and shift migratory bird objectives to another spot



# Cabo Rojo NWR Puerto Rico

- First Caribbean site designated as Western Hemisphere Shorebird Reserve Network (WHSRN) site
- Pre-historically to present, managed for salt extraction but now co-managed with NWR
- One connection to sea, water control and salt extraction sustainable and in place for at least 500 years.



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# Cabo Rojo NWR

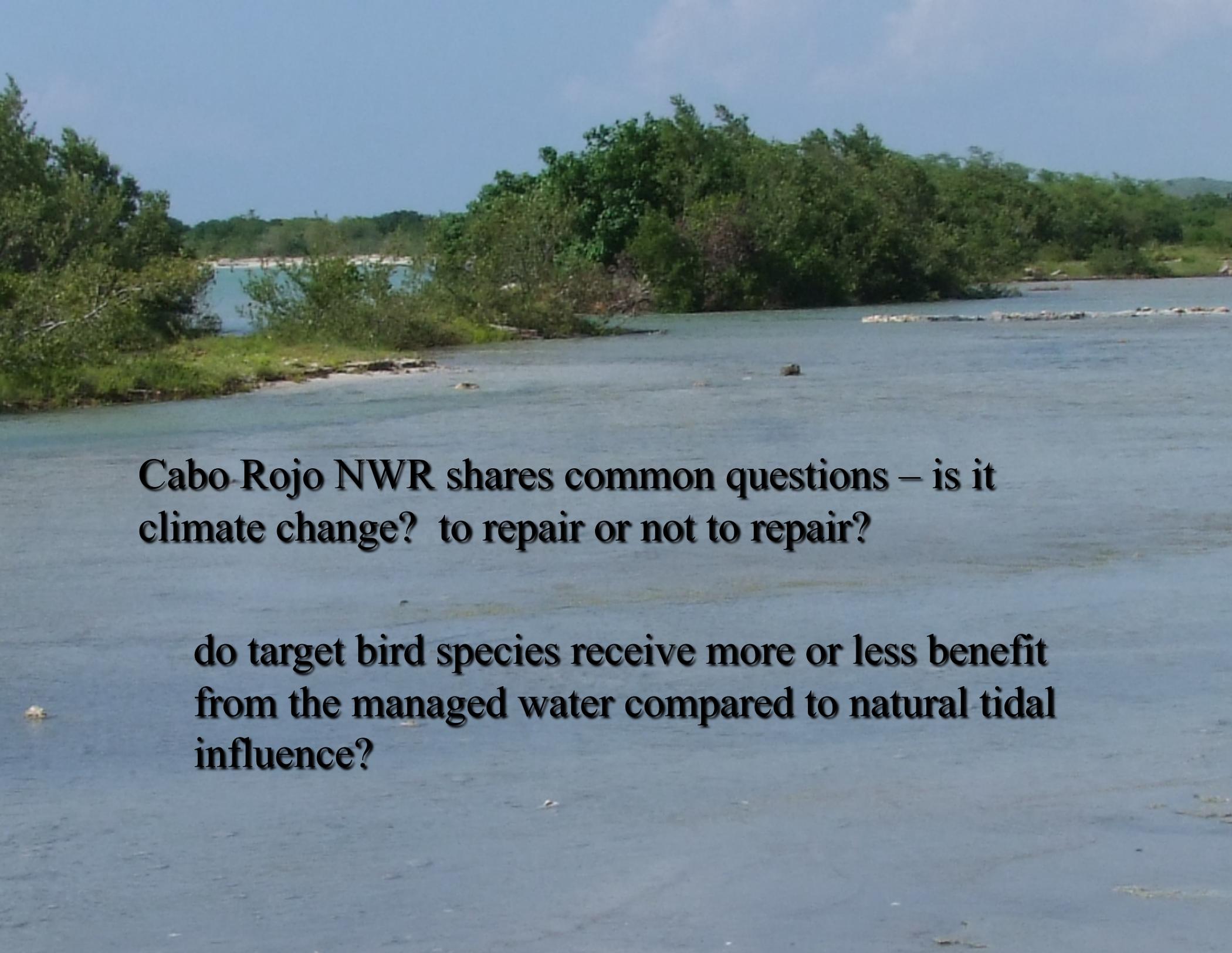


Salt collection frames

**Beach and dune destruction rapid in last 2 decades and soon will overcome dune**



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**Cabo Rojo NWR shares common questions – is it  
climate change? to repair or not to repair?**

**do target bird species receive more or less benefit  
from the managed water compared to natural tidal  
influence?**

# Tennessee National Wildlife Refuge

- Contribution to overwinter waterfowl objectives



- Invasive alligator weed impacts habitat management capacity



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# Invasive species

## Alligator Weed

- Increase in density a function of?:
- fewer consecutive freeze days?

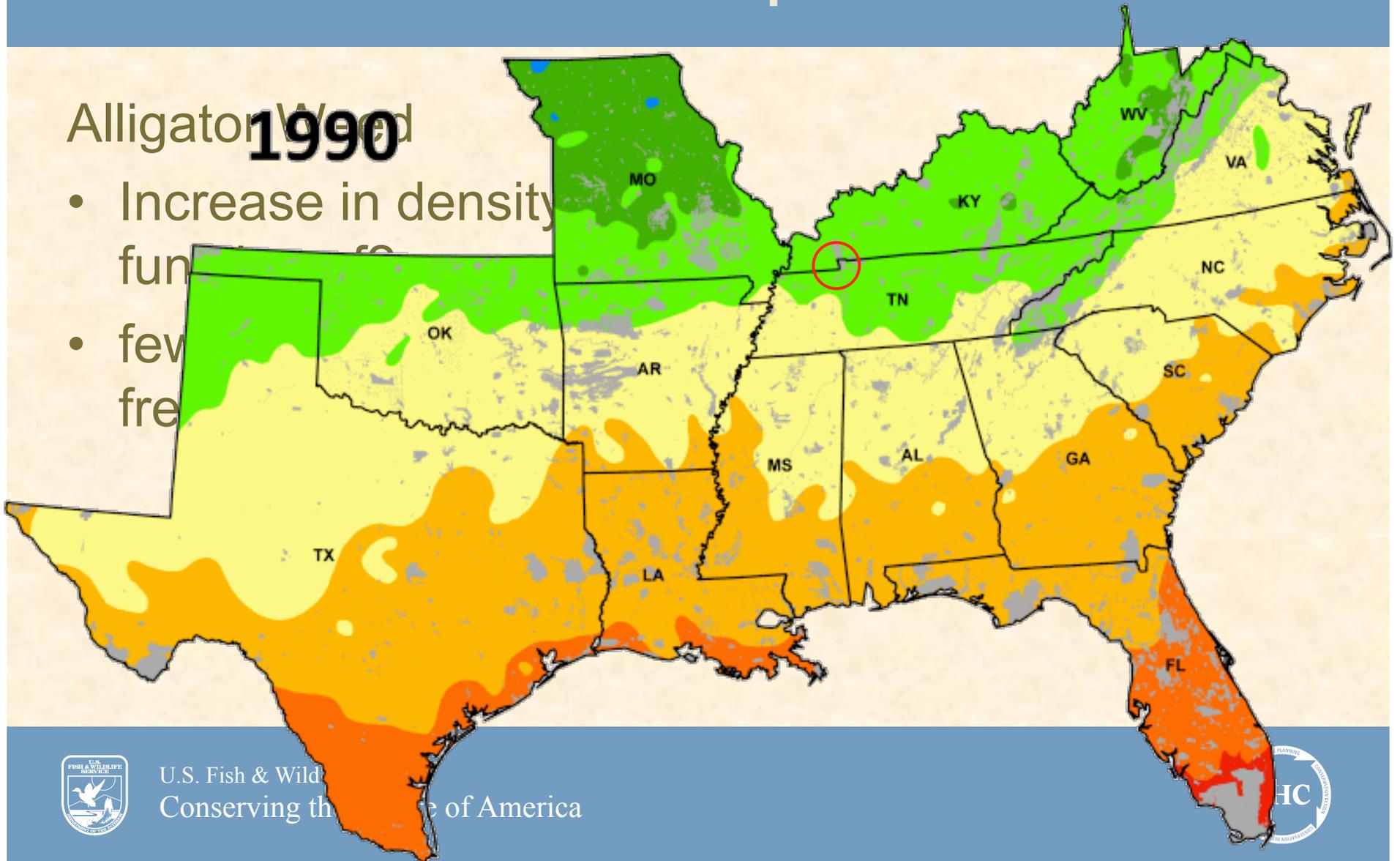


# Plant Hardiness Zones and Public Lands

## Invasive species

### Alligator Wood **1990**

- Increase in density
- few
- fre



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# Invasive species

## Alligator Weed

- Increase in density a function of?:
- fewer consecutive freeze days?
- Annual flood regime?
- Climate change?



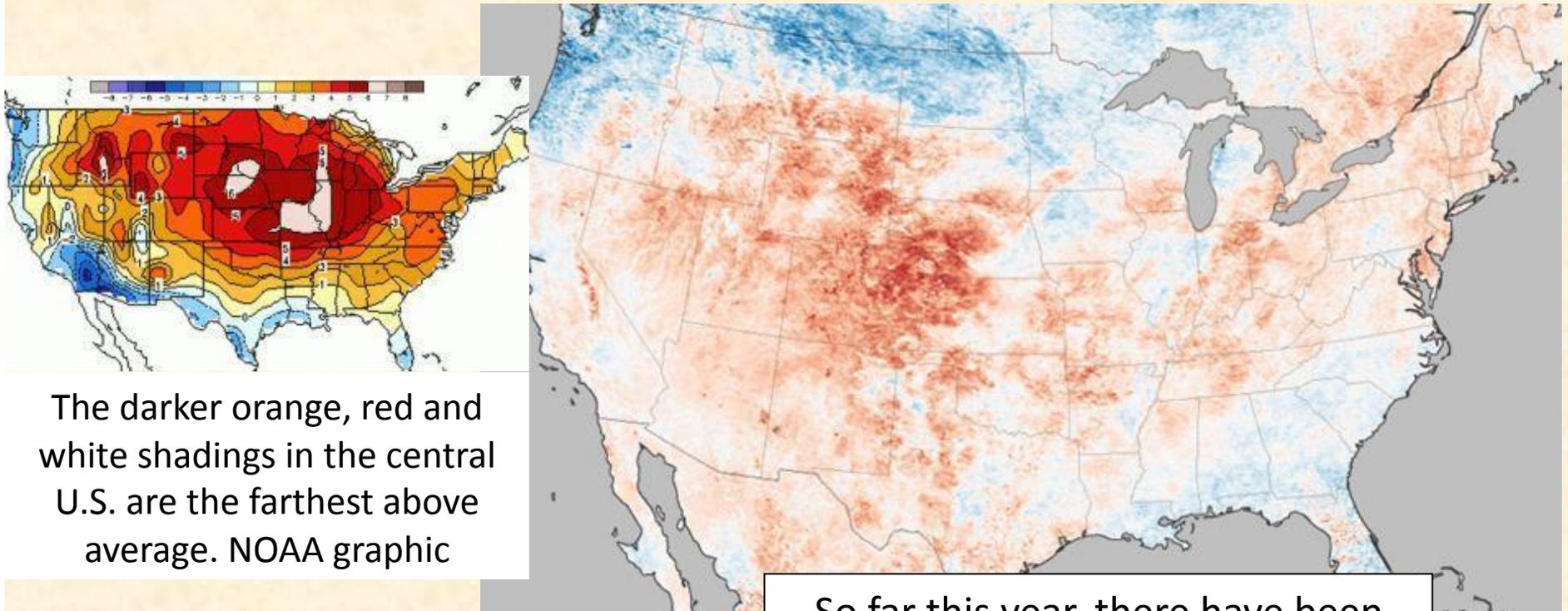
- All pertinent questions based on solid, long term observations, by informed and resource savvy land managers and biologists . . .
  - What about the “landscape” context of individual management questions and actions?



# Changing Climate

Heat Wave Sweeping Across the United States June 26, 2012. (NASA)

Read more: <http://www.foxnews.com/scitech/2012/07/03/what-behind-record-heat/#ixzz22KIX2MJg>



The darker orange, red and white shadings in the central U.S. are the farthest above average. NOAA graphic

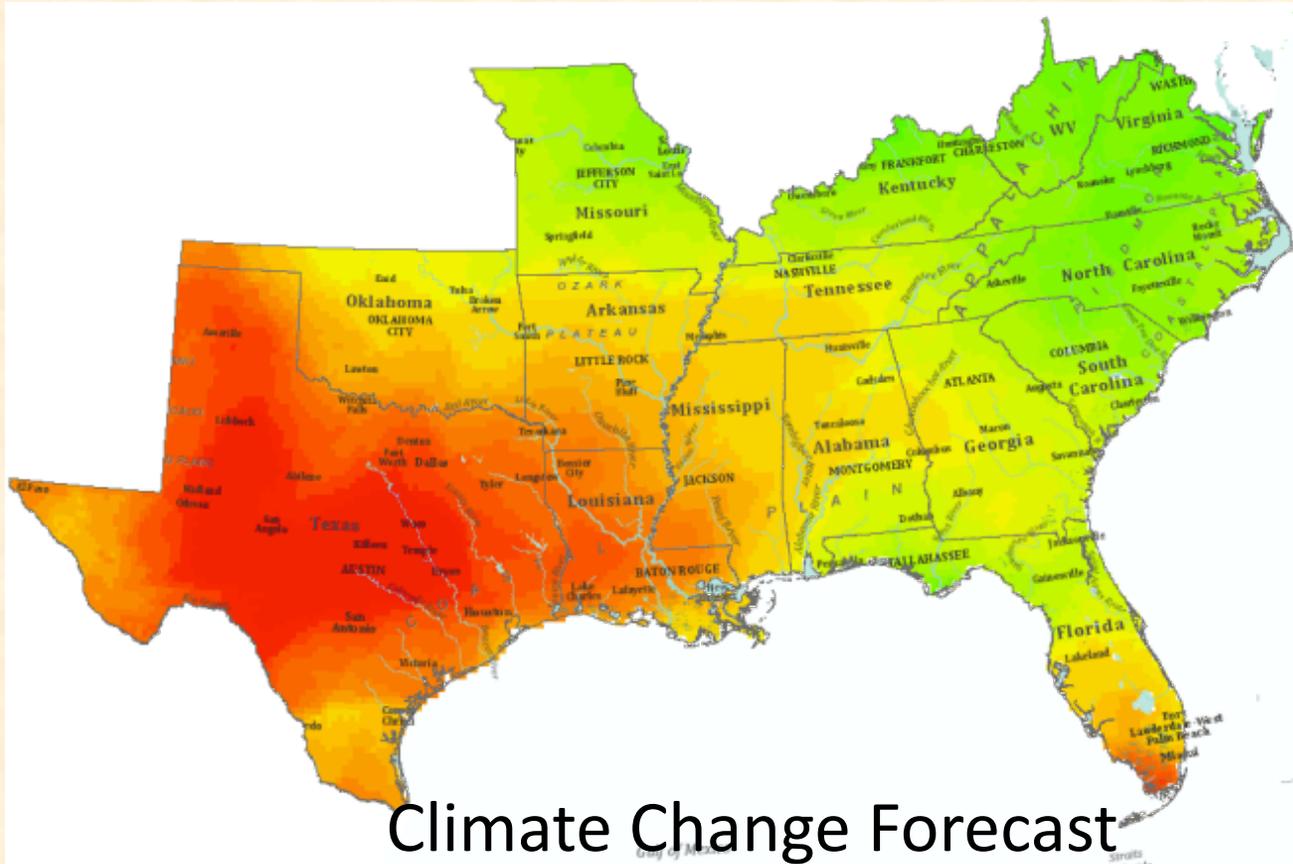
So far this year, there have been 40,113 high temperature records set or tied, compared with just 5,835 cold records



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# Changing Climate

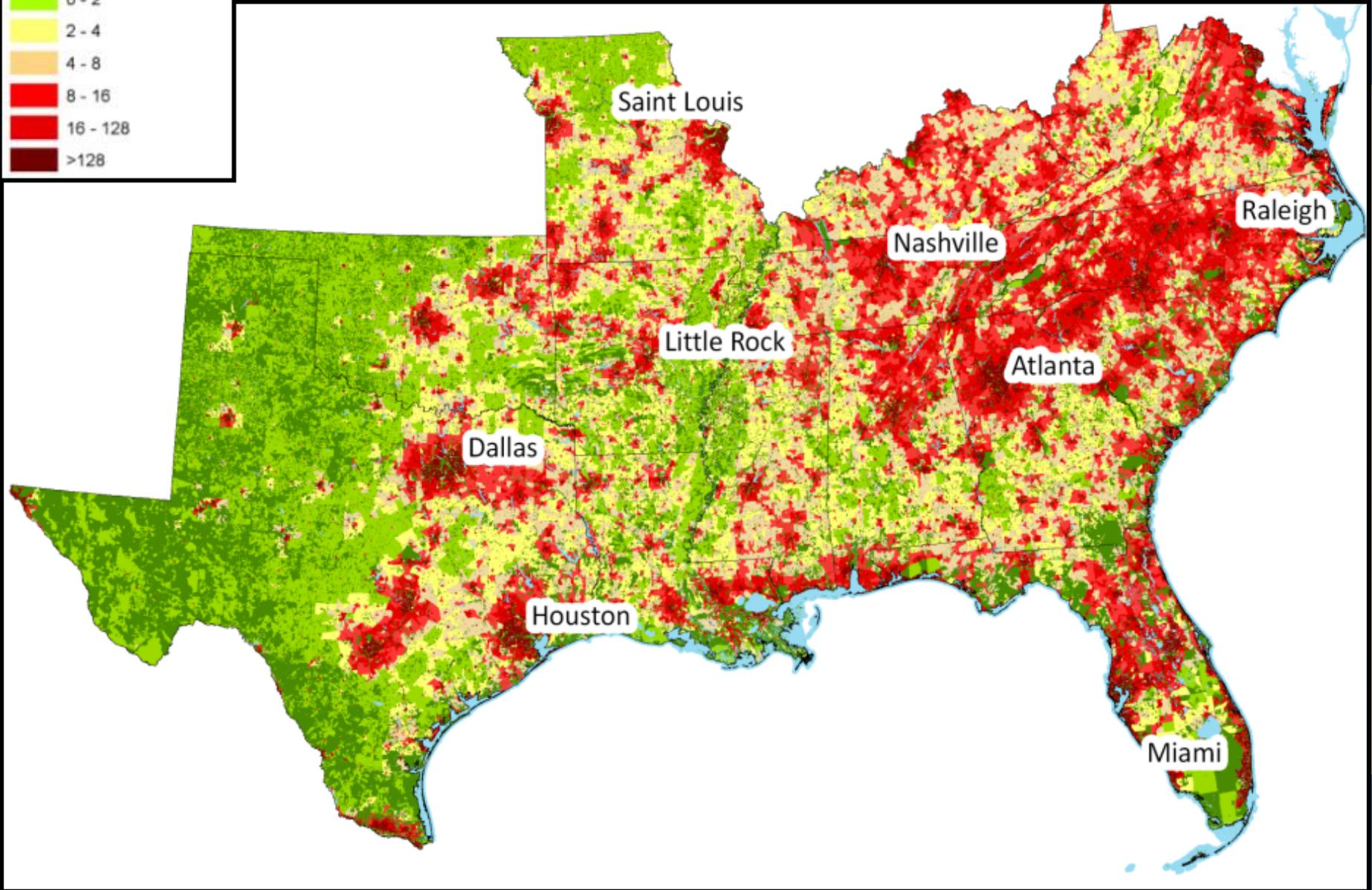


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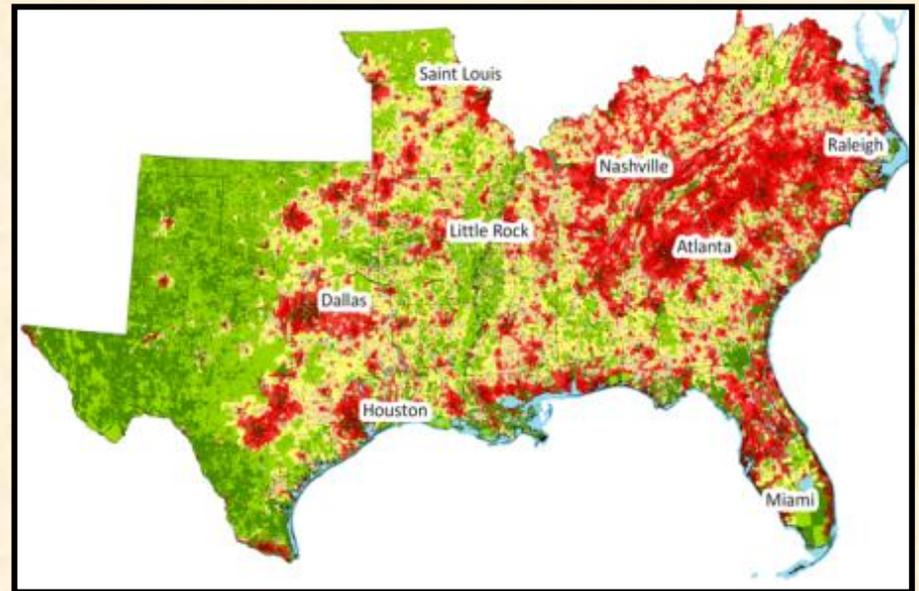
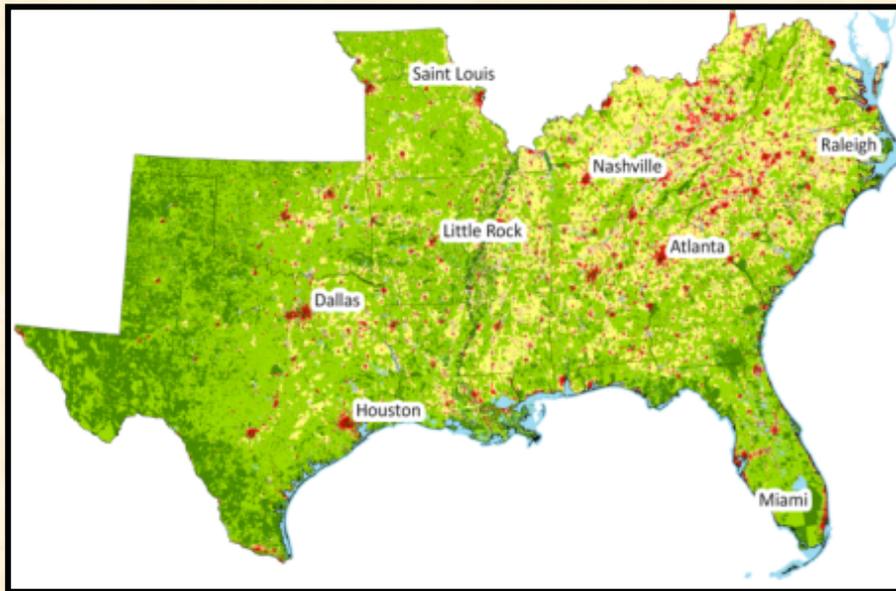
# A changing landscape...

**2030**



# Landscape Changers Impacting The Future Of Fish & Wildlife Conservation

If I knew then what I know now??



Urban Growth: 1940 - 2030

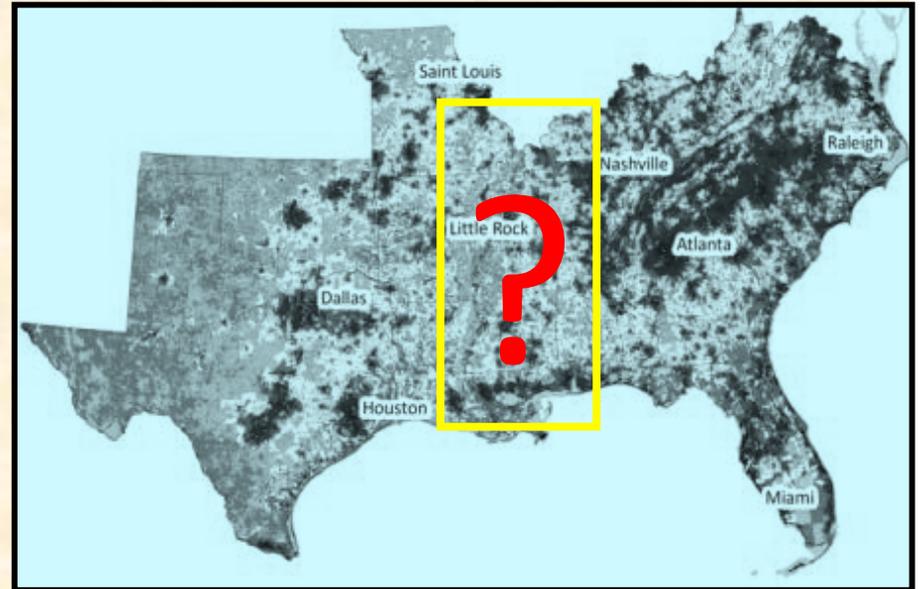
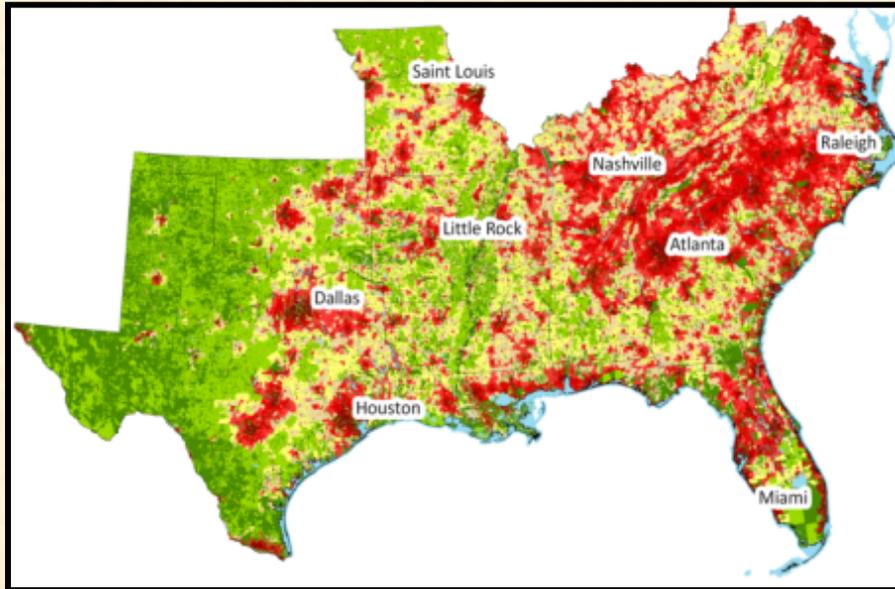


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# Landscape Changers Impacting The Future Of Fish & Wildlife Conservation

We have a choice: remain reactive or get ahead of the curve – what tools are available or can be developed to “see” tomorrow?



Urban Growth: 1930 – 20xx



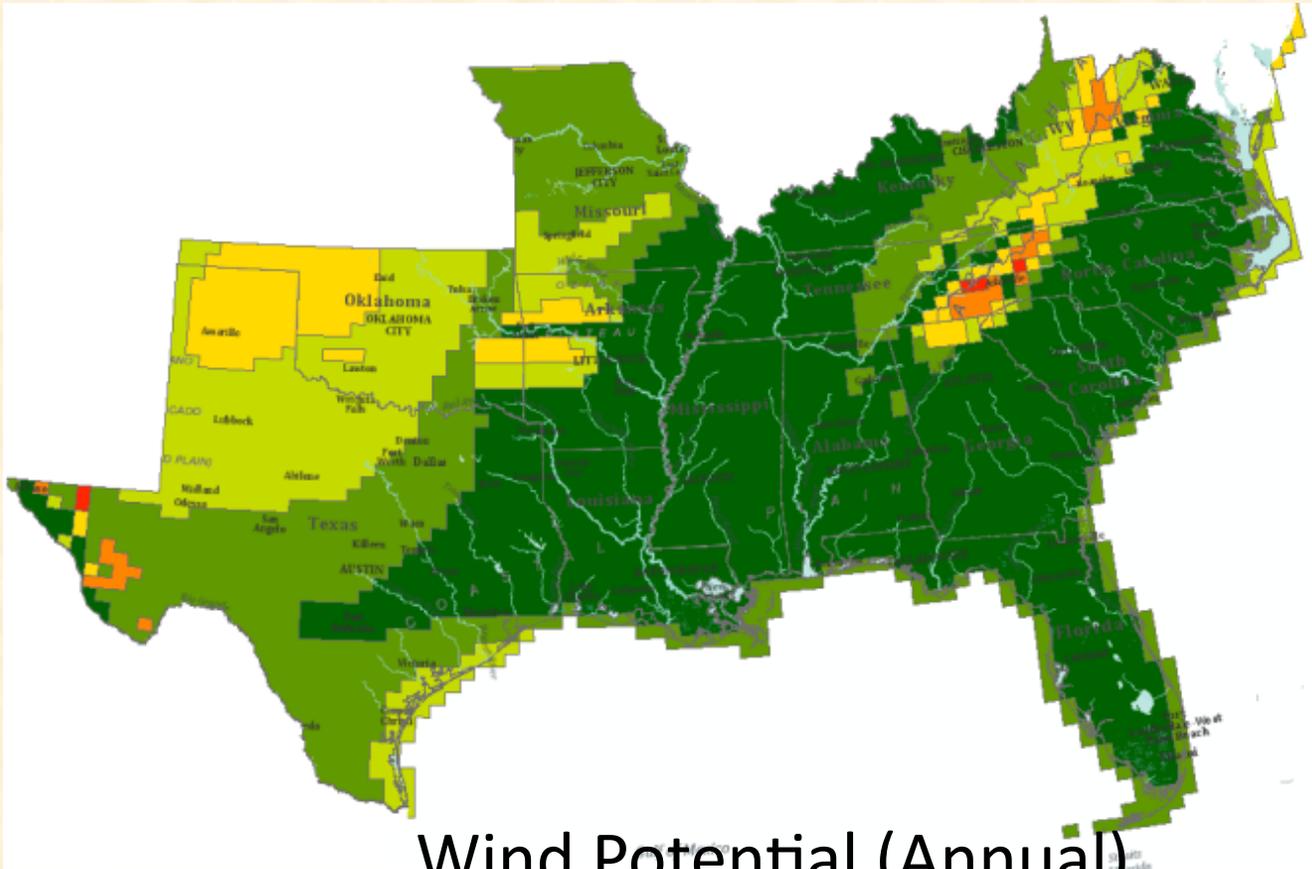
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# Global Energy Consumption and Dynamics

- Demand for electricity in US has increase 136% since 1970.
- Global demand for energy is estimated to increase 35% by 2035.
- In 2009, shale gas made up 14% of the US gas supply produced; expected to increase to 45% by 2035.
- Natural gas from unconventional sources will satisfy more than 50% of United States demand by 2030.
- Wind energy is one of the fastest growing sources of energy in the world. In US 2010 ~2.3%. By 2030 ~20% (USDOE)
- Solar has been expanding at a average pace of 40% per year.
- Solar energy could grow to meet 10% of the nation's power needs by 2025.

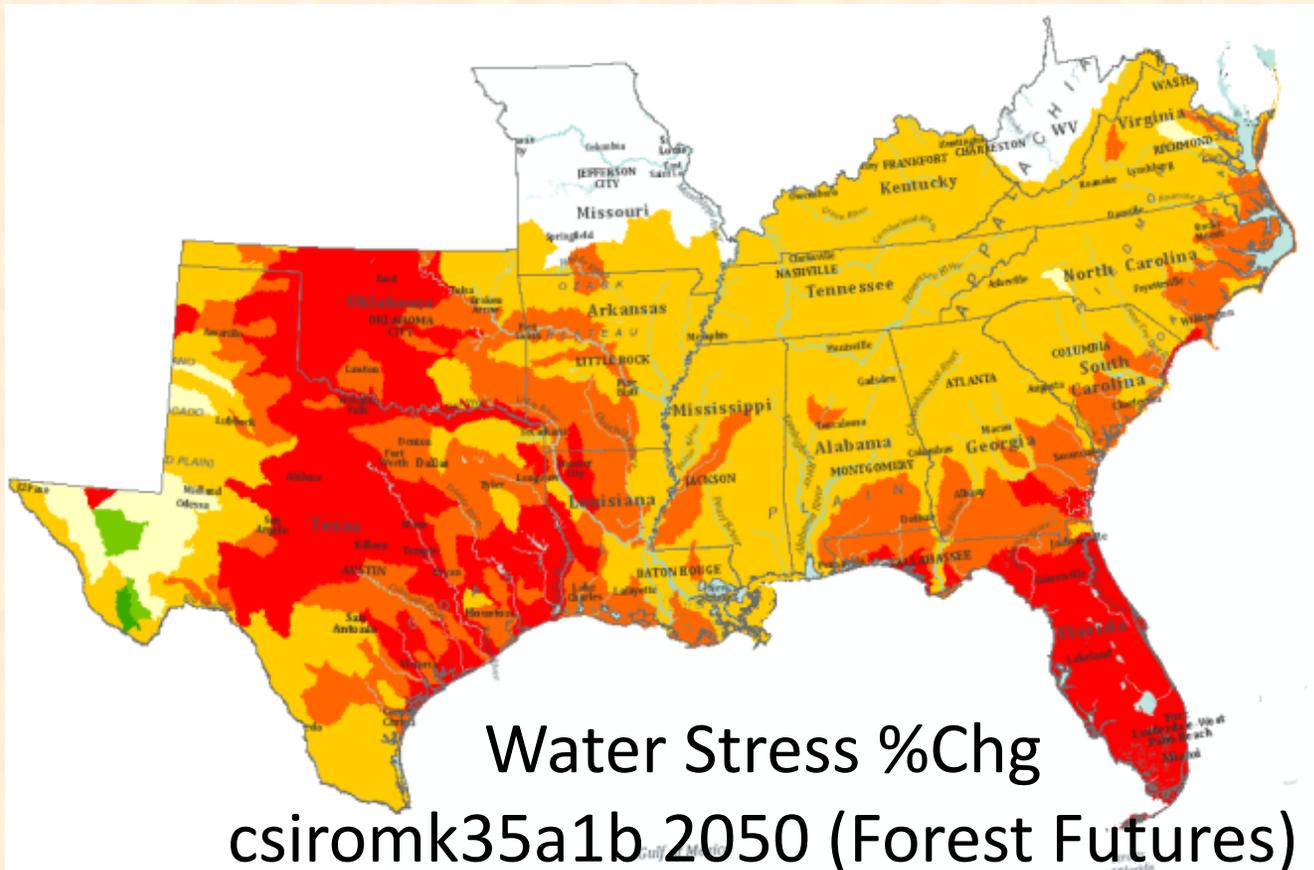
# Global Energy Consumption and Dynamics



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# Global Energy Consumption and Dynamics



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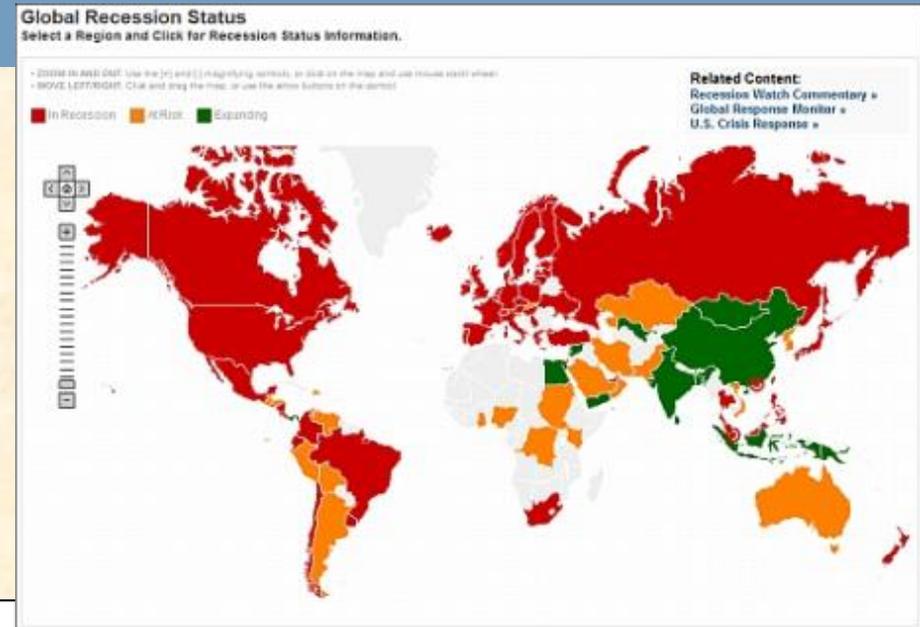
– What about the “landscape” context of individual management questions and actions?



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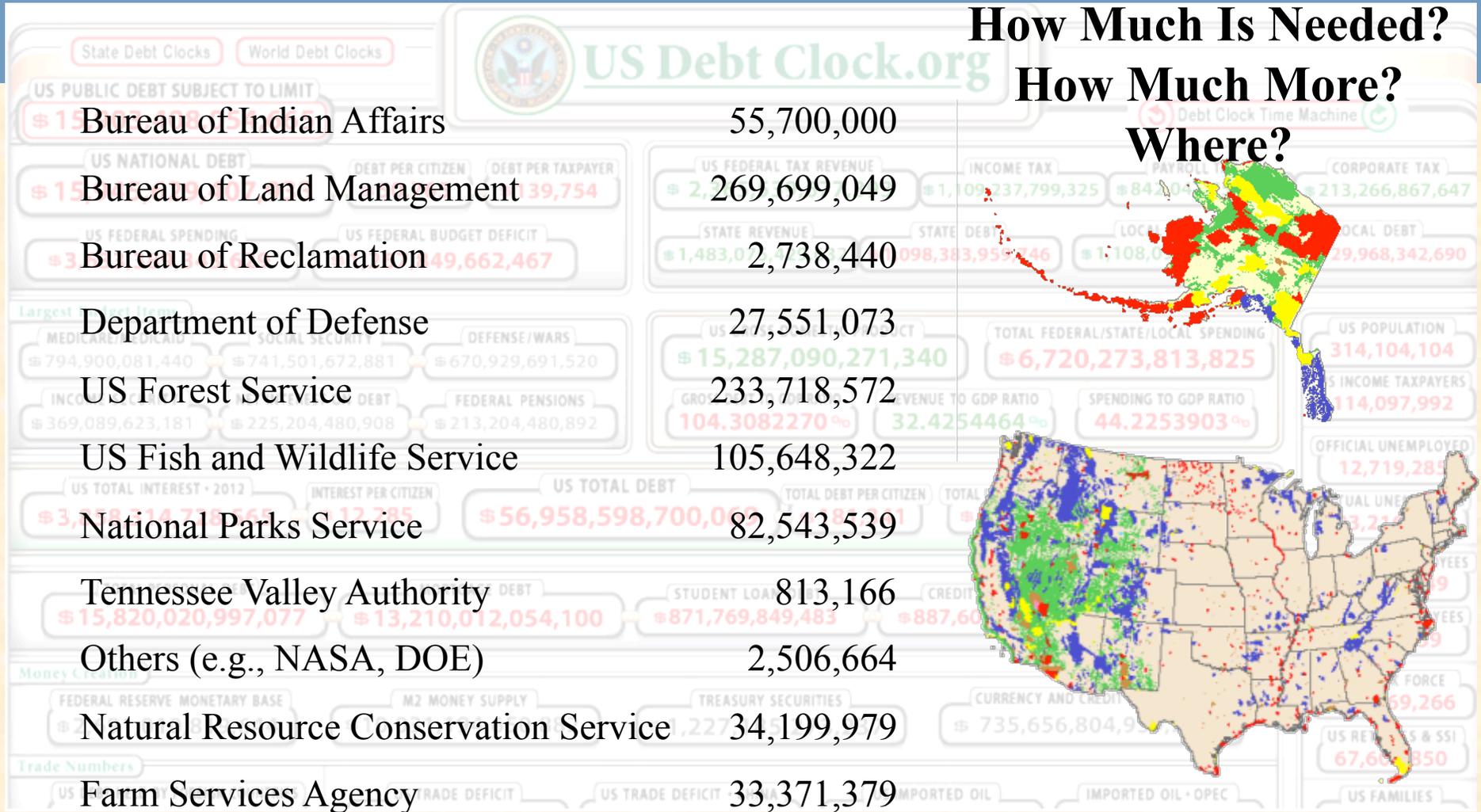


# Economy & Fiscal Accountability



# Economy & Fiscal Accountability

**How Much Is Needed?  
How Much More?  
Where?**



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**848,490,183**



# What: Foundation Concepts of SHC

- **Conservation Target:** Landscapes that can sustain populations of fish and wildlife resources.
  - How Much, How Much More, and Where?
- **Science:** As a body of knowledge and as a method of discovery:
  - Learning Becomes an explicit objective of management.
- **Landscape:** Land management occurs at the site scale; yet ecological outcomes are system dependent, operating on processes manifested at broader spatial and temporal scales.
  - Addressing the Challenges of Scale
- **Interdependence:** Goals and objectives of functional landscapes to sustain fish and wildlife exceed the operational reach of individual programs, agencies, and organizations
  - Collaboration++



# Collaboratively Defining a Future Conservation Landscape in the Southeastern US



## **Southeast Conservation Adaptation Strategy**

**A Unifying Response  
Commensurate with the  
Growing Challenges**

Ed Carter, Executive Director  
Tennessee Wildlife Resources Agency  
Southeast Natural Resource Leadership Group  
May 23, 2012  
Chattanooga, Tennessee



# Critical Elements of an Adaptation Strategy

## 1. Explicit Objectives and Measures of Success (Conservation Targets)

- Species, habitats, ecological processes



# Its Not About A "Plan"

## Its About A Way of Working



# The “How”: Our mission does not change, our way of looking at the world has to change

**FWS Mission:** Working with others to conserve, protect and enhance fish, wildlife, and plants and their habitats for the continuing benefit of the American people.

**Conservation Objective:** Characterize and maintain functional landscapes capable of supporting self-sustaining fish, wildlife, and plant populations.

**Functioning Landscapes:** lands and waters with the properties and elements required to support desirable populations of fish and wildlife, while also providing human society with desired goods and services, including food, fiber, water, energy, and living space.

Dan Ashe, Director  
US Fish & Wildlife Service  
2012



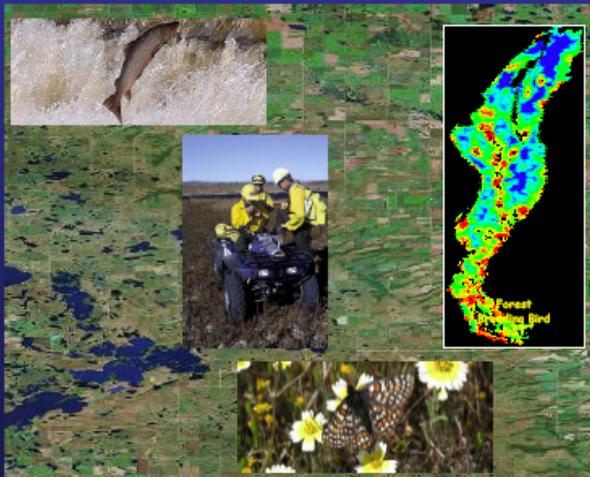
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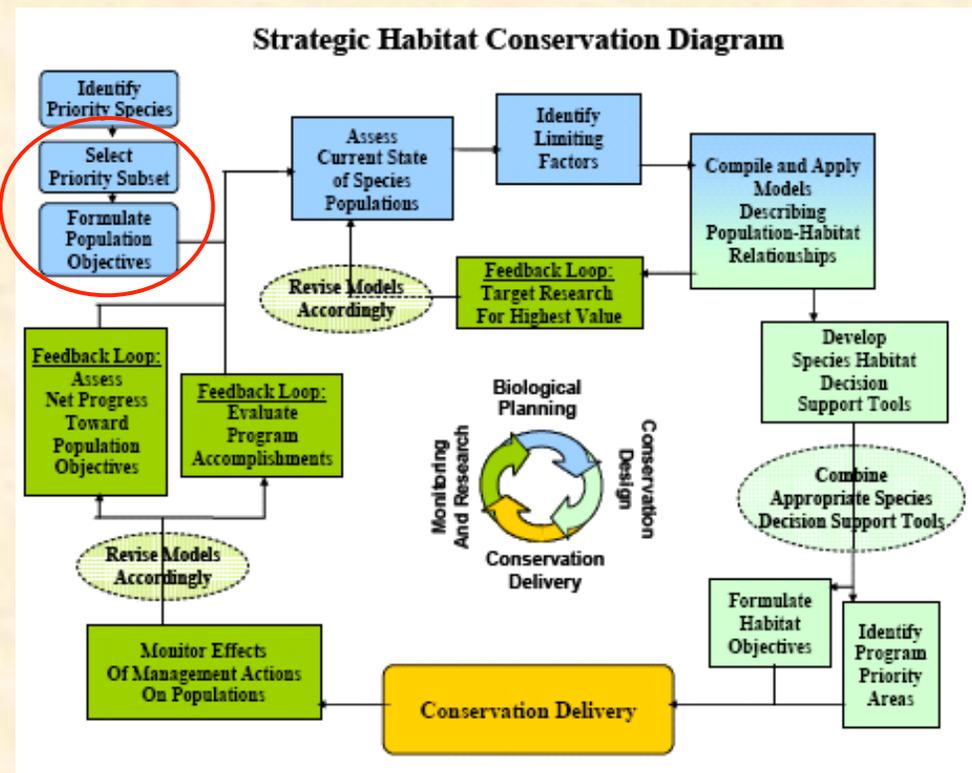
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## Strategic Habitat Conservation

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July 2006



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# Collaboratively Defining a Future Conservation Landscape in the Southeastern US

## 1. Explicit Objectives and Measures of Success (Conservation Targets)

- Species, habitats, ecological processes

\* can the use of surrogate species help us “see” the changes?

\* performance and accountability of investments?

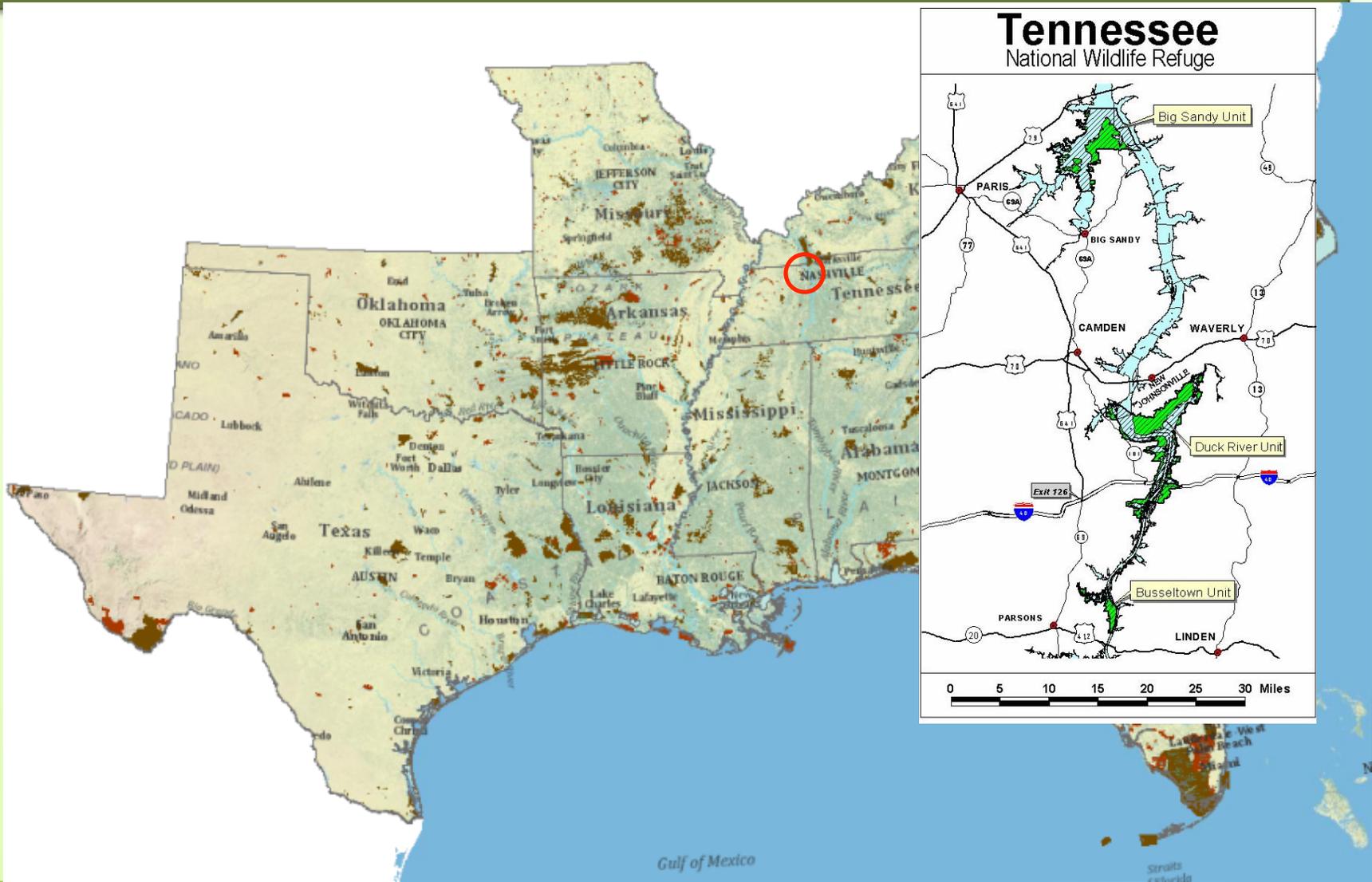
- **BIOLOGICAL OUTCOMES**

**How Much, How Much More, and Where?**



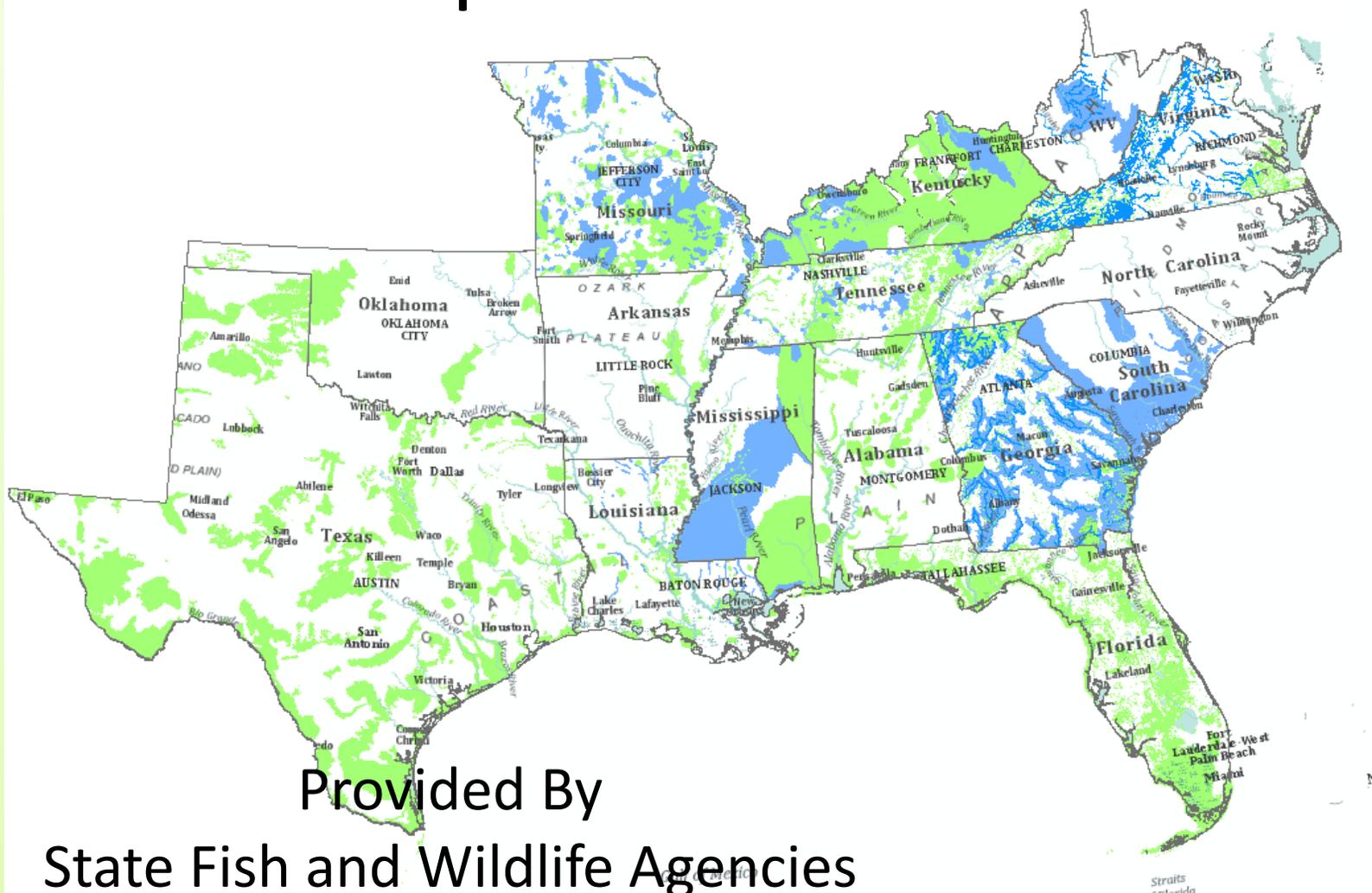
# Building On The Foundation

## Current Conservation Estate

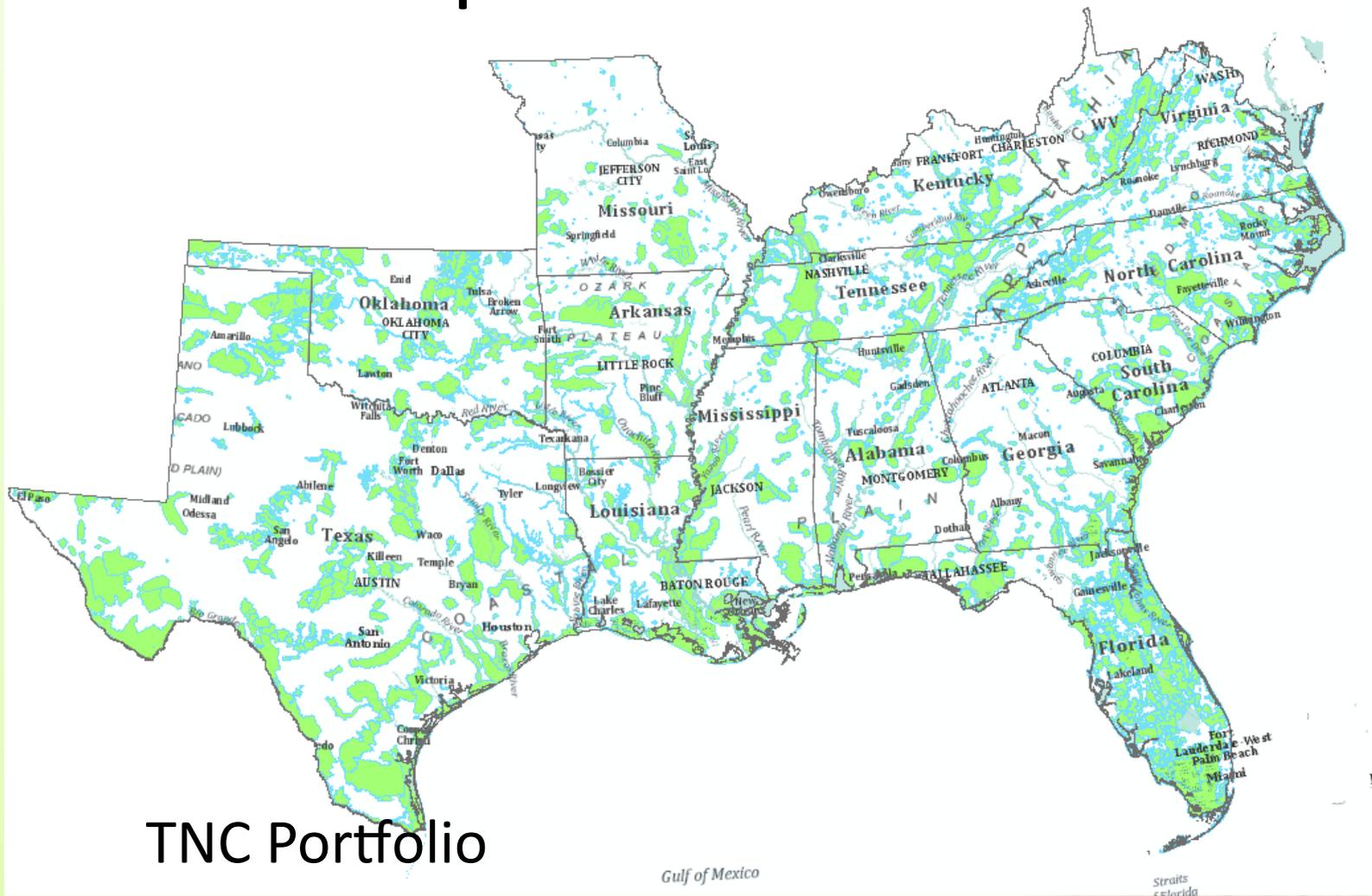




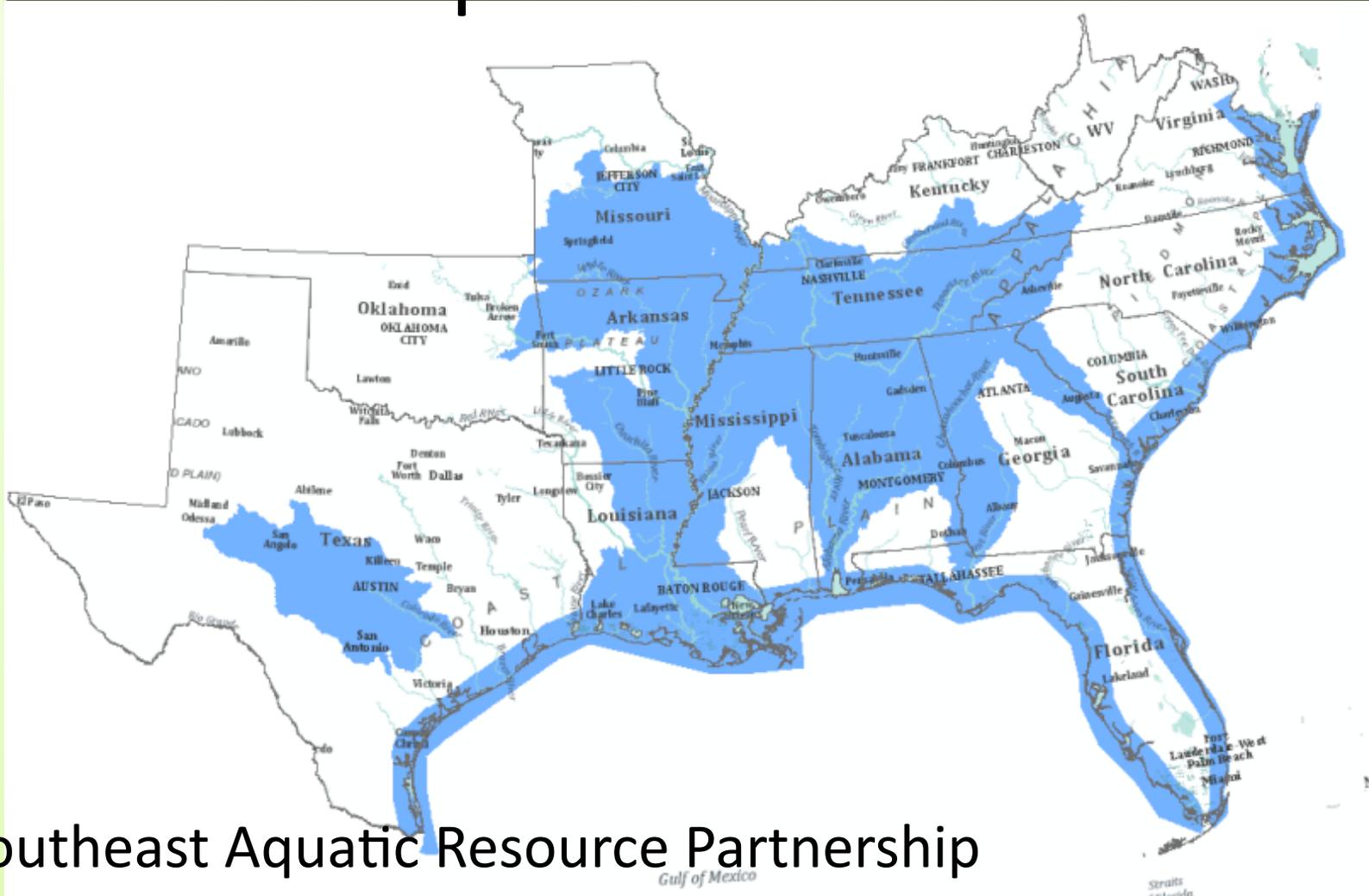
# An Incomplete & “Un-proved” Snapshot of Areas Important for Conservation



# An Incomplete & “Un-proofed” Snapshot of Areas Important for Conservation

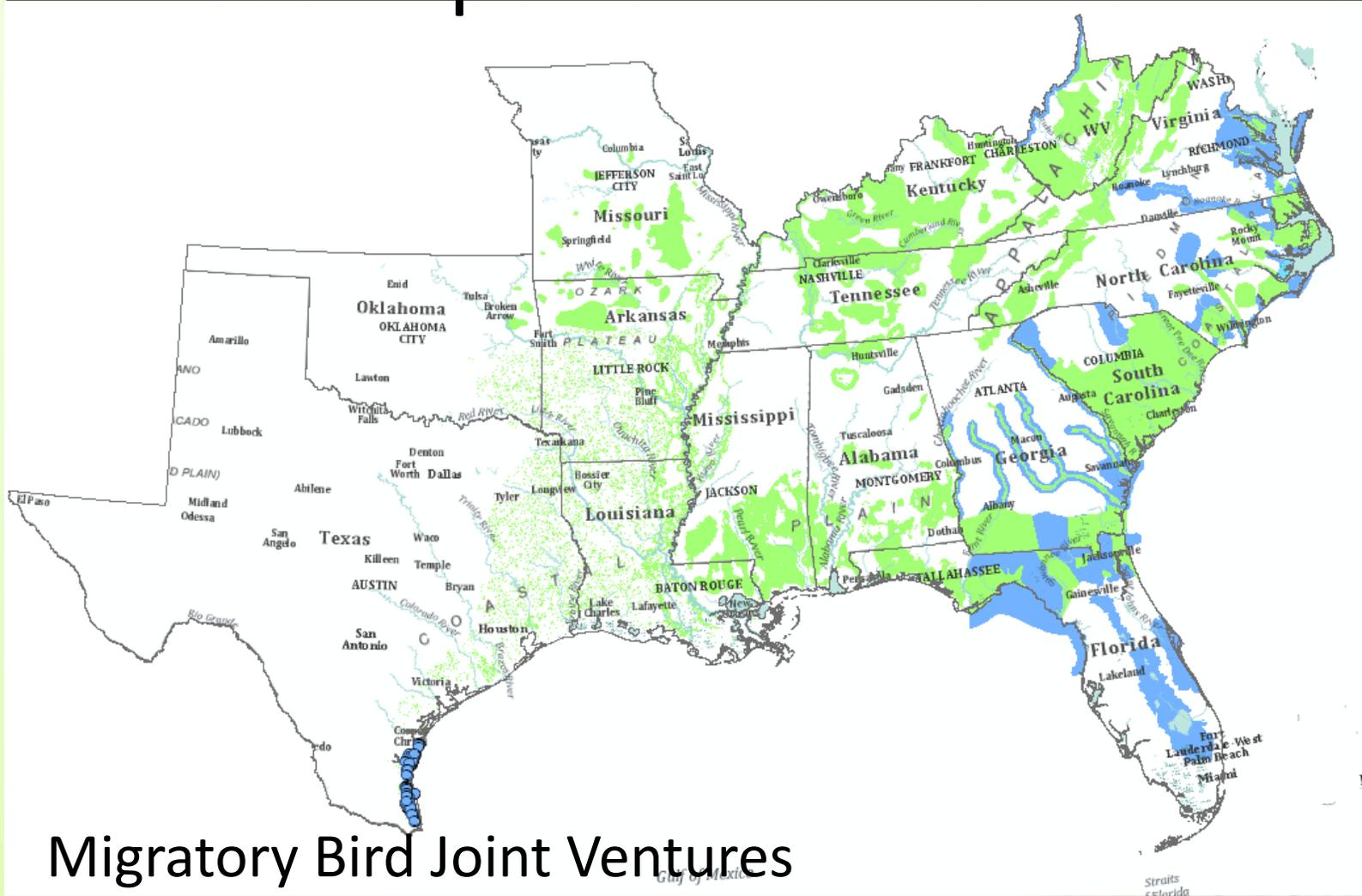


# An Incomplete & “Un-proved” Snapshot of Areas Important for Conservation



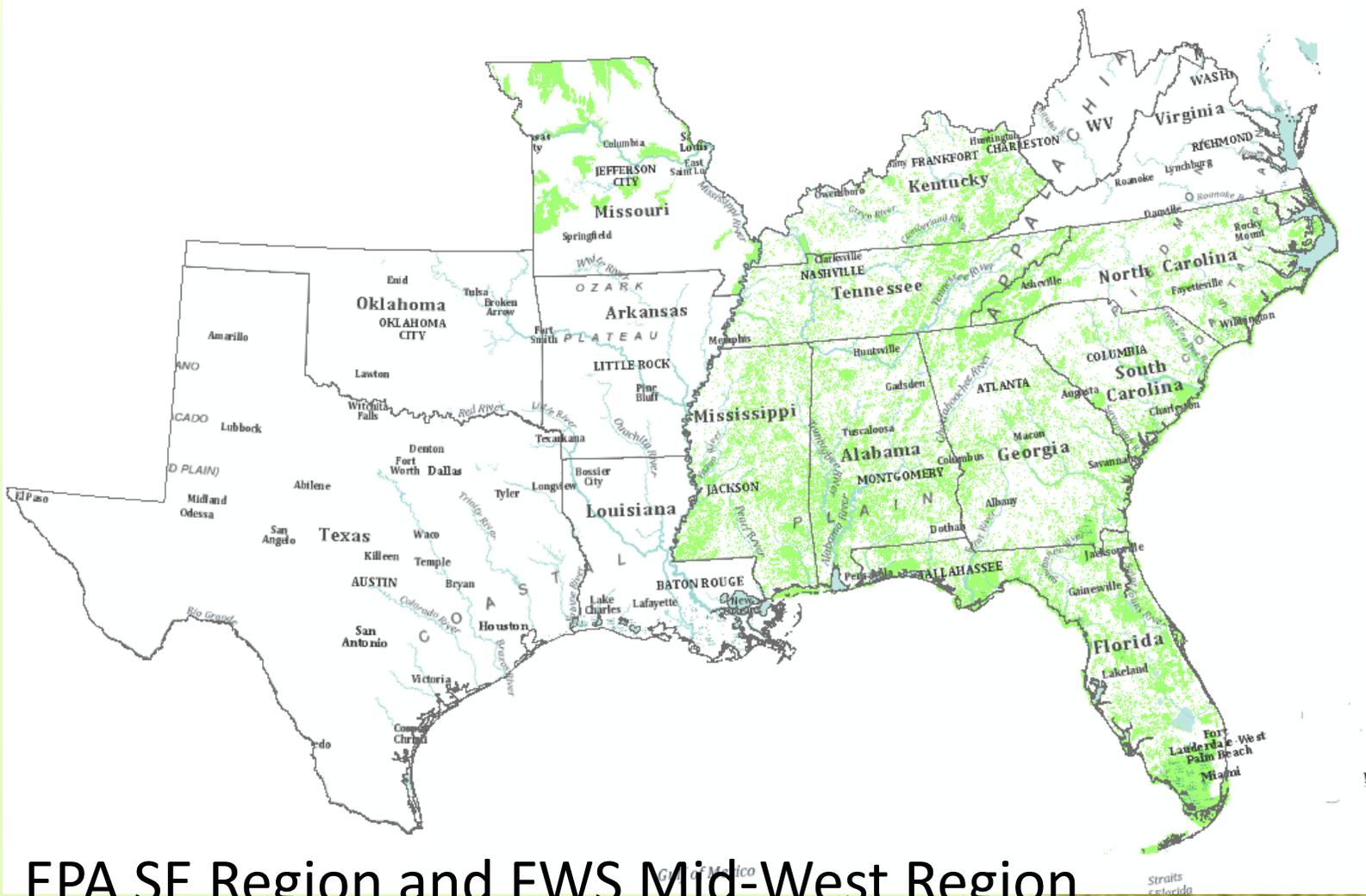
Southeast Aquatic Resource Partnership

# An Incomplete & “Un-proved” Snapshot of Areas Important for Conservation



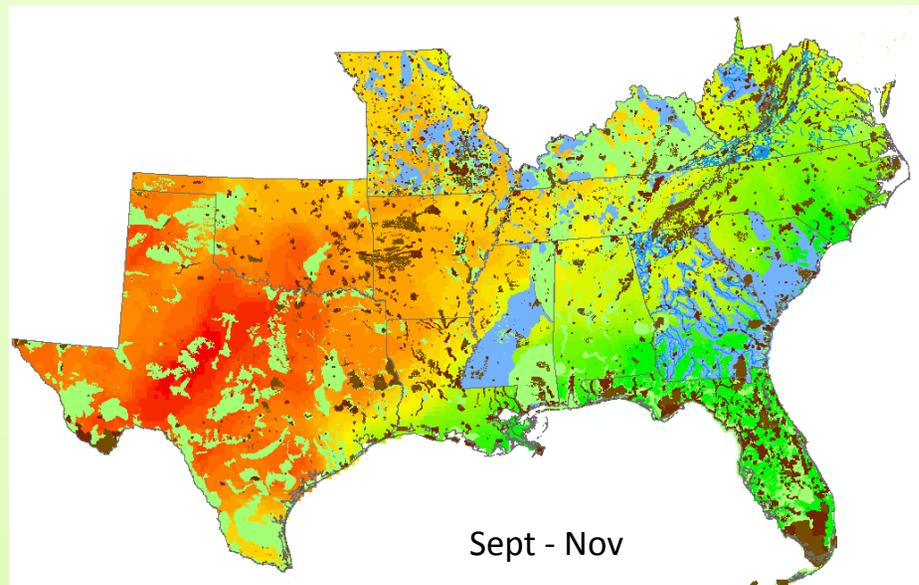
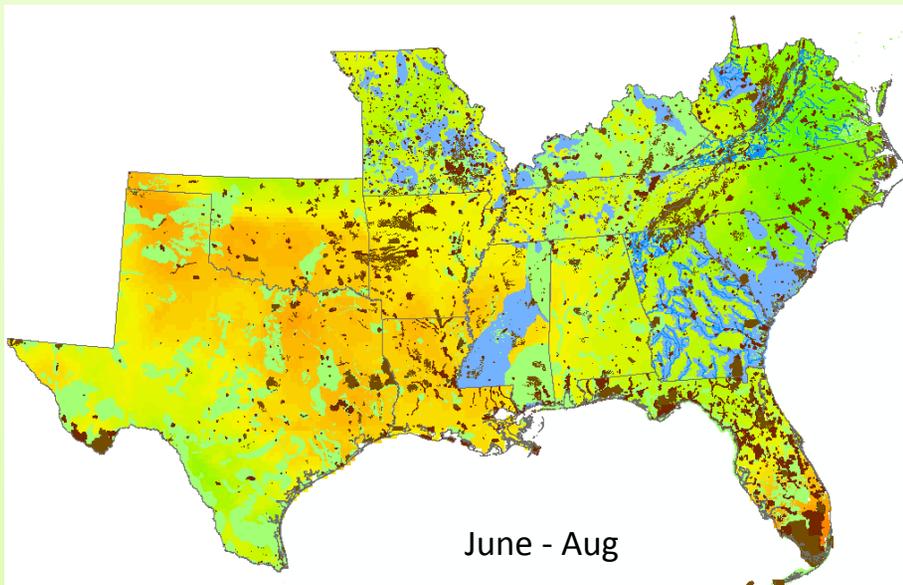
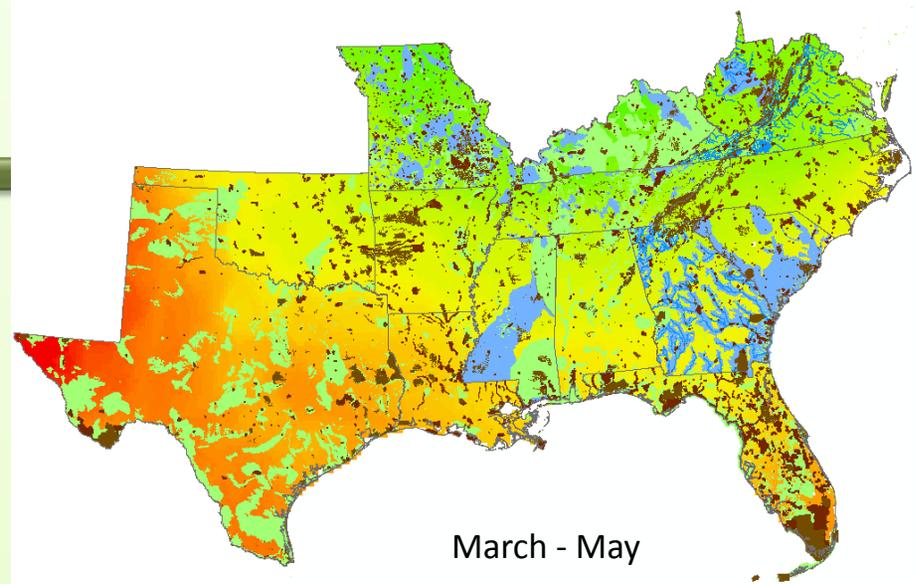
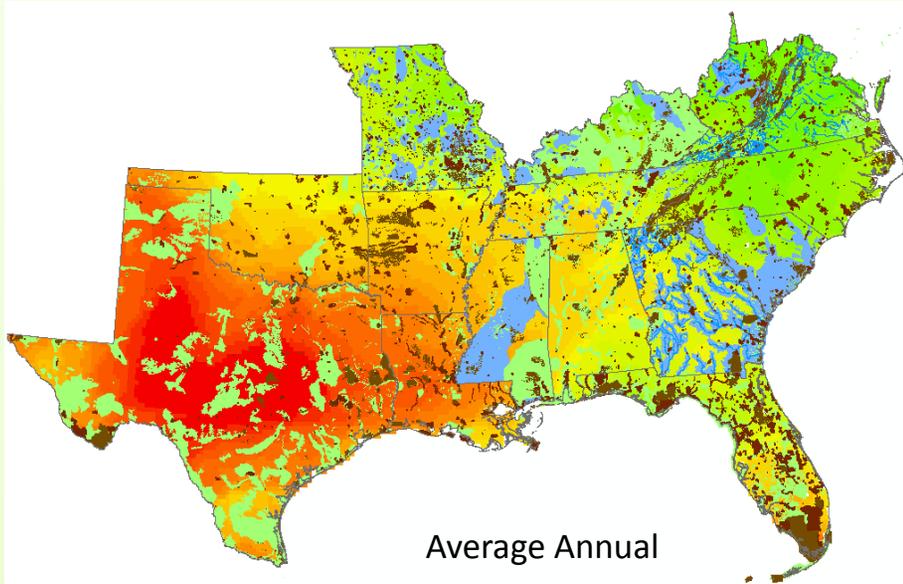
Migratory Bird Joint Ventures

# An Incomplete & “Un-proofed” Snapshot of Areas Important for Conservation

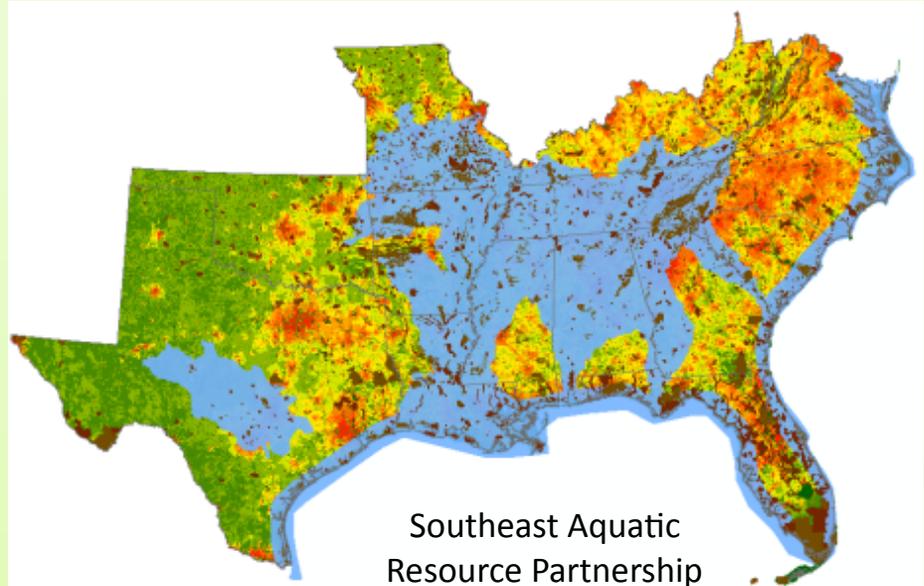
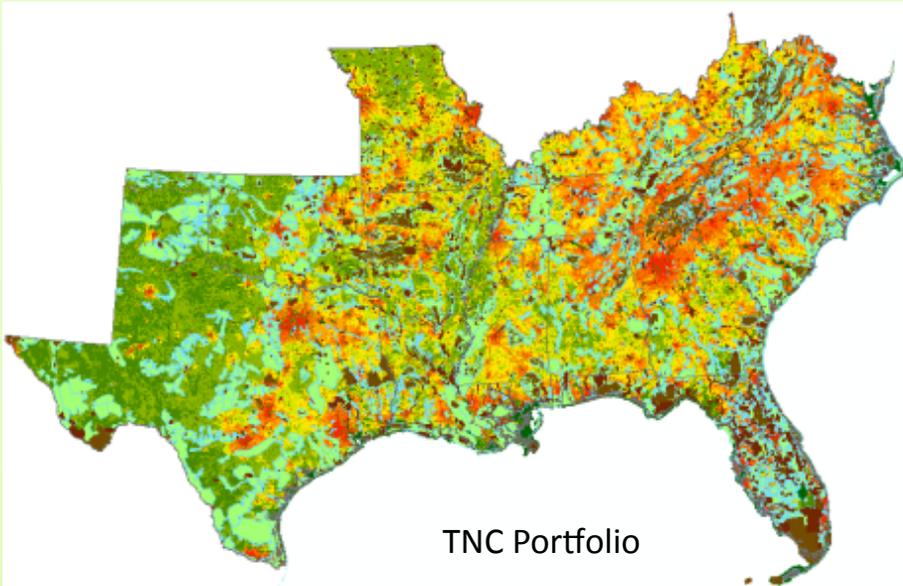
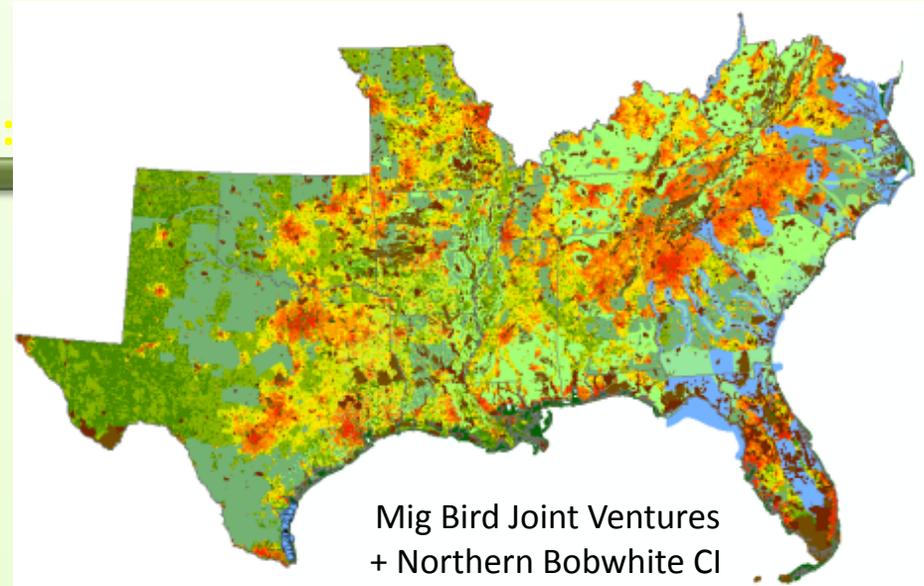
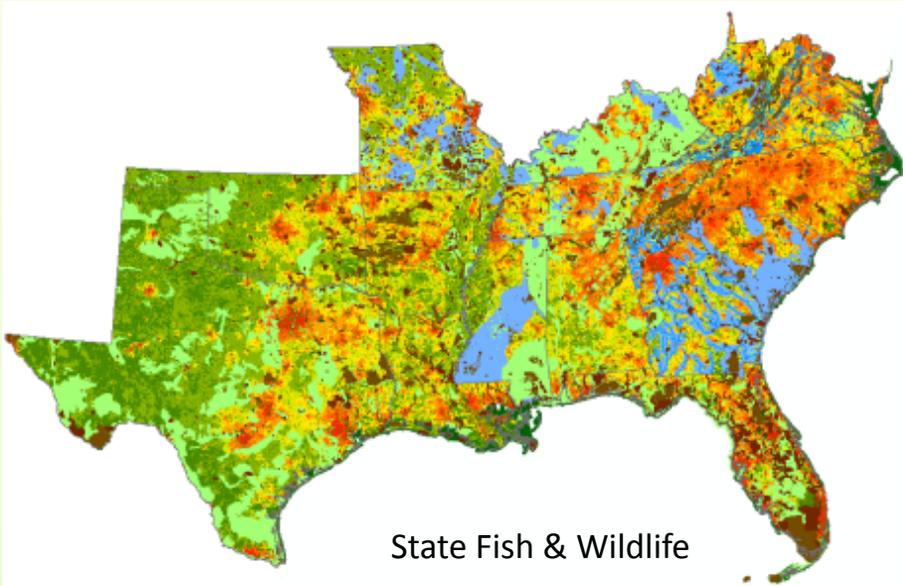


EPA SE Region and FWS Mid-West Region

# Climate Change & Areas Important to Conservation



# Urban Growth & Areas Important to Conservation



# Conservation In Transition: Adapting To Meet The Growing Challenges In Sustaining Fish & Wildlife

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**"We must put our work in the context of landscape sustainability...**

**It makes us Think Bigger, It makes us Better.**

**We must know why we do what we do.**

**We must be nimble, able to adapt to remain relevant.**

Dan Ashe, Director  
US Fish & Wildlife Service  
2012



**Why:** To respond to unprecedented threats at appropriate scale with new technologies.

**What:** Strategic Habitat Conservation and biological outcomes, can we “see” change in the system more quickly and clearly.

**How:** Pursuing our mission, based on our existing knowledge and tools for management, but integrating at a different scale.

